1, TITLE: Learning Depth from Focus in the Wild
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/19_ECCV_2022_paper.php
AUTHORS: Changyeon Won, Hae-Gon Jeon
HIGHLIGHT: In this work, we present a convolutional neural network-based depth estimation from single focal stacks.In addition, for the generalization of the proposed network, we develop a simulator to realistically reproduce the features of commercial cameras, such as changes in field of view, focal length and principal points.

2, TITLE: Learning-Based Point Cloud Registration for 6D Object Pose Estimation in the Real World
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/69_ECCV_2022_paper.php
AUTHORS: Zheng Dang, Lizhou Wang, Yu Guo, Mathieu Salzmann
HIGHLIGHT: In this work, we tackle the task of estimating the 6D pose of an object from point cloud data.

3, TITLE: An End-to-End Transformer Model for Crowd Localization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/127_ECCV_2022_paper.php
AUTHORS: Dingkang Liang, Wei Xu, Xiang Bai
HIGHLIGHT: In this paper, we propose an elegant, end-to-end Crowd Localization TRansformer named CLTR that solves the task in the regression-based paradigm.

4, TITLE: Few-Shot Single-View 3D Reconstruction with Memory Prior Contrastive Network
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/192_ECCV_2022_paper.php
AUTHORS: Zhen Xing, Yijiang Chen, Zhixin Ling, Xiangdong Zhou, Yu Xiang
HIGHLIGHT: In this paper, we present a Memory Prior Contrastive Network (MPCN) that can store shape prior knowledge in a few-shot learning based 3D reconstruction framework.

5, TITLE: DID-M3D: Decoupling Instance Depth for Monocular 3D Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/343_ECCV_2022_paper.php
AUTHORS: Liang Peng, Xiaopei Wu, Zheng Yang, Haifeng Liu, Deng Cai
HIGHLIGHT: It is coupled by visual depth clues and instance attribute clues, making it hard to be directly learned in the network. Therefore, we propose to reformulate the instance depth to the combination of the instance visual surface depth (visual depth) and the instance attribute depth (attribute depth).

6, TITLE: Adaptive Co-Teaching for Unsupervised Monocular Depth Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/405_ECCV_2022_paper.php
AUTHORS: Weisong Ren, Lijun Wang, Yongri Piao, Miao Zhang, Huchuan Lu, Ting Liu
HIGHLIGHT: Unsupervised depth estimation using photometric losses suffers from local minimum and training instability. We address this issue by proposing an adaptive co-teaching framework to distill the learned knowledge from unsupervised teacher networks to a student network.

7, TITLE: Fusing Local Similarities for Retrieval-Based 3D Orientation Estimation of Unseen Objects
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/444_ECCV_2022_paper.php
AUTHORS: Chen Zhao, Yinlin Hu, Mathieu Salzmann
HIGHLIGHT: In this paper, we tackle the task of estimating the 3D orientation of previously-unseen objects from monocular images.

8, TITLE: Lidar Point Cloud Guided Monocular 3D Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/655_ECCV_2022_paper.php
AUTHORS: Liang Peng, Fei Liu, Zhengxu Yu, Senbo Yan, Dan Deng, Zheng Yang, Haifeng Liu, Deng Cai
HIGHLIGHT: We delve into this underlying mechanism and then empirically find that: concerning the label accuracy, the 3D location part in the label is preferred compared to other parts of labels. Motivated by the conclusions above and considering the precise LiDAR 3D measurement, we propose a simple and effective framework, dubbed LiDAR point cloud guided monocular 3D object detection (LPCG).

9, TITLE: Structural Causal 3D Reconstruction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/656_ECCV_2022_paper.php
AUTHORS: Weiyang Liu, Zhen Liu, Liam Paull, Adrian Weller, Bernhard Sch&ouml,lkopf
HIGHLIGHT: This paper considers the problem of unsupervised 3D object reconstruction from in-the-wild single-view images.

10, TITLE: 3D Human Pose Estimation Using M&oumlbius Graph Convolutional Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1049_ECCV_2022_paper.php
AUTHORS: Niloofar Azizi, Horst Possegger, Emanuele Rodol&agrave,, Horst Bischof
HIGHLIGHT: However, a major limitation of GCNs is their inability to encode all the transformations between joints explicitly. To address this issue, we propose a novel spectral GCN using the M&oumlbius transformation (M&oumlbiusGCN).

11, TITLE: Learning to Train a Point Cloud Reconstruction Network without Matching
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1235_ECCV_2022_paper.php
AUTHORS: Tianxin Huang, Xuemeng Yang, Jiangning Zhang, Jinhao Cui, Hao Zou, Jun Chen, Xiangrui Zhao, Yong Liu
HIGHLIGHT: In this work, we propose a novel framework named PCLossNet which learns to train a point cloud reconstruction network without any matching.

12, TITLE: PanoFormer: Panorama Transformer for Indoor 360&deg Depth Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1300_ECCV_2022_paper.php
AUTHORS: Zhijie Shen, Chunyu Lin, Kang Liao, Lang Nie, Zishuo Zheng, Yao Zhao
HIGHLIGHT: This paper proposes the panorama Transformer (named PanoFormer) to estimate the depth in panorama images, with tangent patches from spherical domain, learnable token flows, and panorama specific metrics.

13, TITLE: Self-supervised Human Mesh Recovery with Cross-Representation Alignment
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1534_ECCV_2022_paper.php
AUTHORS: Xuan Gong, Meng Zheng, Benjamin Planche, Srikrishna Karanam, Terrence Chen, David Doermann, Ziyan Wu
HIGHLIGHT: However, on synthetic dense correspondence maps (i.e., IUV) few have been explored since the domain gap between synthetic training data and real testing data is hard to address for 2D dense representation. To alleviate this domain gap on IUV, we propose cross-representation alignment utilizing the complementary information from the robust but sparse representation (2D keypoints).

14, TITLE: AlignSDF: Pose-Aligned Signed Distance Fields for Hand-Object Reconstruction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1549_ECCV_2022_paper.php
AUTHORS: Zerui Chen, Yana Hasson, Cordelia Schmid, Ivan Laptev
HIGHLIGHT: In particular, we propose a joint learning framework that disentangles the pose and the shape.

15, TITLE: A Reliable Online Method for Joint Estimation of Focal Length and Camera Rotation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1737_ECCV_2022_paper.php
AUTHORS: Yiming Qian, James H. Elder
HIGHLIGHT: Linear perspective cues deriving from regularities of the built environment can be used to recalibrate both intrinsic and extrinsic camera parameters online, but these estimates can be unreliable due to irregularities in the scene, uncertainties in line segment estimation and background clutter. Here we address this challenge through four initiatives.

16, TITLE: PS-NeRF: Neural Inverse Rendering for Multi-View Photometric Stereo
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1832_ECCV_2022_paper.php
AUTHORS: Wenqi Yang, Guanying Chen, Chaofeng Chen, Zhenfang Chen, Kwan-Yee K. Wong
HIGHLIGHT: In this paper, we present a neural inverse rendering method for MVPS based on implicit representation.

17, TITLE: Share with Thy Neighbors: Single-View Reconstruction by Cross-Instance Consistency
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1851_ECCV_2022_paper.php
AUTHORS: Tom Monnier, Matthew Fisher, Alexei A. Efros, Mathieu Aubry
HIGHLIGHT: Our main contributions are two ways for leveraging cross-instance consistency: (i) progressive conditioning, a training strategy to gradually specialize the model from category to instances in a curriculum learning fashion and (ii) neighbor reconstruction, a loss enforcing consistency between instances having similar shape or texture.

18, TITLE: Towards Comprehensive Representation Enhancement in Semantics-Guided Self-Supervised Monocular Depth Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1925_ECCV_2022_paper.php
AUTHORS: Jingyuan Ma, Xiangyu Lei, Nan Liu, Xian Zhao, Shiliang Pu
HIGHLIGHT: In this work, we propose an attention-based module to enhance task-specific feature by addressing their feature uniqueness within instances.

19, TITLE: AvatarCap: Animatable Avatar Conditioned Monocular Human Volumetric Capture
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2057_ECCV_2022_paper.php
AUTHORS: Zhe Li, Zerong Zheng, Hongwen Zhang, Chaonan Ji, Yebin Liu
HIGHLIGHT: To address the ill-posed problem caused by partial observations in monocular human volumetric capture, we present AvatarCap, a novel framework that introduces animatable avatars into the capture pipeline for high-fidelity reconstruction in both visible and invisible regions.

20, TITLE: Cross-Attention of Disentangled Modalities for 3D Human Mesh Recovery with Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2116_ECCV_2022_paper.php
AUTHORS: Junhyeong Cho, Kim Youwang, Tae-Hyun Oh
HIGHLIGHT: In this paper, we propose a novel transformer encoder-decoder architecture for 3D human mesh reconstruction from a single image, called FastMETRO.

21, TITLE: GeoRefine: Self-Supervised Online Depth Refinement for Accurate Dense Mapping
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2124_ECCV_2022_paper.php
AUTHORS: Pan Ji, Qingan Yan, Yuxin Ma, Yi Xu
HIGHLIGHT: We present a robust and accurate depth refinement system, named GeoRefine, for geometrically-consistent dense mapping from monocular sequences.

22, TITLE: Multi-modal Masked Pre-training for Monocular Panoramic Depth Completion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2269_ECCV_2022_paper.php
AUTHORS: Zhiqiang Yan, Xiang Li, Kun Wang, Zhenyu Zhang, Jun Li, Jian Yang
HIGHLIGHT: In this paper, we formulate a potentially valuable panoramic depth completion (PDC) task as panoramic 3D cameras often produce 360&Acirc&deg depth with missing data in complex scenes.

23, TITLE:       GitNet: Geometric Prior-Based Transformation for Birds-Eye-View Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2449_ECCV_2022_paper.php
AUTHORS:       Shi Gong, Xiaoqing Ye, Xiao Tan, Jingdong Wang, Errui Ding, Yu Zhou, Xiang Bai
HIGHLIGHT:       We present a novel two-stage Geometry PrIor-based Transformation framework named GitNet, consisting of (i) the geometry-guided pre-alignment and (ii) ray-based transformer.

24, TITLE:       Learning Visibility for Robust Dense Human Body Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2568_ECCV_2022_paper.php
AUTHORS:       Chun-Han Yao, Jimei Yang, Duygu Ceylan, Yi Zhou, Yang Zhou, Ming-Hsuan Yang
HIGHLIGHT:       In this work, we learn dense human body estimation that is robust to partial observations.

25, TITLE:       Towards High-Fidelity Single-View Holistic Reconstruction of Indoor Scenes
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2747_ECCV_2022_paper.php
AUTHORS:       Haolin Liu, Yujian Zheng, Guanying Chen, Shuguang Cui, Xiaoguang Han
HIGHLIGHT:       We present a new framework to reconstruct holistic 3D indoor scenes including both room background and indoor objects from single-view images.

26, TITLE:       CompNVS: Novel View Synthesis with Scene Completion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2786_ECCV_2022_paper.php
AUTHORS:       Zuoyue Li, Tianxing Fan, Zhenqiang Li, Zhaopeng Cui, Yoichi Sato, Marc Pollefeys, Martin R. Oswald
HIGHLIGHT:       We introduce a scalable framework for novel view synthesis from RGB-D images with largely incomplete scene coverage.

27, TITLE:       SketchSampler: Sketch-Based 3D Reconstruction via View-Dependent Depth Sampling
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2822_ECCV_2022_paper.php
AUTHORS:       Chenjian Gao, Qian Yu, Lu Sheng, Yi-Zhe Song, Dong Xu
HIGHLIGHT:       Through analyzing the 3D-to-2D projection process, we notice that the density map that characterizes the distribution of 2D point clouds (i.e., the probability of points projected at each location of the projection plane) can be used as a proxy to facilitate the reconstruction process.

28, TITLE:       LocalBins: Improving Depth Estimation by Learning Local Distributions
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2871_ECCV_2022_paper.php
AUTHORS:       Shariq Farooq Bhat, Ibraheem Alhashim, Peter Wonka
HIGHLIGHT:       We propose a novel architecture for depth estimation from a single image.

29, TITLE:       2D GANs Meet Unsupervised Single-View 3D Reconstruction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2888_ECCV_2022_paper.php
AUTHORS:       Feng Liu, Xiaoming Liu
HIGHLIGHT:       However, less attention has been devoted to 3D vision tasks. In light of this, we propose a novel image-conditioned neural implicit field, which can leverage 2D supervisions from GAN-generated multi-view images and perform the single-view reconstruction of generic objects.

30, TITLE:       InfiniteNature-Zero: Learning Perpetual View Generation of Natural Scenes from Single Images
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2911_ECCV_2022_paper.php
AUTHORS:       Zhengqi Li, Qianqian Wang, Noah Snavely, Angjoo Kanazawa
HIGHLIGHT:       We present a method for learning to generate unbounded flythrough videos of natural scenes starting from a single view.

31, TITLE:       Semi-Supervised Single-View 3D Reconstruction via Prototype Shape Priors
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3139_ECCV_2022_paper.php
AUTHORS:       Zhen Xing, Hengduo Li, Zuxuan Wu, Yu-Gang Jiang
HIGHLIGHT:       In particular, we introduce an attention-guided prototype shape prior module for guiding realistic object reconstruction.

32, TITLE:       Bilateral Normal Integration
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3202_ECCV_2022_paper.php
AUTHORS:       Xu Cao, Hiroaki Santo, Boxin Shi, Fumio Okura, Yasuyuki Matsushita
HIGHLIGHT:       To model discontinuities, we introduce the assumption that the surface to be recovered is semi-smooth, i.e., the surface is one-sided differentiable (hence one-sided continuous) everywhere in the horizontal and vertical directions.

33, TITLE:       S$^2$Contact: Graph-Based Network for 3D Hand-Object Contact Estimation with Semi-Supervised Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3351_ECCV_2022_paper.php
AUTHORS:       Tze Ho Elden Tse, Zhongqun Zhang, Kwang In Kim, Aleš Leonardis, Feng Zheng, Hyung Jin Chang
HIGHLIGHT:       In this paper, we propose a novel semi-supervised framework that allows us to learn contact from monocular videos.

34, TITLE:       SC-wLS: Towards Interpretable Feed-Forward Camera Re-localization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3498_ECCV_2022_paper.php
AUTHORS:       Xin Wu, Hao Zhao, Shunkai Li, Yingdian Cao, Hongbin Zha

HIGHLIGHT:	In order to have the best of both worlds, we propose a feed-forward method termed SC-wLS that exploits all scene coordinate estimates for weighted least squares pose regression.

35, TITLE:	FloatingFusion: Depth from ToF and Image-Stabilized Stereo Cameras
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3503_ECCV_2022_paper.php
AUTHORS:	Andreas Meuleman, Hakyeong Kim, James Tompkin, Min H. Kim
HIGHLIGHT:	Leveraging ToF depth estimates and a wide-angle RGB camera, we design an automatic calibration technique based on dense 2D/3D matching that can estimate camera pose intrinsic and distortion parameters of a stabilized main RGB sensor from a single snapshot.

36, TITLE:	DELTAR: Depth Estimation from a Light-Weight ToF Sensor and RGB Image
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3514_ECCV_2022_paper.php
AUTHORS:	Yijin Li, Xinyang Liu, Wenqi Dong, Han Zhou, Hujun Bao, Guofeng Zhang, Yinda Zhang, Zhaopeng Cui
HIGHLIGHT:	In this paper, we propose DELTAR, a novel method to empower light-weight ToF sensors with the capability of measuring high resolution and accurate depth by cooperating with a color image.

37, TITLE:	3D Room Layout Estimation from a Cubemap of Panorama Image via Deep Manhattan Hough Transform
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3606_ECCV_2022_paper.php
AUTHORS:	Yining Zhao, Chao Wen, Zhou Xue, Yue Gao
HIGHLIGHT:	Significant geometric structures can be compactly described by global wireframes in the estimation of 3D room layout from a single panoramic image. Based on this observation, we present an alternative approach to estimate the walls in 3D space by modeling long-range geometric patterns in a learnable Hough Transform block.

38, TITLE:	RBP-Pose: Residual Bounding Box Projection for Category-Level Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3809_ECCV_2022_paper.php
AUTHORS:	Ruida Zhang, Yan Di, Zhiqiang Lou, Fabian Manhardt, Federico Tombari, Xiangyang Ji
HIGHLIGHT:	However, their shape prior integration strategy boosts pose estimation indirectly, which leads to insufficient pose-sensitive feature extraction and slow inference speed. To tackle this problem, in this paper, we propose a novel geometry-guided Residual Object Bounding Box Projection network RBP-Pose that jointly predicts object pose and residual vectors describing the displacements from the shape-prior-indicated object surface projections on the bounding box towards real surface projections.

39, TITLE:	Monocular 3D Object Reconstruction with GAN Inversion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3999_ECCV_2022_paper.php
AUTHORS:	Junzhe Zhang, Daxuan Ren, Zhongang Cai, Chai Kiat Yeo, Bo Dai, Chen Change Loy
HIGHLIGHT:	In this work, we present MeshInversion, a novel framework to improve the reconstruction by exploiting the generative prior of a 3D GAN pre-trained for 3D textured mesh synthesis.

40, TITLE:	Map-Free Visual Relocalization: Metric Pose Relative to a Single Image
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4029_ECCV_2022_paper.php
AUTHORS:	Eduardo Arnold, Jamie Wynn, Sara Vicente, Guillermo Garcia-Hernando, Aron Monszpart, Victor Prisacariu, Daniyar Turmukhambetov, Eric Brachmann
HIGHLIGHT:	In contrast, we propose Map-free Relocalization, i.e., using only one photo of a scene to enable instant, metric scaled relocalization.Thus, we have constructed a new dataset of 655 small places of interest, such as sculptures, murals and fountains, collected worldwide.

41, TITLE:	Self-Distilled Feature Aggregation for Self-Supervised Monocular Depth Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4073_ECCV_2022_paper.php
AUTHORS:	Zhengming Zhou, Qiulei Dong
HIGHLIGHT:	Most of the existing works in literature aggregate multi-scale features for depth prediction via either straightforward concatenation or element-wise addition, however, such feature aggregation operations generally neglect the contextual consistency between multi-scale features. Addressing this problem, we propose the Self-Distilled Feature Aggregation (SDFA) module for simultaneously aggregating a pair of low-scale and high-scale features and maintaining their contextual consistency.

42, TITLE:	Planes vs. Chairs: Category-Guided 3D Shape Learning without Any 3D Cues
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4231_ECCV_2022_paper.php
AUTHORS:	Zixuan Huang, Stefan Stojanov, Anh Thai, Varun Jampani, James M. Rehg
HIGHLIGHT:	We present a novel 3D shape reconstruction method which learns to predict an implicit 3D shape representation from a single RGB image.

43, TITLE:	MHR-Net: Multiple-Hypothesis Reconstruction of Non-rigid Shapes from 2D Views
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4241_ECCV_2022_paper.php
AUTHORS:	Haitian Zeng, Xin Yu, Jiaxu Miao, Yi Yang
HIGHLIGHT:	We propose MHR-Net, a novel method for recovering Non-Rigid Shapes from Motion (NRSfM).

44, TITLE:	Depth Map Decomposition for Monocular Depth Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4247_ECCV_2022_paper.php
AUTHORS:	Jinyoung Jun, Jae-Han Lee, Chul Lee, Chang-Su Kim
HIGHLIGHT:	We propose a novel algorithm for monocular depth estimation that decomposes a metric depth map into a normalized depth map and scale features.

45, TITLE: Monitored Distillation for Positive Congruent Depth Completion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4288_ECCV_2022_paper.php
AUTHORS: Tian Yu Liu, Parth Agrawal, Allison Chen, Byung-Woo Hong, Alex Wong
HIGHLIGHT: We propose a method to infer a dense depth map from a single image, its calibration, and the associated sparse point cloud.

46, TITLE: Resolution-Free Point Cloud Sampling Network with Data Distillation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4326_ECCV_2022_paper.php
AUTHORS: Tianxin Huang, Jiangning Zhang, Jun Chen, Yuang Liu, Yong Liu
HIGHLIGHT: In this work, we propose a novel resolution-free point clouds sampling network to directly sample the original point cloud to different resolutions, which is conducted by optimizing non-learning-based initial sampled points to better positions.

47, TITLE: Organic Priors in Non-rigid Structure from Motion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4720_ECCV_2022_paper.php
AUTHORS: Suryansh Kumar, Luc Van Gool
HIGHLIGHT: It is shown that such priors reside in the factorized matrices, and quite surprisingly, existing methods generally disregard them. The paper's main contribution is to put forward a simple, methodical, and practical method that can effectively exploit such organic priors to solve NRSfM.

48, TITLE: Perspective Flow Aggregation for Data-Limited 6D Object Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4807_ECCV_2022_paper.php
AUTHORS: Yinlin Hu, Pascal Fua, Mathieu Salzmann
HIGHLIGHT: In this paper, we propose a method that can be trained solely on synthetic images, or optionally using a few additional real ones.

49, TITLE: DANBO: Disentangled Articulated Neural Body Representations via Graph Neural Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4883_ECCV_2022_paper.php
AUTHORS: Shih-Yang Su, Timur Bagautdinov, Helge Rhodin
HIGHLIGHT: We introduce a three-stage method that induces two inductive biases to better disentangled pose-dependent deformation.

50, TITLE: CHORE: Contact, Human and Object REconstruction from a Single RGB Image
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4894_ECCV_2022_paper.php
AUTHORS: Xianghui Xie, Bharat Lal Bhatnagar, Gerard Pons-Moll
HIGHLIGHT: In this paper, we introduce CHORE, a novel method that learns to jointly reconstruct the human and the object from a single RGB image.

51, TITLE: Learned Vertex Descent: A New Direction for 3D Human Model Fitting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4918_ECCV_2022_paper.php
AUTHORS: Enric Corona, Gerard Pons-Moll, Guillem Aleny&agrave,, Francesc Moreno-Noguer
HIGHLIGHT: We propose a novel optimization-based paradigm for 3D human shape fitting on images.

52, TITLE: Self-Calibrating Photometric Stereo by Neural Inverse Rendering
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5007_ECCV_2022_paper.php
AUTHORS: Junxuan Li, Hongdong Li
HIGHLIGHT: We propose a new method that jointly optimizes object shape, light directions, and light intensities, all under general surfaces and lights assumptions.

53, TITLE: 3D Clothed Human Reconstruction in the Wild
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5036_ECCV_2022_paper.php
AUTHORS: Gyeongsik Moon, Hyeongjin Nam, Takaaki Shiratori, Kyoung Mu Lee
HIGHLIGHT: However, such datasets contain simple human poses and less natural image appearances compared to those of real in-the-wild datasets, which makes generalization of it to in-the-wild images extremely challenging. To resolve this issue, in this work, we propose ClothWild, a 3D clothed human reconstruction framework that firstly addresses the robustness on in-thewild images.

54, TITLE: Directed Ray Distance Functions for 3D Scene Reconstruction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5180_ECCV_2022_paper.php
AUTHORS: Nilesh Kulkarni, Justin Johnson, David F. Fouhey
HIGHLIGHT: We present an approach for full 3D scene reconstruction from a single new image that can be trained on realistic non-watertight scans.

55, TITLE: Object Level Depth Reconstruction for Category Level 6D Object Pose Estimation from Monocular RGB Image
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5287_ECCV_2022_paper.php
AUTHORS: Zhaoxin Fan, Zhenbo Song, Jian Xu, Zhicheng Wang, Kejian Wu, Hongyan Liu, Jun He
HIGHLIGHT: Recently, RGBD-based category-level 6D object pose estimation has achieved promising improvement in performance, however, the requirement of depth information prohibits broader applications. In order to relieve this problem, this paper proposes a novel approach named Object Level Depth reconstruction Network (OLD-Net) taking only RGB images as input for category-level 6D object pose estimation.

56, TITLE: Uncertainty Quantification in Depth Estimation via Constrained Ordinal Regression
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5351_ECCV_2022_paper.php
AUTHORS: Dongting Hu, Liuhua Peng, Tingjin Chu, Xiaoxing Zhang, Yinian Mao, Howard Bondell, Mingming Gong
HIGHLIGHT: This paper provides an uncertainty quantification method for supervised MDE models.

57, TITLE: CostDCNet: Cost Volume Based Depth Completion for a Single RGB-D Image
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5688_ECCV_2022_paper.php
AUTHORS: Jaewon Kam, Jungeon Kim, Soongjin Kim, Jaesik Park, Seungyong Lee
HIGHLIGHT: We propose a novel depth completion framework, CostDCNet, based on the cost volume-based depth estimation approach that has been successfully employed for multi-view stereo (MVS).

58, TITLE: ShAPO: Implicit Representations for Multi-Object Shape, Appearance, and Pose Optimization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5770_ECCV_2022_paper.php
AUTHORS: Muhammad Zubair Irshad, Sergey Zakharov, Rare? Ambru?, Thomas Kollar, Zsolt Kira, Adrien Gaidon
HIGHLIGHT: We present ShAPO, a method for joint multi-object detection, 3D textured reconstruction, 6D object pose and size estimation.

59, TITLE: 3D Siamese Transformer Network for Single Object Tracking on Point Clouds
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5829_ECCV_2022_paper.php
AUTHORS: Le Hui, Lingpeng Wang, Linghua Tang, Kaihao Lan, Jin Xie, Jian Yang
HIGHLIGHT: In this paper, we explicitly use Transformer to form a 3D Siamese Transformer network for learning robust cross correlation between the template and the search area of point clouds.

60, TITLE: Object Wake-Up: 3D Object Rigging from a Single Image
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5901_ECCV_2022_paper.php
AUTHORS: Ji Yang, Xinxin Zuo, Sen Wang, Zhenbo Yu, Xingyu Li, Bingbing Ni, Minglun Gong, Li Cheng
HIGHLIGHT: It is a new problem that not only goes beyond image-based object reconstruction but also involves articulated animation of generic objects in 3D, which could give rise to numerous downstream augmented and virtual reality applications. In this paper, we propose an automated approach to tackle the entire process of reconstruct such generic 3D objects, rigging and animation, all from single images.

61, TITLE: IntegratedPIFu: Integrated Pixel Aligned Implicit Function for Single-View Human Reconstruction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5915_ECCV_2022_paper.php
AUTHORS: Kennard Yanting Chan, Guosheng Lin, Haiyu Zhao, Weisi Lin
HIGHLIGHT: We propose IntegratedPIFu, a new pixel-aligned implicit model that builds on the foundation set by PIFuHD.

62, TITLE: Realistic One-Shot Mesh-Based Head Avatars
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6023_ECCV_2022_paper.php
AUTHORS: Taras Khakhulin, Vanessa Sklyarova, Victor Lempitsky, Egor Zakharov
HIGHLIGHT: We present a system for the creation of realistic one-shot mesh-based (ROME) human head avatars.

63, TITLE: A Kendall Shape Space Approach to 3D Shape Estimation from 2D Landmarks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6090_ECCV_2022_paper.php
AUTHORS: Martha Paskin, Daniel Baum, Mason N. Dean, Christoph von Tycowicz
HIGHLIGHT: Here, we present a new approach based on Kendall's shape space to reconstruct 3D shapes from single monocular 2D images.

64, TITLE: Neural Light Field Estimation for Street Scenes with Differentiable Virtual Object Insertion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6516_ECCV_2022_paper.php
AUTHORS: Zian Wang, Wenzheng Chen, David Acuna, Jan Kautz, Sanja Fidler
HIGHLIGHT: In this work, we propose a neural approach that estimates the 5D HDR light field from a single image, and a differentiable object insertion formulation that enables end-to-end training with image-based losses that encourage realism.

65, TITLE: Perspective Phase Angle Model for Polarimetric 3D Reconstruction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6667_ECCV_2022_paper.php
AUTHORS: Guangcheng Chen, Li He, Yisheng Guan, Hong Zhang
HIGHLIGHT: In the case of a large field of view, however, this assumption does not hold and may result in significant reconstruction errors in methods that make this assumption. To address this problem, we present the perspective phase angle (PPA) model that is applicable to perspective cameras.

66, TITLE: DeepShadow: Neural Shape from Shadow
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7476_ECCV_2022_paper.php
AUTHORS: Asaf Karnieli, Ohad Fried, Yacov Hel-Or
HIGHLIGHT: This paper presents 'DeepShadow', a one-shot method for recovering the depth map and surface normals from photometric stereo shadow maps.

67, TITLE: Camera Auto-Calibration from the Steiner Conic of the Fundamental Matrix
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7605_ECCV_2022_paper.php
AUTHORS: Yu Liu, Hui Zhang

HIGHLIGHT:         We thus propose a method to fully calibrate the camera.

68, TITLE:         Super-Resolution 3D Human Shape from a Single Low-Resolution Image
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7765_ECCV_2022_paper.php
AUTHORS:         Marco Pesavento, Marco Volino, Adrian Hilton
HIGHLIGHT:         We propose a novel framework to reconstruct super-resolution human shape from a single low-resolution input image.

69, TITLE:         Minimal Neural Atlas: Parameterizing Complex Surfaces with Minimal Charts and Distortion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/107_ECCV_2022_paper.php
AUTHORS:         Weng Fei Low, Gim Hee Lee
HIGHLIGHT:         In this work, we present Minimal Neural Atlas, a novel atlas-based explicit neural surface representation.

70, TITLE:         ExtrudeNet: Unsupervised Inverse Sketch-and-Extrude for Shape Parsing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/194_ECCV_2022_paper.php
AUTHORS:         Daxuan Ren, Jianmin Zheng, Jianfei Cai, Jiatong Li, Junzhe Zhang
HIGHLIGHT:         We present ExtrudeNet, an unsupervised end-to-end network for discovering sketch and extrude from point clouds.

71, TITLE:         CATRE: Iterative Point Clouds Alignment for Category-Level Object Pose Refinement
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/326_ECCV_2022_paper.php
AUTHORS:         Xingyu Liu, Gu Wang, Yi Li, Xiangyang Ji
HIGHLIGHT:         In specific, we propose a novel disentangled architecture being aware of the inherent distinctions between rotation and translation/size estimation.

72, TITLE:         Optimization over Disentangled Encoding: Unsupervised Cross-Domain Point Cloud Completion via Occlusion Factor Manipulation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/361_ECCV_2022_paper.php
AUTHORS:         Jingyu Gong, Fengqi Liu, Jiachen Xu, Min Wang, Xin Tan, Zhizhong Zhang, Ran Yi, Haichuan Song, Yuan Xie, Lizhuang Ma
HIGHLIGHT:         In this paper, we disentangle partial scans into three (domain, shape, and occlusion) factors to handle the output gap in cross-domain completion.

73, TITLE:         Unsupervised Learning of 3D Semantic Keypoints with Mutual Reconstruction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/463_ECCV_2022_paper.php
AUTHORS:         Haocheng Yuan, Chen Zhao, Shichao Fan, Jiaxi Jiang, Jiaqi Yang
HIGHLIGHT:         From a novel mutual reconstruction perspective, we present an unsupervised method to generate consistent semantic keypoints from point clouds explicitly.

74, TITLE:         MvDeCor: Multi-View Dense Correspondence Learning for Fine-Grained 3D Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/525_ECCV_2022_paper.php
AUTHORS:         Gopal Sharma, Kangxue Yin, Subhransu Maji, Evangelos Kalogerakis, Or Litany, Sanja Fidler
HIGHLIGHT:         We propose to utilize self-supervised techniques in the 2D domain for fine-grained 3D shape segmentation tasks.

75, TITLE:         SUPR: A Sparse Unified Part-Based Human Representation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/570_ECCV_2022_paper.php
AUTHORS:         Ahmed A. A. Osman, Timo Bolkart, Dimitrios Tzionas, Michael J. Black
HIGHLIGHT:         Consequently, we propose a new learning scheme that jointly trains a full-body model and specific part models using a federated dataset of full-body and body-part scans.

76, TITLE:         Revisiting Point Cloud Simplification: A Learnable Feature Preserving Approach
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/584_ECCV_2022_paper.php
AUTHORS:         Rolandos Alexandros Potamias, Giorgos Bouritsas, Stefanos Zafeiriou
HIGHLIGHT:         Traditional simplification techniques usually rely on solving a time-consuming optimization problem, hence they are impractical for large-scale datasets. In an attempt to alleviate this computational burden, we propose a fast point cloud simplification method by learning to sample salient points.

77, TITLE:         Masked Autoencoders for Point Cloud Self-Supervised Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/800_ECCV_2022_paper.php
AUTHORS:         Yatian Pang, Wenxiao Wang, Francis E.H. Tay, Wei Liu, Yonghong Tian, Li Yuan
HIGHLIGHT:         As a promising scheme of self-supervised learning, masked autoencoding has significantly advanced natural language processing and computer vision. Inspired by this, we propose a neat scheme of masked autoencoders for point cloud self-supervised learning, addressing the challenges posed by point cloud's properties, including leakage of location information and uneven information density.

78, TITLE:         Intrinsic Neural Fields: Learning Functions on Manifolds
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/927_ECCV_2022_paper.php
AUTHORS:         Lukas Koestler, Daniel Grittner, Michael Moeller, Daniel Cremers, Zorah L&auml,hner

HIGHLIGHT: The extrinsic embedding ignores known intrinsic manifold properties and is inflexible wrt. transfer of the learned function. To overcome these limitations, this work introduces intrinsic neural fields, a novel and versatile representation for neural fields on manifolds.

79, TITLE: Skeleton-Free Pose Transfer for Stylized 3D Characters
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1103_ECCV_2022_paper.php
AUTHORS: Zhouyingcheng Liao, Jimei Yang, Jun Saito, Gerard Pons-Moll, Yang Zhou
HIGHLIGHT: We present the first method that automatically transfers poses between stylized 3D characters without skeletal rigging.

80, TITLE: Masked Discrimination for Self-Supervised Learning on Point Clouds
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1209_ECCV_2022_paper.php
AUTHORS: Haotian Liu, Mu Cai, Yong Jae Lee
HIGHLIGHT: However, mask based pretraining has yet to show benefits for point cloud understanding, likely due to standard backbones like PointNet being unable to properly handle the training versus testing distribution mismatch introduced by masking during training. In this paper, we bridge this gap by proposing a discriminative mask pretraining Transformer framework, MaskPoint, for point clouds.

81, TITLE: FBNet: Feedback Network for Point Cloud Completion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1272_ECCV_2022_paper.php
AUTHORS: Xuejun Yan, Hongyu Yan, Jingjing Wang, Hang Du, Zhihong Wu, Di Xie, Shiliang Pu, Li Lu
HIGHLIGHT: To this end, we propose a novel Feedback Network (FBNet) for point cloud completion, in which present features are efficiently refined by rerouting subsequent fine-grained ones.

82, TITLE: Meta-Sampler: Almost-Universal yet Task-Oriented Sampling for Point Clouds
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1516_ECCV_2022_paper.php
AUTHORS: Ta-Ying Cheng, Qingyong Hu, Qian Xie, Niki Trigoni, Andrew Markham
HIGHLIGHT: In this work, we propose an almost-universal sampler, in our quest for a sampler that can learn to preserve the most useful points for a particular task, yet be inexpensive to adapt to different tasks, models or datasets.

83, TITLE: A Level Set Theory for Neural Implicit Evolution under Explicit Flows
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1742_ECCV_2022_paper.php
AUTHORS: Ishit Mehta, Manmohan Chandraker, Ravi Ramamoorthi
HIGHLIGHT: They effectively act as parametric level sets with the zero-level set defining the surface of interest. We present a framework that allows applying deformation operations defined for triangle meshes onto such implicit surfaces.

84, TITLE: Efficient Point Cloud Analysis Using Hilbert Curve
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1859_ECCV_2022_paper.php
AUTHORS: Wanli Chen, Xinge Zhu, Guojin Chen, Bei Yu
HIGHLIGHT: In this way, we propose the HilbertNet to maintain the locality advantage of voxel-based methods while significantly reducing the computational cost.

85, TITLE: TOCH: Spatio-Temporal Object-to-Hand Correspondence for Motion Refinement
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1991_ECCV_2022_paper.php
AUTHORS: Keyang Zhou, Bharat Lal Bhatnagar, Jan Eric Lenssen, Gerard Pons-Moll
HIGHLIGHT: We present TOCH, a method for refining incorrect 3D hand-object interaction sequences using a data prior.

86, TITLE: LaTeRF: Label and Text Driven Object Radiance Fields
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2145_ECCV_2022_paper.php
AUTHORS: Ashkan Mirzaei, Yash Kant, Jonathan Kelly, Igor Gilitschenski
HIGHLIGHT: In this paper we introduce LaTeRF, a method for extracting an object of interest from a scene given 2D images of the entire scene and known camera poses, a natural language description of the object, and a small number of point-labels of object and non-object points in the input images.

87, TITLE: MeshMAE: Masked Autoencoders for 3D Mesh Data Analysis
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2319_ECCV_2022_paper.php
AUTHORS: Yaqian Liang, Shanshan Zhao, Baosheng Yu, Jing Zhang, Fazhi He
HIGHLIGHT: Recently, self-supervised pre-training has advanced Vision Transformers on various tasks w.r.t. different data modalities, e.g., image and 3D point cloud data. In this paper, we explore this learning paradigm for 3D mesh data analysis based on Transformers.

88, TITLE: Unsupervised Deep Multi-Shape Matching
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2459_ECCV_2022_paper.php
AUTHORS: Dongliang Cao, Florian Bernard
HIGHLIGHT: In this paper, we present a novel approach for deep multi-shape matching that ensures cycle-consistent multi-matchings while not depending on an explicit template shape.

89, TITLE: Texturify: Generating Textures on 3D Shape Surfaces
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2573_ECCV_2022_paper.php
AUTHORS: Yawar Siddiqui, Justus Thies, Fangchang Ma, Qi Shan, Matthias Nie&szlig;ner, Angela Dai

HIGHLIGHT: We thus propose Texturify, a GAN-based method that leverages a 3D shape dataset of an object class and learns to reproduce the distribution of appearances observed in real images by generating high-quality textures.

90, TITLE: Autoregressive 3D Shape Generation via Canonical Mapping
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2586_ECCV_2022_paper.php
AUTHORS: An-Chieh Cheng, Xueting Li, Sifei Liu, Min Sun, Ming-Hsuan Yang
HIGHLIGHT: Yet, taming them in generating less structured and voluminous data formats such as high-resolution point clouds have seldom been explored due to ambiguous sequentialization processes and infeasible computation burden. In this paper, we aim to further exploit the power of transformers and employ them for the task of 3D point cloud generation.

91, TITLE: PointTree: Transformation-Robust Point Cloud Encoder with Relaxed K-D Trees
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2625_ECCV_2022_paper.php
AUTHORS: Jun-Kun Chen, Yu-Xiong Wang
HIGHLIGHT: Despite rapid progress, state-of-the-art encoders are restrictive to canonicalized point clouds, and have weaker than necessary performance when encountering geometric transformation distortions. To overcome this challenge, we propose PointTree, a general-purpose point cloud encoder that is robust to transformations based on relaxed K-D trees.

92, TITLE: UNIF: United Neural Implicit Functions for Clothed Human Reconstruction and Animation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2902_ECCV_2022_paper.php
AUTHORS: Shenhan Qian, Jiale Xu, Ziwei Liu, Liqian Ma, Shenghua Gao
HIGHLIGHT: We propose united implicit functions (UNIF), a part-based method for clothed human reconstruction and animation with raw scans and skeletons as the input.

93, TITLE: PRIF: Primary Ray-Based Implicit Function
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2921_ECCV_2022_paper.php
AUTHORS: Brandon Y. Feng, Yinda Zhang, Danhang Tang, Ruofei Du, Amitabh Varshney
HIGHLIGHT: We introduce a new implicit shape representation called Primary Ray-based Implicit Function (PRIF).

94, TITLE: Point Cloud Domain Adaptation via Masked Local 3D Structure Prediction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3035_ECCV_2022_paper.php
AUTHORS: Hanxue Liang, Hehe Fan, Zhiwen Fan, Yi Wang, Tianlong Chen, Yu Cheng, Zhangyang Wang
HIGHLIGHT: In this paper, we propose a Masked Local Structure Prediction (MLSP) method to encode target data.

95, TITLE: CLIP-Actor: Text-Driven Recommendation and Stylization for Animating Human Meshes
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3229_ECCV_2022_paper.php
AUTHORS: Kim Youwang, Kim Ji-Yeon, Tae-Hyun Oh
HIGHLIGHT: We propose CLIP-Actor, a text-driven motion recommendation and neural mesh stylization system for human mesh animation.

96, TITLE: PlaneFormers: From Sparse View Planes to 3D Reconstruction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3429_ECCV_2022_paper.php
AUTHORS: Samir Agarwala, Linyi Jin, Chris Rockwell, David F. Fouhey
HIGHLIGHT: We present an approach for the planar surface reconstruction of a scene from images with limited overlap.

97, TITLE: Learning Implicit Templates for Point-Based Clothed Human Modeling
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3747_ECCV_2022_paper.php
AUTHORS: Siyou Lin, Hongwen Zhang, Zerong Zheng, Ruizhi Shao, Yebin Liu
HIGHLIGHT: We present FITE, a First-Implicit-Then-Explicit framework for modeling human avatars in clothing.

98, TITLE: Exploring the Devil in Graph Spectral Domain for 3D Point Cloud Attacks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4378_ECCV_2022_paper.php
AUTHORS: Qianjiang Hu, Daizong Liu, Wei Hu
HIGHLIGHT: Instead, we propose point cloud attacks from a new perspective---Graph Spectral Domain Attack (GSDA), aiming to perturb transform coefficients in the graph spectral domain that corresponds to varying certain geometric structure.

99, TITLE: Structure-Aware Editable Morphable Model for 3D Facial Detail Animation and Manipulation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4426_ECCV_2022_paper.php
AUTHORS: Jingwang Ling, Zhibo Wang, Ming Lu, Quan Wang, Chen Qian, Feng Xu
HIGHLIGHT: This paper augments morphable models in representing facial details by learning a Structure-aware Editable Morphable Model (SEMM).

100, TITLE: MoFaNeRF: Morphable Facial Neural Radiance Field
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4505_ECCV_2022_paper.php
AUTHORS: Yiyu Zhuang, Hao Zhu, Xusen Sun, Xun Cao
HIGHLIGHT: We propose a parametric model that maps free-view images into a vector space of coded facial shape, expression and appearance with a neural radiance field, namely Morphable Facial NeRF.

101, TITLE: PointInst3D: Segmenting 3D Instances by Points
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4530_ECCV_2022_paper.php
AUTHORS: Tong He, Wei Yin, Chunhua Shen, Anton van den Hengel

HIGHLIGHT: In contrast, we propose a fully convolutional 3D point cloud instance segmentation method that works in a per-point prediction fashion.

102, TITLE: Cross-Modal 3D Shape Generation and Manipulation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4596_ECCV_2022_paper.php
AUTHORS: Zezhou Cheng, Menglei Chai, Jian Ren, Hsin-Ying Lee, Kyle Olszewski, Zeng Huang, Subhransu Maji, Sergey Tulyakov
HIGHLIGHT: In this paper, we propose a generic multi-modal generative model that couples the 2D modalities and implicit 3D representations through shared latent spaces.

103, TITLE: Latent Partition Implicit with Surface Codes for 3D Representation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4607_ECCV_2022_paper.php
AUTHORS: Chao Chen, Yu-Shen Liu, Zhizhong Han
HIGHLIGHT: Current solutions learn various primitives and blend the primitives directly in the spatial space, which still struggle to approximate the 3D shape accurately. To resolve this problem, we introduce a novel implicit representation to represent a single 3D shape as a set of parts in the latent space, towards both highly accurate and plausibly interpretable shape modeling.

104, TITLE: Implicit Field Supervision for Robust Non-rigid Shape Matching
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4910_ECCV_2022_paper.php
AUTHORS: Ramana Sundararaman, Gautam Pai, Maks Ovsjanikov
HIGHLIGHT: In this paper, we introduce an approach based on an auto-decoder framework, that learns a continuous shape-wise deformation field over a fixed template.

105, TITLE: Learning Self-Prior for Mesh Denoising Using Dual Graph Convolutional Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4934_ECCV_2022_paper.php
AUTHORS: Shota Hattori, Tatsuya Yatagawa, Yutaka Ohtake, Hiromasa Suzuki
HIGHLIGHT: This study proposes a deep-learning framework for mesh denoising from a single noisy input, where two graph convolutional networks are trained jointly to filter vertex positions and facet normals apart.

106, TITLE: diffConv: Analyzing Irregular Point Clouds with an Irregular View
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4972_ECCV_2022_paper.php
AUTHORS: Manxi Lin, Aasa Feragen
HIGHLIGHT: We present a novel graph convolution named Difference Graph Convolution (diffConv), which does not rely on a regular view.

107, TITLE: PD-Flow: A Point Cloud Denoising Framework with Normalizing Flows
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4988_ECCV_2022_paper.php
AUTHORS: Aihua Mao, Zihui Du, Yu-Hui Wen, Jun Xuan, Yong-Jin Liu
HIGHLIGHT: We present a novel deep learning-based denoising model, that incorporates normalizing flows and noise disentanglement techniques to achieve high denoising accuracy.

108, TITLE: SeedFormer: Patch Seeds Based Point Cloud Completion with Upsample Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5127_ECCV_2022_paper.php
AUTHORS: Haoran Zhou, Yun Cao, Wenqing Chu, Junwei Zhu, Tong Lu, Ying Tai, Chengjie Wang
HIGHLIGHT: In this paper, we propose a novel SeedFormer to improve the ability of detail preservation and recovery in point cloud completion.

109, TITLE: DeepMend: Learning Occupancy Functions to Represent Shape for Repair
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5293_ECCV_2022_paper.php
AUTHORS: Nikolas Lamb, Sean Banerjee, Natasha Kholgade Banerjee
HIGHLIGHT: We present DeepMend, a novel approach to reconstruct restorations to fractured shapes using learned occupancy functions.

110, TITLE: A Repulsive Force Unit for Garment Collision Handling in Neural Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5372_ECCV_2022_paper.php
AUTHORS: Qingyang Tan, Yi Zhou, Tuanfeng Wang, Duygu Ceylan, Xin Sun, Dinesh Manocha
HIGHLIGHT: Despite recent success, deep learning-based methods for predicting 3D garment deformation under body motion suffer from interpenetration problems between the garment and the body. To address this problem, we propose a novel collision handling neural network layer called Repulsive Force Unit (ReFU).

111, TITLE: Shape-Pose Disentanglement Using SE(3)-Equivariant Vector Neurons
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5713_ECCV_2022_paper.php
AUTHORS: Oren Katzir, Dani Lischinski, Daniel Cohen-Or
HIGHLIGHT: We introduce an unsupervised technique for encoding point clouds into a canonical shape representation, by disentangling shape and pose.

112, TITLE: 3D Equivariant Graph Implicit Functions
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6067_ECCV_2022_paper.php
AUTHORS: Yunlu Chen, Basura Fernando, Hakan Bilen, Matthias Nie&szlig;ner, Efstratios Gavves

HIGHLIGHT: In recent years, neural implicit representations have made remarkable progress in modeling of 3D shapes with arbitrary topology. In this work, we address two key limitations of such representations, in failing to capture local 3D geometric fine details, and to learn from and generalize to shapes with unseen 3D transformations.

113, TITLE: PatchRD: Detail-Preserving Shape Completion by Learning Patch Retrieval and Deformation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6203_ECCV_2022_paper.php
AUTHORS: Bo Sun, Vladimir G. Kim, Noam Aigerman, Qixing Huang, Siddhartha Chaudhuri
HIGHLIGHT: This paper introduces a data-driven shape completion approach that focuses on completing geometric details of missing regions of 3D shapes.

114, TITLE: 3D Shape Sequence of Human Comparison and Classification Using Current and Varifolds
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6963_ECCV_2022_paper.php
AUTHORS: Emery Pierson, Mohamed Daoudi, Sylvain Arguillere
HIGHLIGHT: In this paper we address the task of the comparison and the classification of 3D shape sequences of human.

115, TITLE: Conditional-Flow NeRF: Accurate 3D Modelling with Reliable Uncertainty Quantification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7028_ECCV_2022_paper.php
AUTHORS: Jianxiong Shen, Antonio Agudo, Francesc Moreno-Noguer, Adria Ruiz
HIGHLIGHT: This information is paramount in real applications such as medical diagnosis or autonomous driving where, to reduce potentially catastrophic failures, the confidence on the model outputs must be included into the decision-making process. In this context, we introduce Conditional-Flow NeRF (CF-NeRF), a novel probabilistic framework to incorporate uncertainty quantification into NeRF-based approaches.

116, TITLE: Unsupervised Pose-Aware Part Decomposition for Man-Made Articulated Objects
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7414_ECCV_2022_paper.php
AUTHORS: Yuki Kawana, Yusuke Mukuta, Tatsuya Harada
HIGHLIGHT: In this paper, we propose PPD (unsupervised Pose-aware Part Decomposition) to address a novel setting that explicitly targets man-made articulated objects with mechanical joints, considering the part poses in part parsing.

117, TITLE: MeshUDF: Fast and Differentiable Meshing of Unsigned Distance Field Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7511_ECCV_2022_paper.php
AUTHORS: Beno&icirc;t Guillard, Federico Stella, Pascal Fua
HIGHLIGHT: Here, we extend the marching cube algorithm to handle UDFs, both fast and accurately.

118, TITLE: SPE-Net: Boosting Point Cloud Analysis via Rotation Robustness Enhancement
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7651_ECCV_2022_paper.php
AUTHORS: Zhaofan Qiu, Yehao Li, Yu Wang, Yingwei Pan, Ting Yao, Tao Mei
HIGHLIGHT: In this paper, we propose a novel deep architecture tailored for 3D point cloud applications, named as SPE-Net.

119, TITLE: The Shape Part Slot Machine: Contact-Based Reasoning for Generating 3D Shapes from Parts
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7704_ECCV_2022_paper.php
AUTHORS: Kai Wang, Paul Guerrero, Vladimir G. Kim, Siddhartha Chaudhuri, Minhyuk Sung, Daniel Ritchie
HIGHLIGHT: We present the Shape Part Slot Machine, a new method for assembling novel 3D shapes from existing parts by performing contact-based reasoning.

120, TITLE: Spatiotemporal Self-Attention Modeling with Temporal Patch Shift for Action Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/334_ECCV_2022_paper.php
AUTHORS: Wangmeng Xiang, Chao Li, Biao Wang, Xihan Wei, Xian-Sheng Hua, Lei Zhang
HIGHLIGHT: In this paper, we propose a Temporal Patch Shift (TPS) method for efficient 3D self-attention modeling in transformers for video-based action recognition.

121, TITLE: Proposal-Free Temporal Action Detection via Global Segmentation Mask Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/977_ECCV_2022_paper.php
AUTHORS: Sauradip Nag, Xiatian Zhu, Yi-Zhe Song, Tao Xiang
HIGHLIGHT: In this work, for the first time, we propose a proposal-free Temporal Action detection model with Global Segmentation mask (TAGS).

122, TITLE: Semi-Supervised Temporal Action Detection with Proposal-Free Masking
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1003_ECCV_2022_paper.php
AUTHORS: Sauradip Nag, Xiatian Zhu, Yi-Zhe Song, Tao Xiang
HIGHLIGHT: Due to their sequential localization (e.g, proposal generation) and classification design, they are prone to proposal error propagation. To overcome this limitation, in this work we propose a novel Semi-supervised Temporal action detection model based on PropOsal-free Temporal mask (SPOT) with a parallel localization (mask generation) and classification architecture.

123, TITLE: Zero-Shot Temporal Action Detection via Vision-Language Prompting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1010_ECCV_2022_paper.php
AUTHORS: Sauradip Nag, Xiatian Zhu, Yi-Zhe Song, Tao Xiang
HIGHLIGHT: However, due to the sequential localization (e.g, proposal generation) and classification design, it is prone to localization error propagation. To overcome this problem, in this paper we propose a novel zero-Shot Temporal Action detection model via vision-LanguagE prompting (STALE).

124, TITLE:        CycDA: Unsupervised Cycle Domain Adaptation to Learn from Image to Video
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1118_ECCV_2022_paper.php
AUTHORS:        Wei Lin, Anna Kukleva, Kunyang Sun, Horst Possegger, Hilde Kuehne, Horst Bischof
HIGHLIGHT:        This poses two major challenges: (1) spatial domain shift between web images and video frames (2) modality gap between image and video data. To address these challenges, we propose Cycle Domain Adaptation (CycDA), a cycle-based approach for unsupervised image-to-video domain adaptation.

125, TITLE:        S2N: Suppression-Strengthen Network for Event-Based Recognition under Variant Illuminations
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1155_ECCV_2022_paper.php
AUTHORS:        Zengyu Wan, Yang Wang, Ganchao Tan, Yang Cao, Zheng-Jun Zha
HIGHLIGHT:        However, the event degradation due to imaging under low illumination obscures the correlation between event signals and brings uncertainty into event representation. Targeting this issue, we present a novel suppression-strengthen network (S2N) to augment the event feature representation after suppressing the influence of degradation.

126, TITLE:        CMD: Self-Supervised 3D Action Representation Learning with Cross-Modal Mutual Distillation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1212_ECCV_2022_paper.php
AUTHORS:        Yunyao Mao, Wengang Zhou, Zhenbo Lu, Jiajun Deng, Houqiang Li
HIGHLIGHT:        In this work, we formulate the cross-modal interaction as a bidirectional knowledge distillation problem.

127, TITLE:        Expanding Language-Image Pretrained Models for General Video Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1398_ECCV_2022_paper.php
AUTHORS:        Bolin Ni, Houwen Peng, Minghao Chen, Songyang Zhang, Gaofeng Meng, Jianlong Fu, Shiming Xiang, Haibin Ling
HIGHLIGHT:        In this work, we present a simple yet effective approach that adapts the pretrained language-image models to video recognition directly, instead of pretraining a new model from scratch.

128, TITLE:        Hunting Group Clues with Transformers for Social Group Activity Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1482_ECCV_2022_paper.php
AUTHORS:        Masato Tamura, Rahul Vishwakarma, Ravigopal Vennelakanti
HIGHLIGHT:        This paper presents a novel framework for social group activity recognition.

129, TITLE:        Contrastive Positive Mining for Unsupervised 3D Action Representation Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1578_ECCV_2022_paper.php
AUTHORS:        Haoyuan Zhang, Yonghong Hou, Wenjing Zhang, Wanqing Li
HIGHLIGHT:        In this paper, a Contrastive Positive Mining (CPM) framework is proposed for unsupervised skeleton 3D action representation learning.

130, TITLE:        Target-Absent Human Attention
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2104_ECCV_2022_paper.php
AUTHORS:        Zhibo Yang, Sounak Mondal, Seoyoung Ahn, Gregory Zelinsky, Minh Hoai, Dimitris Samaras
HIGHLIGHT:        In this paper, we propose a data-driven computational model that addresses the search-termination problem and predicts the scanpath of search fixations made by people searching for targets that do not appear in images.

131, TITLE:        Uncertainty-Based Spatial-Temporal Attention for Online Action Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2138_ECCV_2022_paper.php
AUTHORS:        Hongji Guo, Zhou Ren, Yi Wu, Gang Hua, Qiang Ji
HIGHLIGHT:        In this paper, we proposed an uncertainty-based spatial-temporal attention for online action detection.

132, TITLE:        Iwin: Human-Object Interaction Detection via Transformer with Irregular Windows
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2219_ECCV_2022_paper.php
AUTHORS:        Danyang Tu, Xiongkuo Min, Huiyu Duan, Guodong Guo, Guangtao Zhai, Wei Shen
HIGHLIGHT:        This paper presents a new vision Transformer, named Iwin Transformer, which is specifically designed for human-object interaction (HOI) detection, a detailed scene understanding task involving a sequential process of human/object detection and interaction recognition.

133, TITLE:        Rethinking Zero-Shot Action Recognition: Learning from Latent Atomic Actions
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2233_ECCV_2022_paper.php
AUTHORS:        Yijun Qian, Lijun Yu, Wenhe Liu, Alexander G. Hauptmann
HIGHLIGHT:        It enables humans to quickly understand an unseen action given a bunch of atomic actions learned from seen actions. Inspired by this, we propose Jigsaw Network (JigsawNet) which recognizes complex actions through unsupervisedly decomposing them into combinations of atomic actions and bridging group-to-group relationships between visual features and semantic representations.

134, TITLE:        Mining Cross-Person Cues for Body-Part Interactiveness Learning in HOI Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2328_ECCV_2022_paper.php
AUTHORS:        Xiaoqian Wu, Yong-Lu Li, Xinpeng Liu, Junyi Zhang, Yuzhe Wu, Cewu Lu
HIGHLIGHT:        In this paper, we argue that comparing body-parts of multi-person simultaneously can afford us more useful and supplementary interactiveness cues.

135, TITLE: Collaborating Domain-Shared and Target-Specific Feature Clustering for Cross-Domain 3D Action Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2404_ECCV_2022_paper.php
AUTHORS: Qinying Liu, Zilei Wang
HIGHLIGHT: In this work, we consider the problem of cross-domain 3D action recognition in the open-set setting, which has been rarely explored before.

136, TITLE: Is Appearance Free Action Recognition Possible?
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2545_ECCV_2022_paper.php
AUTHORS: Filip Ilic, Thomas Pock, Richard P. Wildes
HIGHLIGHT: Our results show a notable decrease in performance for all architectures on AFD compared to RGB. We also conducted a complimentary study with humans that shows their recognition accuracy on AFD and RGB is very similar and much better than the evaluated architectures on AFD.

137, TITLE: Learning Spatial-Preserved Skeleton Representations for Few-Shot Action Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3345_ECCV_2022_paper.php
AUTHORS: Ning Ma, Hongyi Zhang, Xuhui Li, Sheng Zhou, Zhen Zhang, Jun Wen, Haifeng Li, Jingjun Gu, Jiajun Bu
HIGHLIGHT: However, existing skeleton-based spatial-temporal models tend to deteriorate the positional distinguishability of joints, which leads to fuzzy spatial matching and poor explainability. To address these issues, we propose a novel spatial matching strategy consisting of spatial disentanglement and spatial activation.

138, TITLE: Dual-Evidential Learning for Weakly-Supervised Temporal Action Localization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3504_ECCV_2022_paper.php
AUTHORS: Mengyuan Chen, Junyu Gao, Shicai Yang, Changsheng Xu
HIGHLIGHT: Despite great progress, existing methods suffer from severe action-background ambiguity, which mainly comes from background noise introduced by aggregation operations and large intra-action variations caused by the task gap between classification and localization. To address this issue, we propose a generalized evidential deep learning (EDL) framework for WS-TAL, called Dual-Evidential Learning for Uncertainty modeling (DELU), which extends the traditional paradigm of EDL to adapt to the weakly-supervised multi-label classification goal.

139, TITLE: Global-Local Motion Transformer for Unsupervised Skeleton-Based Action Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4076_ECCV_2022_paper.php
AUTHORS: Boeun Kim, Hyung Jin Chang, Jungho Kim, Jin Young Choi
HIGHLIGHT: We propose a new transformer model for the task of unsupervised learning of skeleton motion sequences.

140, TITLE: AdaFocusV3: On Unified Spatial-Temporal Dynamic Video Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4120_ECCV_2022_paper.php
AUTHORS: Yulin Wang, Yang Yue, Xinhong Xu, Ali Hassani, Victor Kulikov, Nikita Orlov, Shiji Song, Humphrey Shi, Gao Huang
HIGHLIGHT: This paper explores the unified formulation of spatial-temporal dynamic computation on top of the recently proposed AdaFocusV2 algorithm, contributing to an improved AdaFocusV3 framework.

141, TITLE: Panoramic Human Activity Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4477_ECCV_2022_paper.php
AUTHORS: Ruize Han, Haomin Yan, Jiacheng Li, Songmiao Wang, Wei Feng, Song Wang
HIGHLIGHT: To obtain a more comprehensive activity understanding for a crowded scene, in this paper, we propose a new problem of panoramic human activity recognition (PAR), which aims to simultaneously achieve the the recognition of individual actions, social group activities, and global activities.

142, TITLE: Delving into Details: Synopsis-to-Detail Networks for Video Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4539_ECCV_2022_paper.php
AUTHORS: Shuxian Liang, Xu Shen, Jianqiang Huang, Xian-Sheng Hua
HIGHLIGHT: In this paper, we explore the details in video recognition with the aim to improve the accuracy.

143, TITLE: A Generalized \&amp Robust Framework for Timestamp Supervision in Temporal Action Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4788_ECCV_2022_paper.php
AUTHORS: Rahul Rahaman, Dipika Singhania, Alexandre Thiery, Angela Yao
HIGHLIGHT: We propose a novel Expectation-Maximization (EM) based approach which leverages label uncertainty of unlabelled frames and is robust enough to accommodate possible annotation errors.

144, TITLE: Few-Shot Action Recognition with Hierarchical Matching and Contrastive Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4804_ECCV_2022_paper.php
AUTHORS: Sipeng Zheng, Shizhe Chen, Qin Jin
HIGHLIGHT: In this work, we propose a hierarchical matching model to support comprehensive similarity measure at global, temporal and spatial levels via a zoom-in matching module.We further propose a mixed-supervised hierarchical contrastive learning (HCL) in training, which not only employs supervised contrastive learning to differentiate videos at different levels, but also utilizes cycle consistency as weak supervision to align discriminative temporal clips or spatial patches.

145, TITLE: PrivHAR: Recognizing Human Actions from Privacy-Preserving Lens
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5080_ECCV_2022_paper.php
AUTHORS: Carlos Hinojosa, Miguel Marquez, Henry Arguello, Ehsan Adeli, Li Fei-Fei, Juan Carlos Niebles

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HIGHLIGHT: In this paper, we propose an optimizing framework to provide robust visual privacy protection along the human action recognition pipeline.

146, TITLE: Scale-Aware Spatio-Temporal Relation Learning for Video Anomaly Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5111_ECCV_2022_paper.php
AUTHORS: Guoqiu Li, Guanxiong Cai, Xingyu Zeng, Rui Zhao
HIGHLIGHT: In this paper, we propose a scale-aware weakly supervised learning approach to capture local and salient anomalous patterns from the background, using only coarse video-level labels as supervision.

147, TITLE: Compound Prototype Matching for Few-Shot Action Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5118_ECCV_2022_paper.php
AUTHORS: Yifei Huang, Lijin Yang, Yoichi Sato
HIGHLIGHT: In this work, we propose a novel approach that first summarizes each video into compound prototypes consisting of a group of global prototypes and a group of focused prototypes, and then compares video similarity based on the prototypes.

148, TITLE: Continual 3D Convolutional Neural Networks for Real-Time Processing of Videos
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5612_ECCV_2022_paper.php
AUTHORS: Lukas Hedegaard, Alexandros Iosifidis
HIGHLIGHT: We introduce Continual 3D Convolutional Neural Networks (Co3D CNNs), a new computational formulation of spatio-temporal 3D CNNs, in which videos are processed frame-by-frame rather than by clip.

149, TITLE: Dynamic Spatio-Temporal Specialization Learning for Fine-Grained Action Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5677_ECCV_2022_paper.php
AUTHORS: Tianjiao Li, Lin Geng Foo, Qiuhong Ke, Hossein Rahmani, Anran Wang, Jinghua Wang, Jun Liu
HIGHLIGHT: The goal of fine-grained action recognition is to successfully discriminate between action categories with subtle differences. To tackle this, we derive inspiration from the human visual system which contains specialized regions in the brain that are dedicated towards handling specific tasks.

150, TITLE: Dynamic Local Aggregation Network with Adaptive Clusterer for Anomaly Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6078_ECCV_2022_paper.php
AUTHORS: Zhiwei Yang, Peng Wu, Jing Liu, Xiaotao Liu
HIGHLIGHT: To overcome these drawbacks, we introduce DLAN-AC, a Dynamic Local Aggregation Network with Adaptive Clusterer, for anomaly detection.

151, TITLE: Action Quality Assessment with Temporal Parsing Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6093_ECCV_2022_paper.php
AUTHORS: Yang Bai, Desen Zhou, Songyang Zhang, Jian Wang, Errui Ding, Yu Guan, Yang Long, Jingdong Wang
HIGHLIGHT: Existing state-of-the-art methods typically rely on the holistic video representations for score regression or ranking, which limits the generalization to capture fine-grained intra-class variation. To overcome the above limitation, we propose a temporal parsing transformer to decompose the holistic feature into temporal part-level representations.

152, TITLE: Entry-Flipped Transformer for Inference and Prediction of Participant Behavior
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6660_ECCV_2022_paper.php
AUTHORS: Bo Hu, Tat-Jen Cham
HIGHLIGHT: Our key idea is to model the spatio-temporal relations among participants in a manner that is robust to error accumulation during frame-wise inference and prediction.

153, TITLE: Pairwise Contrastive Learning Network for Action Quality Assessment
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6731_ECCV_2022_paper.php
AUTHORS: Mingzhe Li, Hong-Bo Zhang, Qing Lei, Zongwen Fan, Jinghua Liu, Ji-Xiang Du
HIGHLIGHT: However, it ignores the subtle and critical difference between videos. To address this problem, a new pairwise contrastive learning network (PCLN) is proposed to concern these differences and form an end-to-end AQA model with basic regression network.

154, TITLE: Geometric Features Informed Multi-Person Human-Object Interaction Recognition in Videos
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6986_ECCV_2022_paper.php
AUTHORS: Tanqiu Qiao, Qianhui Men, Frederick W. B. Li, Yoshiki Kubotani, Shigeo Morishima, Hubert P. H. Shum
HIGHLIGHT: Consider that geometric features such as human pose and object position provide meaningful information to understand HOIs, we argue to combine the benefits of both visual and geometric features in HOI recognition, and propose a novel Two-level Geometric feature-informed Graph Convolutional Network (2G-GCN).To demonstrate the novelty and effectiveness of our method in challenging scenarios, we propose a new multi-person HOI dataset (MPHOI-72).

155, TITLE: ActionFormer: Localizing Moments of Actions with Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7278_ECCV_2022_paper.php
AUTHORS: Chen-Lin Zhang, Jianxin Wu, Yin Li
HIGHLIGHT: To this end, we present ActionFormer--a simple yet powerful model to identify actions in time and recognize their categories in a single shot, without using action proposals or relying on pre-defined anchor windows.

156, TITLE: SocialVAE: Human Trajectory Prediction Using Timewise Latents

http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7925_ECCV_2022_paper.php
AUTHORS:           Pei Xu, Jean-Bernard Hayet, Ioannis Karamouzas
HIGHLIGHT:           In this paper, we propose SocialVAE, a novel approach for human trajectory prediction.

157, TITLE:           Shape Matters: Deformable Patch Attack
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/689_ECCV_2022_paper.php
AUTHORS:           Zhaoyu Chen, Bo Li, Shuang Wu, Jianghe Xu, Shouhong Ding, Wenqiang Zhang
HIGHLIGHT:           Previous work always assumes patches to have fixed shapes, such as circles or rectangles, and it does not consider the shape of patches as a factor in patch attacks. To explore this issue, we propose a novel Deformable Patch Representation (DPR) that can harness the geometric structure of triangles to support the differentiable mapping between contour modeling and masks.

158, TITLE:           Frequency Domain Model Augmentation for Adversarial Attack
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/974_ECCV_2022_paper.php
AUTHORS:           Yuyang Long, Qilong Zhang, Boheng Zeng, Lianli Gao, Xianglong Liu, Jian Zhang, Jingkuan Song
HIGHLIGHT:           Motivated by the observation that the transferability of adversarial examples can be improved by attacking diverse models simultaneously, model augmentation methods which simulate different models by using transformed images are proposed.

159, TITLE:           Prior-Guided Adversarial Initialization for Fast Adversarial Training
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1780_ECCV_2022_paper.php
AUTHORS:           Xiaojun Jia, Yong Zhang, Xingxing Wei, Baoyuan Wu, Ke Ma, Jue Wang, Xiaochun Cao
HIGHLIGHT:           In this paper, we explore the di&iuml&not€erence between the training processes of SAT and FAT and observe that the attack success rate of adversarial examples (AEs) of FAT gets worse gradually in the late training stage, resulting in overfitting.

160, TITLE:           Enhanced Accuracy and Robustness via Multi-Teacher Adversarial Distillation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2638_ECCV_2022_paper.php
AUTHORS:           Shiji Zhao, Jie Yu, Zhenlong Sun, Bo Zhang, Xingxing Wei
HIGHLIGHT:           To improve the robust and clean accuracy of small models, we introduce the Multi-Teacher Adversarial Robustness Distillation (MTARD) to guide the adversarial training process of small models.

161, TITLE:           LGV: Boosting Adversarial Example Transferability from Large Geometric Vicinity
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2864_ECCV_2022_paper.php
AUTHORS:           Martin Gubri, Maxime Cordy, Mike Papadakis, Yves Le Traon, Koushik Sen
HIGHLIGHT:           We propose transferability from Large Geometric Vicinity (LGV), a new technique to increase the transferability of black-box adversarial attacks.

162, TITLE:           A Large-Scale Multiple-Objective Method for Black-Box Attack against Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3147_ECCV_2022_paper.php
AUTHORS:           Siyuan Liang, Longkang Li, Yanbo Fan, Xiaojun Jia, Jingzhi Li, Baoyuan Wu, Xiaochun Cao
HIGHLIGHT:           Most existing attack methods aim to minimize the true positive rate, which often shows poor attack performance, as another sub-optimal bounding box may be detected around the attacked bounding box to be the new true positive one. To settle this challenge, we propose to minimize the true positive rate and maximize the false positive rate, which can encourage more false positive objects to block the generation of new true positive bounding boxes.

163, TITLE:           GradAuto: Energy-Oriented Attack on Dynamic Neural Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3150_ECCV_2022_paper.php
AUTHORS:           Jianhong Pan, Qichen Zheng, Zhipeng Fan, Hossein Rahmani, Qiuhong Ke, Jun Liu
HIGHLIGHT:           In this paper, we investigate the robustness of dynamic neural networks against energy-oriented attacks.

164, TITLE:           A Spectral View of Randomized Smoothing under Common Corruptions: Benchmarking and Improving Certified Robustness
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3225_ECCV_2022_paper.php
AUTHORS:           Jiachen Sun, Akshay Mehra, Bhavya Kailkhura, Pin-Yu Chen, Dan Hendrycks, Jihun Hamm, Z. Morley Mao
HIGHLIGHT:           In this work, we explore a new problem setting to critically examine how the adversarial robustness guarantees change when state-of-the-art randomized smoothing-based certifications encounter common corruptions of the test data.

165, TITLE:           Improving Adversarial Robustness of 3D Point Cloud Classification Models
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3322_ECCV_2022_paper.php
AUTHORS:           Guanlin Li, Guowen Xu, Han Qiu, Ruan He, Jiwei Li, Tianwei Zhang
HIGHLIGHT:           In this paper, we design two innovative methodologies to improve the adversarial robustness of 3D point cloud classification models.

166, TITLE:           Learning Extremely Lightweight and Robust Model with Differentiable Constraints on Sparsity and Condition Number
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3458_ECCV_2022_paper.php
AUTHORS:           Xian Wei, Yangyu Xu, Yanhui Huang, Hairong Lv, Hai Lan, Mingsong Chen, Xuan Tang
HIGHLIGHT:           In this work, we propose a framework for building extremely lightweight models, which combines tensor product with the differentiable constraints for reducing condition number and promoting sparsity.

167, TITLE: RIBAC: Towards Robust and Imperceptible Backdoor Attack against Compact DNN
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3867_ECCV_2022_paper.php
AUTHORS: Huy Phan, Cong Shi, Yi Xie, Tianfang Zhang, Zhuohang Li, Tianming Zhao, Jian Liu, Yan Wang, Yingying Chen, Bo Yuan
HIGHLIGHT: In this paper, we propose to study and develop Robust and Imperceptible Backdoor Attack against Compact DNN models (RIBAC).

168, TITLE: Boosting Transferability of Targeted Adversarial Examples via Hierarchical Generative Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4374_ECCV_2022_paper.php
AUTHORS: Xiao Yang, Yinpeng Dong, Tianyu Pang, Hang Su, Jun Zhu
HIGHLIGHT: To this end, we develop a simple yet effective framework to craft targeted transfer-based adversarial examples, applying a hierarchical generative network.

169, TITLE: Adaptive Image Transformations for Transfer-Based Adversarial Attack
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4557_ECCV_2022_paper.php
AUTHORS: Zheng Yuan, Jie Zhang, Shiguang Shan
HIGHLIGHT: In this work, we propose a novel architecture, called Adaptive Image Transformation Learner (AITL), which incorporates different image transformation operations into a unified framework to further improve the transferability of adversarial examples.

170, TITLE: Generative Multiplane Images: Making a 2D GAN 3D-Aware
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4610_ECCV_2022_paper.php
AUTHORS: Xiaoming Zhao, Fangchang Ma, David G&uuml;era, Zhile Ren, Alexander G. Schwing, Alex Colburn
HIGHLIGHT: What is really needed to make an existing 2D GAN 3Daware? To answer this question, we modify a classical GAN, i.e., StyleGANv2, as little as possible.

171, TITLE: AdvDO: Realistic Adversarial Attacks for Trajectory Prediction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4832_ECCV_2022_paper.php
AUTHORS: Yulong Cao, Chaowei Xiao, Anima Anandkumar, Danfei Xu, Marco Pavone
HIGHLIGHT: While many prior works aim to achieve higher prediction accuracy, few studies the adversarial robustness of their methods. To bridge this gap, we propose to study the adversarial robustness of data-driven trajectory prediction systems.

172, TITLE: Adversarial Contrastive Learning via Asymmetric InfoNCE
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4996_ECCV_2022_paper.php
AUTHORS: Qiying Yu, Jieming Lou, Xianyuan Zhan, Qizhang Li, Wangmeng Zuo, Yang Liu, Jingjing Liu
HIGHLIGHT: However, this mechanism can be potentially flawed, since adversarial perturbations may cause instance-level identity confusion, which can impede CL performance by pulling together different instances with separate identities. To address this issue, we propose to treat adversarial samples unequally when contrasted to positive and negative samples, with an asymmetric InfoNCE objective (A-InfoNCE) that allows discriminating considerations of adversarial samples.

173, TITLE: One Size Does NOT Fit All: Data-Adaptive Adversarial Training
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5491_ECCV_2022_paper.php
AUTHORS: Shuo Yang, Chang Xu
HIGHLIGHT: In this paper, we argue that, for the attackable examples, traditional adversarial training which utilizes a fixed size perturbation ball can create adversarial examples that deviate far away from the original class towards the target class.

174, TITLE: UniCR: Universally Approximated Certified Robustness via Randomized Smoothing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5812_ECCV_2022_paper.php
AUTHORS: Hanbin Hong, Binghui Wang, Yuan Hong
HIGHLIGHT: In particular, we propose the first universally approximated certified robustness (UniCR) framework, which can approximate the robustness certification of \emph{any} input on \emph{any} classifier against \emph{any} $\ell_p$ perturbations with noise generated by \emph{any} continuous probability distribution.

175, TITLE: Hardly Perceptible Trojan Attack against Neural Networks with Bit Flips
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5837_ECCV_2022_paper.php
AUTHORS: Jiawang Bai, Kuofeng Gao, Dihong Gong, Shu-Tao Xia, Zhifeng Li, Wei Liu
HIGHLIGHT: In this paper, we present a novel attack, namely hardly perceptible Trojan attack (HPT).

176, TITLE: Robust Network Architecture Search via Feature Distortion Restraining
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5974_ECCV_2022_paper.php
AUTHORS: Yaguan Qian, Shenghui Huang, Bin Wang, Xiang Ling, Xiaohui Guan, Zhaoquan Gu, Shaoning Zeng, Wujie Zhou, Haijiang Wang
HIGHLIGHT: We propose Robust Network Architecture Search (RNAS) to obtain a robust network against adversarial attacks.

177, TITLE: SecretGen: Privacy Recovery on Pre-trained Models via Distribution Discrimination
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6086_ECCV_2022_paper.php
AUTHORS: Zhuowen Yuan, Fan Wu, Yunhui Long, Chaowei Xiao, Bo Li

HIGHLIGHT: However, it raises extensive concerns on whether these pre-trained models would leak privacy-sensitive information of their training data. Thus, in this work, we aim to answer the following questions: Can we effectively recover private information from these pre-trained models?

178, TITLE: Triangle Attack: A Query-Efficient Decision-Based Adversarial Attack
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6276_ECCV_2022_paper.php
AUTHORS: Xiaosen Wang, Zeliang Zhang, Kangheng Tong, Dihong Gong, Kun He, Zhifeng Li, Wei Liu
HIGHLIGHT: In this work, we find that a benign sample, the current and the next adversarial examples can naturally construct a triangle in a subspace for any iterative attacks.

179, TITLE: Data-Free Backdoor Removal Based on Channel Lipschitzness
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6305_ECCV_2022_paper.php
AUTHORS: Runkai Zheng, Rongjun Tang, Jianze Li, Li Liu
HIGHLIGHT: In this work, we introduce a novel concept called Channel Lipschitz Constant (CLC), which is defined as the Lipschitz constant of the mapping from the input images to the output of each channel.

180, TITLE: Black-Box Dissector: Towards Erasing-Based Hard-Label Model Stealing Attack
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6441_ECCV_2022_paper.php
AUTHORS: Yixu Wang, Jie Li, Hong Liu, Yan Wang, Yongjian Wu, Feiyue Huang, Rongrong Ji
HIGHLIGHT: To this end, we propose a novel hard-label model stealing method termed black-box dissector, which consists of two erasing-based modules.

181, TITLE: Learning Energy-Based Models with Adversarial Training
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6532_ECCV_2022_paper.php
AUTHORS: Xuwang Yin, Shiying Li, Gustavo K. Rohde
HIGHLIGHT: We study a new approach to learning energy-based models (EBMs) based on adversarial training (AT).

182, TITLE: Adversarial Label Poisoning Attack on Graph Neural Networks via Label Propagation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6555_ECCV_2022_paper.php
AUTHORS: Ganlin Liu, Xiaowei Huang, Xinping Yi
HIGHLIGHT: Specifically, we propose a label poisoning attack framework for graph convolutional networks (GCNs), inspired by the equivalence between label propagation and decoupled GCNs that separate message passing from neural networks.

183, TITLE: Revisiting Outer Optimization in Adversarial Training
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7022_ECCV_2022_paper.php
AUTHORS: Ali Dabouei, Fariborz Taherkhani, Sobhan Soleymani, Nasser M. Nasrabadi
HIGHLIGHT: To this end, we propose an optimization method called ENGM which regularizes the contribution of each input example to the average mini-batch gradients.

184, TITLE: Zero-Shot Attribute Attacks on Fine-Grained Recognition Models
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7211_ECCV_2022_paper.php
AUTHORS: Nasim Shafiee, Ehsan Elhamifar
HIGHLIGHT: Such attacks, in particular, universal perturbations that are class-agnostic and ideally should generalize to unseen classes, however, cannot leverage or capture small distinctions among fine-grained classes. Therefore, we propose a compositional attribute-based framework for generating adversarial attacks on zero-shot fine-grained recognition models.

185, TITLE: Towards Effective and Robust Neural Trojan Defenses via Input Filtering
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7224_ECCV_2022_paper.php
AUTHORS: Kien Do, Haripriya Harikumar, Hung Le, Dung Nguyen, Truyen Tran, Santu Rana, Dang Nguyen, Willy Susilo, Svetha Venkatesh
HIGHLIGHT: Most defense methods still make out-of-date assumptions about Trojan triggers and target classes, thus, can be easily circumvented by modern Trojan attacks. To deal with this problem, we propose two novel filtering defenses called Variational Input Filtering (VIF) and Adversarial Input Filtering (AIF) which leverage lossy data compression and adversarial learning respectively to effectively purify all potential Trojan triggers in the input at run time without making assumptions about the number of triggers/target classes or the input dependence property of triggers.

186, TITLE: Scaling Adversarial Training to Large Perturbation Bounds
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7573_ECCV_2022_paper.php
AUTHORS: Sravanti Addepalli, Samyak Jain, Gaurang Sriramanan, R. Venkatesh Babu
HIGHLIGHT: In this work, we aim to achieve adversarial robustness within larger bounds, against perturbations that may be perceptible, but do not change human (or Oracle) prediction.

187, TITLE: Exploiting the Local Parabolic Landscapes of Adversarial Losses to Accelerate Black-Box Adversarial Attack
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7718_ECCV_2022_paper.php
AUTHORS: Hoang Tran, Dan Lu, Guannan Zhang
HIGHLIGHT: We propose to improve the query efficiency of black-box methods by exploiting the smoothness of the local loss landscape.

188, TITLE: Generative Domain Adaptation for Face Anti-Spoofing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/16_ECCV_2022_paper.php

AUTHORS:           Qianyu Zhou, Ke-Yue Zhang, Taiping Yao, Ran Yi, Kekai Sheng, Shouhong Ding, Lizhuang Ma
HIGHLIGHT:          However, insufficient supervision of unlabeled target domains and neglect of low-level feature alignment degrade the performances of existing methods. To address these issues, we propose a novel perspective of UDA FAS that directly fits the target data to the models, i.e., stylizes the target data to the source-domain style via image translation, and further feeds the stylized data into the well-trained source model for classification.

189, TITLE:           MetaGait: Learning to Learn an Omni Sample Adaptive Representation for Gait Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1202_ECCV_2022_paper.php
AUTHORS:           Huanzhang Dou, Pengyi Zhang, Wei Su, Yunlong Yu, Xi Li
HIGHLIGHT:          However, gait recognition still suffers from the conflicts between the limited binary visual clues of the silhouette and numerous covariates with diverse scales, which brings challenges to the model's adaptiveness. In this paper, we address this conflict by developing a novel MetaGait that learns to learn an omni sample adaptive representation.

190, TITLE:           GaitEdge: Beyond Plain End-to-End Gait Recognition for Better Practicality
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2463_ECCV_2022_paper.php
AUTHORS:           Junhao Liang, Chao Fan, Saihui Hou, Chuanfu Shen, Yongzhen Huang, Shiqi Yu
HIGHLIGHT:          In this work, we propose a novel end-to-end framework named GaitEdge which can effectively block gait-irrelevant information and release end-to-end training potential.

191, TITLE:           UIA-ViT: Unsupervised Inconsistency-Aware Method Based on Vision Transformer for Face Forgery Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6739_ECCV_2022_paper.php
AUTHORS:           Wanyi Zhuang, Qi Chu, Zhentao Tan, Qiankun Liu, Haojie Yuan, Changtao Miao, Zixiang Luo, Nenghai Yu
HIGHLIGHT:          Some existing methods generate large-scale synthesized data with location annotations, which is time-consuming. Others generate forgery location labels by subtracting paired real and fake images, yet such paired data is difficult to collected and the generated label is usually discontinuous. To overcome these limitations, we propose a novel Unsupervised Inconsistency-Aware method based on Vision Transformer, called UIA-ViT.

192, TITLE:           Effective Presentation Attack Detection Driven by Face Related Task
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7687_ECCV_2022_paper.php
AUTHORS:           Wentian Zhang, Haozhe Liu, Feng Liu, Raghavendra Ramachandra, Christoph Busch
HIGHLIGHT:          Unlike this specific PAD task, other face related tasks trained by huge amount of real faces (e.g. face recognition and attribute editing) can be effectively adopted into different application scenarios. Inspired by this, we propose to trade position of PAD and face related work in a face system and apply the free acquired prior knowledge from face related tasks to solve face PAD, so as to improve the generalization ability in detecting PAs.

193, TITLE:           PPT: Token-Pruned Pose Transformer for Monocular and Multi-View Human Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/46_ECCV_2022_paper.php
AUTHORS:           Haoyu Ma, Zhe Wang, Yifei Chen, Deying Kong, Liangjian Chen, Xingwei Liu, Xiangyi Yan, Hao Tang, Xiaohui Xie
HIGHLIGHT:          In this paper, we propose the token-Pruned Pose Transformer (PPT) for 2D human pose estimation, which can locate a rough human mask and performs self-attention only within selected tokens.

194, TITLE:           AvatarPoser: Articulated Full-Body Pose Tracking from Sparse Motion Sensing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/74_ECCV_2022_paper.php
AUTHORS:           Jiaxi Jiang, Paul Streli, Huajian Qiu, Andreas Fender, Larissa Laich, Patrick Snape, Christian Holz
HIGHLIGHT:          In this paper, we present AvatarPoser, the first learning-based method that predicts full-body poses in world coordinates using only motion input from the user's head and hands.

195, TITLE:           P-STMO: Pre-trained Spatial Temporal Many-to-One Model for 3D Human Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/196_ECCV_2022_paper.php
AUTHORS:           Wenkang Shan, Zhenhua Liu, Xinfeng Zhang, Shanshe Wang, Siwei Ma, Wen Gao
HIGHLIGHT:          This paper introduces a novel Pre-trained Spatial Temporal Many-to-One (P-STMO) model for 2D-to-3D human pose estimation task.

196, TITLE:           D\&ampD: Learning Human Dynamics from Dynamic Camera
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/229_ECCV_2022_paper.php
AUTHORS:           Jiefeng Li, Siyuan Bian, Chao Xu, Gang Liu, Gang Yu, Cewu Lu
HIGHLIGHT:          In this work, we present D&ampD (Learning Human Dynamics from Dynamic Camera), which leverages the laws of physics to reconstruct 3D human motion from the in-the-wild videos with a moving camera.

197, TITLE:           Explicit Occlusion Reasoning for Multi-Person 3D Human Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/615_ECCV_2022_paper.php
AUTHORS:           Qihao Liu, Yi Zhang, Song Bai, Alan Yuille
HIGHLIGHT:           Inspired by the remarkable ability of humans to infer occluded joints from visible cues, we develop a method to explicitly model this process that significantly improves bottom-up multi-person human pose estimation with or without occlusions.

198, TITLE:           COUCH: Towards Controllable Human-Chair Interactions
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/852_ECCV_2022_paper.php
AUTHORS:           Xiaohan Zhang, Bharat Lal Bhatnagar, Sebastian Starke, Vladimir Guzov, Gerard Pons-Moll

HIGHLIGHT: Existing works on synthesizing human scene interaction focus on the high-level control of interacting with a particular object without considering fine-grained control of limb motion variations within one task. In this work, we drive this direction and study the problem of synthesizing scene interactions conditioned on a wide range of contact positions on the object.

199, TITLE: Identity-Aware Hand Mesh Estimation and Personalization from RGB Images
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1076_ECCV_2022_paper.php
AUTHORS: Deying Kong, Linguang Zhang, Liangjian Chen, Haoyu Ma, Xiangyi Yan, Shanlin Sun, Xingwei Liu, Kun Han, Xiaohui Xie
HIGHLIGHT: In this paper, we propose an identity-aware hand mesh estimation model, which can incorporate the identity information represented by the intrinsic shape parameters of the subject.

200, TITLE: C3P: Cross-Domain Pose Prior Propagation for Weakly Supervised 3D Human Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1364_ECCV_2022_paper.php
AUTHORS: Cunlin Wu, Yang Xiao, Boshen Zhang, Mingyang Zhang, Zhiguo Cao, Joey Tianyi Zhou
HIGHLIGHT: To this end, we propose to transfer 2D HPE annotation information within the existing large-scale RGB datasets (e.g., MS COCO) to 3D task, using unlabelled RGB-point cloud sequence easy to acquire for linking 2D and 3D domains.

201, TITLE: Pose-NDF: Modeling Human Pose Manifolds with Neural Distance Fields
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1413_ECCV_2022_paper.php
AUTHORS: Garvita Tiwari, Dimitrije Anti?, Jan Eric Lenssen, Nikolaos Sarafianos, Tony Tung, Gerard Pons-Moll
HIGHLIGHT: We present Pose-NDF, a continuous model for plausible human poses based on neural distance fields (NDFs).

202, TITLE: CLIFF: Carrying Location Information in Full Frames into Human Pose and Shape Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1620_ECCV_2022_paper.php
AUTHORS: Zhihao Li, Jianzhuang Liu, Zhensong Zhang, Songcen Xu, Youliang Yan
HIGHLIGHT: However, cropping, their first step, discards the location information from the very beginning, which makes themselves unable to accurately predict the global rotation in the original camera coordinate system. To address this problem, we propose to Carry Location Information in Full Frames (CLIFF) into this task.

203, TITLE: DeciWatch: A Simple Baseline for 10&times Efficient 2D and 3D Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1845_ECCV_2022_paper.php
AUTHORS: Ailing Zeng, Xuan Ju, Lei Yang, Ruiyuan Gao, Xizhou Zhu, Bo Dai, Qiang Xu
HIGHLIGHT: This paper proposes a simple baseline framework for video-based 2D/3D human pose estimation that can achieve 10 times efficiency improvement over existing works without any performance degradation, named DeciWatch.

204, TITLE: SmoothNet: A Plug-and-Play Network for Refining Human Poses in Videos
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1848_ECCV_2022_paper.php
AUTHORS: Ailing Zeng, Lei Yang, Xuan Ju, Jiefeng Li, Jianyi Wang, Qiang Xu
HIGHLIGHT: In contrast, for rarely seen or occluded actions, the estimated positions of multiple joints largely deviate from the ground truth values for a consecutive sequence of frames, rendering significant jitters on them. To tackle this problem, we propose to attach a dedicated temporal-only refinement network to existing pose estimators for jitter mitigation, named SmoothNet.

205, TITLE: PoseTrans: A Simple yet Effective Pose Transformation Augmentation for Human Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2033_ECCV_2022_paper.php
AUTHORS: Wentao Jiang, Sheng Jin, Wentao Liu, Chen Qian, Ping Luo, Si Liu
HIGHLIGHT: In this paper, we present a simple yet effective data augmentation method, termed Pose Transformation (PoseTrans), to alleviate the aforementioned problems.

206, TITLE: Multi-Person 3D Pose and Shape Estimation via Inverse Kinematics and Refinement
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2418_ECCV_2022_paper.php
AUTHORS: Junuk Cha, Muhammad Saqlain, GeonU Kim, Mingyu Shin, Seungryul Baek
HIGHLIGHT: To tackle the challenges, we propose a coarse-to-fine pipeline that benefits from 1) inverse kinematics from the occlusion-robust 3D skeleton estimation and 2) transformer-based relation-aware refinement techniques.

207, TITLE: Overlooked Poses Actually Make Sense: Distilling Privileged Knowledge for Human Motion Prediction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3452_ECCV_2022_paper.php
AUTHORS: Xiaoning Sun, Qiongjie Cui, Huaijiang Sun, Bin Li, Weiqing Li, Jianfeng Lu
HIGHLIGHT: In this paper, we present a new prediction pattern, which introduces previously overlooked human poses, to implement the prediction task from the view of interpolation.

208, TITLE: Structural Triangulation: A Closed-Form Solution to Constrained 3D Human Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3470_ECCV_2022_paper.php
AUTHORS: Zhuo Chen, Xu Zhao, Xiaoyue Wan
HIGHLIGHT: We propose Structural Triangulation, a closed-form solution for optimal 3D human pose considering multi-view 2D pose estimations, calibrated camera parameters, and bone lengths.

209, TITLE: Audio-Driven Stylized Gesture Generation with Flow-Based Model
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3948_ECCV_2022_paper.php
AUTHORS: Sheng Ye, Yu-Hui Wen, Yanan Sun, Ying He, Ziyang Zhang, Yaoyuan Wang, Weihua He, Yong-Jin Liu

HIGHLIGHT: In this paper, we propose a new end-to-end flow-based model, which can generate audio-driven gestures of arbitrary styles without the preprocessing procedure and style labels.

210, TITLE: Self-Constrained Inference Optimization on Structural Groups for Human Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3985_ECCV_2022_paper.php
AUTHORS: Zhehan Kan, Shuoshuo Chen, Zeng Li, Zhihai He
HIGHLIGHT: In this work, we develop a self-constrained prediction-verification network to characterize and learn the structural correlation between keypoints during training.

211, TITLE: UnrealEgo: A New Dataset for Robust Egocentric 3D Human Motion Capture
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4021_ECCV_2022_paper.php
AUTHORS: Hiroyasu Akada, Jian Wang, Soshi Shimada, Masaki Takahashi, Christian Theobalt, Vladislav Golyanik
HIGHLIGHT: We present UnrealEgo, a new large-scale naturalistic dataset for egocentric 3D human pose estimation.We next generate a large corpus of human motions.

212, TITLE: Skeleton-Parted Graph Scattering Networks for 3D Human Motion Prediction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4239_ECCV_2022_paper.php
AUTHORS: Maosen Li, Siheng Chen, Zijing Zhang, Lingxi Xie, Qi Tian, Ya Zhang
HIGHLIGHT: To address the first issue, we propose adaptive graph scattering, which leverages multiple trainable band-pass graph filters to decompose pose features into various graph spectrum bands to provide richer information, promoting more comprehensive feature extraction. To address the second issue, body parts are modeled separately to learn diverse dynamics, which enables finer feature extraction along the spatial dimensions. Integrating the above two designs, we propose a novel skeleton-parted graph scattering network (SPGSN).

213, TITLE: Rethinking Keypoint Representations: Modeling Keypoints and Poses as Objects for Multi-Person Human Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4439_ECCV_2022_paper.php
AUTHORS: William McNally, Kanav Vats, Alexander Wong, John McPhee
HIGHLIGHT: Motivated to find a more efficient solution, we propose to model individual keypoints and sets of spatially related keypoints (i.e., poses) as objects within a dense single-stage anchor-based detection framework.

214, TITLE: VirtualPose: Learning Generalizable 3D Human Pose Models from Virtual Data
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4551_ECCV_2022_paper.php
AUTHORS: Jiajun Su, Chunyu Wang, Xiaoxuan Ma, Wenjun Zeng, Yizhou Wang
HIGHLIGHT: In this work, we perform a systematic evaluation of the existing methods and find that they get notably larger errors when tested on different cameras, human poses and appearance. To address the problem, we introduce VirtualPose, a two-stage learning framework to exploit the hidden free lunch specific to this task, i.e. generating infinite number of poses and cameras for training models at no cost.

215, TITLE: Poseur: Direct Human Pose Regression with Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4552_ECCV_2022_paper.php
AUTHORS: Weian Mao, Yongtao Ge, Chunhua Shen, Zhi Tian, Xinlong Wang, Zhibin Wang, Anton van den Hengel
HIGHLIGHT: We propose a direct, regression-based approach to 2D human pose estimation from single images.

216, TITLE: SimCC: A Simple Coordinate Classification Perspective for Human Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4591_ECCV_2022_paper.php
AUTHORS: Yanjie Li, Sen Yang, Peidong Liu, Shoukui Zhang, Yunxiao Wang, Zhicheng Wang, Wankou Yang, Shu-Tao Xia
HIGHLIGHT: However, the long-standing quantization error problem in the 2D heatmap-based methods leads to several well-known drawbacks: 1) The performance for the low-resolution inputs is limited 2) To improve the feature map resolution for higher localization precision, multiple costly upsampling layers are required 3) Extra post-processing is adopted to reduce the quantization error. To address these issues, we aim to explore a brand new scheme, called SimCC, which reformulates HPE as two classification tasks for horizontal and vertical coordinates.

217, TITLE: Regularizing Vector Embedding in Bottom-Up Human Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4631_ECCV_2022_paper.php
AUTHORS: Haixin Wang, Lu Zhou, Yingying Chen, Ming Tang, Jinqiao Wang
HIGHLIGHT: We observe that the different dimensions of embeddings are highly linearly correlated. To address this issue, we impose an additional constraint on the embeddings during training phase.

218, TITLE: A Visual Navigation Perspective for Category-Level Object Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4677_ECCV_2022_paper.php
AUTHORS: Jiaxin Guo, Fangxun Zhong, Rong Xiong, Yun-Hui Liu, Yue Wang, Yiyi Liao
HIGHLIGHT: However, convergence and efficiency are two challenges of this inference procedure. In this paper, we take a deeper look at the inference of analysis-by-synthesis from the perspective of visual navigation, and investigate what is a good navigation policy for this specific task.

219, TITLE: Faster VoxelPose: Real-Time 3D Human Pose Estimation by Orthographic Projection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4748_ECCV_2022_paper.php
AUTHORS: Hang Ye, Wentao Zhu, Chunyu Wang, Rujie Wu, Yizhou Wang

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HIGHLIGHT: While the voxel-based methods have achieved promising results for multi-person 3D pose estimation from multi-cameras, they suffer from heavy computation burdens, especially for large scenes. We present Faster VoxelPose to address the challenge by re-projecting the feature volume to the three two-dimensional coordinate planes and estimating X, Y, Z coordinates from them separately.

220, TITLE: Learning to Fit Morphable Models
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4927_ECCV_2022_paper.php
AUTHORS: Vasileios Choutas, Federica Bogo, Jingjing Shen, Julien Valentin
HIGHLIGHT: In this work, we build upon recent advances in learned optimization and propose an update rule inspired by the classic Levenberg-Marquardt algorithm.

221, TITLE: EgoBody: Human Body Shape and Motion of Interacting People from Head-Mounted Devices
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4963_ECCV_2022_paper.php
AUTHORS: Siwei Zhang, Qianli Ma, Yan Zhang, Zhiyin Qian, Taein Kwon, Marc Pollefeys, Federica Bogo, Siyu Tang
HIGHLIGHT: Existing datasets are limited in terms of either size, capture/annotation modalities, ground-truth quality, or interaction diversity. We fill this gap by proposing EgoBody, a novel large-scale dataset for human pose, shape and motion estimation from egocentric views, during interactions in complex 3D scenes.

222, TITLE: Grasp'D: Differentiable Contact-Rich Grasp Synthesis for Multi-Fingered Hands
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5242_ECCV_2022_paper.php
AUTHORS: Dylan Turpin, Liquan Wang, Eric Heiden, Yun-Chun Chen, Miles Macklin, Stavros Tsogkas, Sven Dickinson, Animesh Garg
HIGHLIGHT: This paper presents Grasp'D, an approach to grasp synthesis by differentiable contact simulation that can work with both known models and visual inputs.

223, TITLE: AutoAvatar: Autoregressive Neural Fields for Dynamic Avatar Modeling
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5388_ECCV_2022_paper.php
AUTHORS: Ziqian Bai, Timur Bagautdinov, Javier Romero, Michael Zollh&ouml,fer, Ping Tan, Shunsuke Saito
HIGHLIGHT: Neural fields such as implicit surfaces have recently enabled avatar modeling from raw scans without explicit temporal correspondences. In this work, we exploit autoregressive modeling to further extend this notion to capture dynamic effects, such as soft-tissue deformations.

224, TITLE: Deep Radial Embedding for Visual Sequence Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5670_ECCV_2022_paper.php
AUTHORS: Yuecong Min, Peiqi Jiao, Yanan Li, Xiaotao Wang, Lei Lei, Xiujuan Chai, Xilin Chen
HIGHLIGHT: In this study, we propose an objective function named RadialCTC that constrains sequence features on a hypersphere while retaining the iterative alignment mechanism of CTC.

225, TITLE: SAGA: Stochastic Whole-Body Grasping with Contact
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5754_ECCV_2022_paper.php
AUTHORS: Yan Wu, Jiahao Wang, Yan Zhang, Siwei Zhang, Otmar Hilliges, Fisher Yu, Siyu Tang
HIGHLIGHT: Specifically, we propose a multi-task generative model, to jointly learn static whole-body grasping poses and human-object contacts.

226, TITLE: Neural Capture of Animatable 3D Human from Monocular Video
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5908_ECCV_2022_paper.php
AUTHORS: Gusi Te, Xiu Li, Xiao Li, Jinglu Wang, Wei Hu, Yan Lu
HIGHLIGHT: We present a novel paradigm of building an animatable 3D human representation from a monocular video input, such that it can be rendered in any unseen poses and views.

227, TITLE: General Object Pose Transformation Network from Unpaired Data
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5972_ECCV_2022_paper.php
AUTHORS: Yukun Su, Guosheng Lin, Ruizhou Sun, Qingyao Wu
HIGHLIGHT: In this paper, we address a problem of novel general object pose transformation from unpaired data.

228, TITLE: Compositional Human-Scene Interaction Synthesis with Semantic Control
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6216_ECCV_2022_paper.php
AUTHORS: Kaifeng Zhao, Shaofei Wang, Yan Zhang, Thabo Beeler, Siyu Tang
HIGHLIGHT: Our goal is to synthesize humans interacting with a given 3D scene controlled by high-level semantic specifications as pairs of action categories and object instances, e.g., "sit on the chair".

229, TITLE: PressureVision: Estimating Hand Pressure from a Single RGB Image
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6515_ECCV_2022_paper.php
AUTHORS: Patrick Grady, Chengcheng Tang, Samarth Brahmbhatt, Christopher D. Twigg, Chengde Wan, James Hays, Charles C. Kemp
HIGHLIGHT: We explore the possibility of using a conventional RGB camera to infer hand pressure, enabling machine perception of hand pressure from uninstrumented hands and surfaces.

230, TITLE: PoseScript: 3D Human Poses from Natural Language
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6526_ECCV_2022_paper.php

AUTHORS: Ginger Delmas, Philippe Weinzaepfel, Thomas Lucas, Francesc Moreno-Noguer, Gr&eacute,gory Rogez
HIGHLIGHT: In this work, we introduce the PoseScript dataset, which pairs a few thousand 3D human poses from AMASS with rich human-annotated descriptions of the body parts and their spatial relationships.

231, TITLE: DProST: Dynamic Projective Spatial Transformer Network for 6D Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6565_ECCV_2022_paper.php
AUTHORS: Jaewoo Park, Nam Ik Cho
HIGHLIGHT: However, projective geometry in the camera space is not considered in those methods and causes performance degradation. In this regard, we propose a new pose estimation system based on a projective grid instead of object vertices.

232, TITLE: 3D Interacting Hand Pose Estimation by Hand De-Occlusion and Removal
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6671_ECCV_2022_paper.php
AUTHORS: Hao Meng, Sheng Jin, Wentao Liu, Chen Qian, Mengxiang Lin, Wanli Ouyang, Ping Luo
HIGHLIGHT: To tackle these two challenges, we propose a novel Hand De-occlusion and Removal (HDR) framework to perform hand de-occlusion and distractor removal.We also propose the first large-scale synthetic amodal hand dataset, termed Amodal InterHand Dataset (AIH), to facilitate model training and promote the development of the related research.

233, TITLE: Pose for Everything: Towards Category-Agnostic Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6672_ECCV_2022_paper.php
AUTHORS: Lumin Xu, Sheng Jin, Wang Zeng, Wentao Liu, Chen Qian, Wanli Ouyang, Ping Luo, Xiaogang Wang
HIGHLIGHT: In this paper, we introduce the task of Category-Agnostic Pose Estimation (CAPE), which aims to create a pose estimation model capable of detecting the pose of any class of object given only a few samples with keypoint definition.

234, TITLE: PoseGPT: Quantization-Based 3D Human Motion Generation and Forecasting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6693_ECCV_2022_paper.php
AUTHORS: Thomas Lucas, Fabien Baradel, Philippe Weinzaepfel, Gr&eacute,gory Rogez
HIGHLIGHT: In contrast, we generate motion conditioned on observations of arbitrary length, including none. To solve this generalized problem, we propose PoseGPT, an auto-regressive transformer-based approach which internally compresses human motion into quantized latent sequences.

235, TITLE: DH-AUG: DH Forward Kinematics Model Driven Augmentation for 3D Human Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7764_ECCV_2022_paper.php
AUTHORS: Linzhi Huang, Jiahao Liang, Weihong Deng
HIGHLIGHT: Due to the lack of diversity of datasets, the generalization ability of the pose estimator is poor. To solve this problem, we propose a pose augmentation solution via DH forward kinematics model, which we call DH-AUG.

236, TITLE: Estimating Spatially-Varying Lighting in Urban Scenes with Disentangled Representation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/162_ECCV_2022_paper.php
AUTHORS: Jiajun Tang, Yongjie Zhu, Haoyu Wang, Jun Hoong Chan, Si Li, Boxin Shi
HIGHLIGHT: We present an end-to-end network for spatially-varying outdoor lighting estimation in urban scenes given a single limited field-of-view LDR image and any assigned 2D pixel position.

237, TITLE: Boosting Event Stream Super-Resolution with a Recurrent Neural Network
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/248_ECCV_2022_paper.php
AUTHORS: Wenming Weng, Yueyi Zhang, Zhiwei Xiong
HIGHLIGHT: Existing methods for event stream super-resolution (SR) either require high-quality and high-resolution frames or underperform for large factor SR. To address these problems, we propose a recurrent neural network for event SR without frames.

238, TITLE: Projective Parallel Single-Pixel Imaging to Overcome Global Illumination in 3D Structure Light Scanning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/702_ECCV_2022_paper.php
AUTHORS: Yuxi Li, Huijie Zhao, Hongzhi Jiang, Xudong Li
HIGHLIGHT: We present projective parallel single-pixel imaging (pPSI), wherein the 4D LTCs are reduced to multiple projection functions to facilitate a highly efficient data capture process.

239, TITLE: Semantic-Sparse Colorization Network for Deep Exemplar-Based Colorization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/820_ECCV_2022_paper.php
AUTHORS: Yunpeng Bai, Chao Dong, Zenghao Chai, Andong Wang, Zhengzhuo Xu, Chun Yuan
HIGHLIGHT: Previous approaches have attempted to construct such a correspondence but are faced with two obstacles. First, using luminance channels for the calculation of correspondence is inaccurate. Second, the dense correspondence they built introduces wrong matching results and increases the computation burden. To address these two problems, we propose Semantic-Sparse Colorization Network (SSCN) to transfer both the global image style and detailed semantic-related colors to the gray-scale image in a coarse-to-fine manner.

240, TITLE: Practical and Scalable Desktop-Based High-Quality Facial Capture
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1083_ECCV_2022_paper.php
AUTHORS: Alexandros Lattas, Yiming Lin, Jayanth Kannan, Ekin Ozturk, Luca Filipi, Giuseppe Claudio Guarnera, Gaurav Chawla, Abhijeet Ghosh
HIGHLIGHT: We present a novel desktop-based system for high-quality facial capture including geometry and facial appearance.We additionally present a novel set of binary illumination patterns for efficient acquisition of reflectance and photometric normals using our setup, with diffuse-specular separation.

241, TITLE:　　　　FAST-VQA: Efficient End-to-End Video Quality Assessment with Fragment Sampling
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1225_ECCV_2022_paper.php
AUTHORS:　　　　Haoning Wu, Chaofeng Chen, Jingwen Hou, Liang Liao, Annan Wang, Wenxiu Sun, Qiong Yan, Weisi Lin
HIGHLIGHT:　　　　In this paper, we propose Grid Mini-patch Sampling (GMS), which allows consideration of local quality by sampling patches at their raw resolution and covers global quality with contextual relations via mini-patches sampled in uniform grids.

242, TITLE:　　　　Physically-Based Editing of Indoor Scene Lighting from a Single Image
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1276_ECCV_2022_paper.php
AUTHORS:　　　　Zhengqin Li, Jia Shi, Sai Bi, Rui Zhu, Kalyan Sunkavalli, Miloš Hašan, Zexiang Xu, Ravi Ramamoorthi, Manmohan Chandraker
HIGHLIGHT:　　　　We present a method to edit complex indoor lighting from a single image with its predicted depth and light source segmentation masks.

243, TITLE:　　　　LEDNet: Joint Low-Light Enhancement and Deblurring in the Dark
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1331_ECCV_2022_paper.php
AUTHORS:　　　　Shangchen Zhou, Chongyi Li, Chen Change Loy
HIGHLIGHT:　　　　Training an end-to-end network is also infeasible as no paired data is available to characterize the coexistence of low light and blurs. We address the problem by introducing a novel data synthesis pipeline that models realistic low-light blurring degradations, especially for blurs in saturated regions, e.g., light streaks, that often appear in the night images.

244, TITLE:　　　　MPIB: An MPI-Based Bokeh Rendering Framework for Realistic Partial Occlusion Effects
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1759_ECCV_2022_paper.php
AUTHORS:　　　　Juewen Peng, Jianming Zhang, Xianrui Luo, Hao Lu, Ke Xian, Zhiguo Cao
HIGHLIGHT:　　　　Based on this analysis, we propose an MPI representation module combined with a background inpainting module to implement high-resolution scene representation.

245, TITLE:　　　　Real-RawVSR: Real-World Raw Video Super-Resolution with a Benchmark Dataset
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1804_ECCV_2022_paper.php
AUTHORS:　　　　Huanjing Yue, Zhiming Zhang, Jingyu Yang
HIGHLIGHT:　　　　Considering the superiority of raw image SR over sRGB image SR, we construct a real-world raw video SR (Real-RawVSR) dataset and propose a corresponding SR method.

246, TITLE:　　　　Transform Your Smartphone into a DSLR Camera: Learning the ISP in the Wild
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2134_ECCV_2022_paper.php
AUTHORS:　　　　Ardhendu Shekhar Tripathi, Martin Danelljan, Samarth Shukla, Radu Timofte, Luc Van Gool
HIGHLIGHT:　　　　We propose a trainable Image Signal Processing (ISP) framework that produces DSLR quality images given RAW images captured by a smartphone.

247, TITLE:　　　　Learning Deep Non-Blind Image Deconvolution without Ground Truths
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2222_ECCV_2022_paper.php
AUTHORS:　　　　Yuhui Quan, Zhuojie Chen, Huan Zheng, Hui Ji
HIGHLIGHT:　　　　This paper proposes an unsupervised deep learning approach for NBID which avoids accessing GT images.

248, TITLE:　　　　NEST: Neural Event Stack for Event-Based Image Enhancement
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2730_ECCV_2022_paper.php
AUTHORS:　　　　Minggui Teng, Chu Zhou, Hanyue Lou, Boxin Shi
HIGHLIGHT:　　　　This paper presents a novel event representation named Neural Event STack (NEST), which satisfies physical constraints and encodes comprehensive motion and temporal information sufficient for image enhancement.

249, TITLE:　　　　Editable Indoor Lighting Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2772_ECCV_2022_paper.php
AUTHORS:　　　　Henrique Weber, Mathieu Garon, Jean-Fran&ccedil,ois Lalonde
HIGHLIGHT:　　　　We present a method for estimating lighting from a single perspective image of an indoor scene.

250, TITLE:　　　　Fast Two-Step Blind Optical Aberration Correction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2877_ECCV_2022_paper.php
AUTHORS:　　　　Thomas Eboli, Jean-Michel Morel, Gabriele Facciolo
HIGHLIGHT:　　　　In this paper, we propose a two-step scheme to correct optical aberrations in a single raw or JPEG image, i.e., without any prior information on the camera or lens.

251, TITLE:　　　　Seeing Far in the Dark with Patterned Flash
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2891_ECCV_2022_paper.php
AUTHORS:　　　　Zhanghao Sun, Jian Wang, Yicheng Wu, Shree Nayar
HIGHLIGHT:　　　　We propose a new flash technique, named "patterned flash", for flash imaging at a long distance.

252, TITLE:　　　　PseudoClick: Interactive Image Segmentation with Click Imitation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2903_ECCV_2022_paper.php
AUTHORS:　　　　Qin Liu, Meng Zheng, Benjamin Planche, Srikrishna Karanam, Terrence Chen, Marc Niethammer, Ziyan Wu

HIGHLIGHT: To this end, we propose PseudoClick, a generic framework that enables existing segmentation networks to propose candidate next clicks.

253, TITLE: CT$^2$: Colorization Transformer via Color Tokens
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3007_ECCV_2022_paper.php
AUTHORS: Shuchen Weng, Jimeng Sun, Yu Li, Si Li, Boxin Shi
HIGHLIGHT: Automatic image colorization is an ill-posed problem with multi-modal uncertainty, and there remains two main challenges with previous methods: incorrect semantic colors and under-saturation. In this paper, we propose an end-to-end transformer-based model to overcome these challenges.

254, TITLE: Simple Baselines for Image Restoration
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3043_ECCV_2022_paper.php
AUTHORS: Liangyu Chen, Xiaojie Chu, Xiangyu Zhang, Jian Sun
HIGHLIGHT: In this paper, we propose a simple baseline that exceeds the SOTA methods and is computationally efficient.

255, TITLE: Spike Transformer: Monocular Depth Estimation for Spiking Camera
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3125_ECCV_2022_paper.php
AUTHORS: Jiyuan Zhang, Lulu Tang, Zhaofei Yu, Jiwen Lu, Tiejun Huang
HIGHLIGHT: In this paper, we focus on the depth estimation task, which is challenging due to the natural properties of spike streams, such as irregularity, continuity, and spatial-temporal correlation, and has not been explored for the spiking camera.Furthermore, we build two spike-based depth datasets.

256, TITLE: Improving Image Restoration by Revisiting Global Information Aggregation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3129_ECCV_2022_paper.php
AUTHORS: Xiaojie Chu, Liangyu Chen, Chengpeng Chen, Xin Lu
HIGHLIGHT: To reduce the inconsistency and improve test-time performance, we propose a simple method called Test-time Local Converter (TLC).

257, TITLE: Data Association between Event Streams and Intensity Frames under Diverse Baselines
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3265_ECCV_2022_paper.php
AUTHORS: Dehao Zhang, Qiankun Ding, Peiqi Duan, Chu Zhou, Boxin Shi
HIGHLIGHT: This paper proposes a learning-based framework to associate event streams and intensity frames under diverse camera baselines, to simultaneously benefit to camera pose estimation under large baseline and depth estimation under small baseline.

258, TITLE: D2HNet: Joint Denoising and Deblurring with Hierarchical Network for Robust Night Image Restoration
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3512_ECCV_2022_paper.php
AUTHORS: Yuzhi Zhao, Yongzhe Xu, Qiong Yan, Dingdong Yang, Xuehui Wang, Lai-Man Po
HIGHLIGHT: To exploit the information from successive long- and short-exposure images, we propose a learning-based pipeline to fuse them.

259, TITLE: Learning Graph Neural Networks for Image Style Transfer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3643_ECCV_2022_paper.php
AUTHORS: Yongcheng Jing, Yining Mao, Yiding Yang, Yibing Zhan, Mingli Song, Xinchao Wang, Dacheng Tao
HIGHLIGHT: In this paper, we study a novel semi-parametric neural style transfer framework that alleviates the deficiency of both parametric and non-parametric stylization.

260, TITLE: DeepPS2: Revisiting Photometric Stereo Using Two Differently Illuminated Images
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3966_ECCV_2022_paper.php
AUTHORS: Ashish Tiwari, Shanmuganathan Raman
HIGHLIGHT: In this work, we attempt to address an under-explored problem of photometric stereo using just two differently illuminated images, referred to as the PS2 problem.

261, TITLE: Instance Contour Adjustment via Structure-Driven CNN
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4084_ECCV_2022_paper.php
AUTHORS: Shuchen Weng, Yi Wei, Ming-Ching Chang, Boxin Shi
HIGHLIGHT: Due to the ignorance of these requirements, the off-the-shelf image editing methods herein are unsuited. Therefore, we propose a specialized two-stage method.

262, TITLE: Synthesizing Light Field Video from Monocular Video
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4122_ECCV_2022_paper.php
AUTHORS: Shrisudhan Govindarajan, Prasan Shedligeri, Sarah, Kaushik Mitra
HIGHLIGHT: Hence, we propose a self-supervised learning-based algorithm for LF video reconstruction from monocular videos.

263, TITLE: Human-Centric Image Cropping with Partition-Aware and Content-Preserving Features
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4249_ECCV_2022_paper.php
AUTHORS: Bo Zhang, Li Niu, Xing Zhao, Liqing Zhang
HIGHLIGHT: In this paper, we consider a specific and practical application: human-centric image cropping, which focuses on the depiction of a person.

264, TITLE: DeMFI: Deep Joint Deblurring and Multi-Frame Interpolation with Flow-Guided Attentive Correlation and Recursive Boosting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4406_ECCV_2022_paper.php
AUTHORS: Jihyong Oh, Munchurl Kim
HIGHLIGHT: We propose a novel joint deblurring and multi-frame interpolation (DeMFI) framework in a two-stage manner, called DeMFINet, which converts blurry videos of lower-frame-rate to sharp videos at higher-frame-rate based on flow-guided attentive-correlation-based feature bolstering (FAC-FB) module and recursive boosting (RB), in terms of multi-frame interpolation (MFI).

265, TITLE: Neural Image Representations for Multi-Image Fusion and Layer Separation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4471_ECCV_2022_paper.php
AUTHORS: Seonghyeon Nam, Marcus A. Brubaker, Michael S. Brown
HIGHLIGHT: We propose a framework for aligning and fusing multiple images into a single view using neural image representations (NIRs), also known as implicit or coordinate-based neural representations.

266, TITLE: Bringing Rolling Shutter Images Alive with Dual Reversed Distortion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4547_ECCV_2022_paper.php
AUTHORS: Zhihang Zhong, Mingdeng Cao, Xiao Sun, Zhirong Wu, Zhongyi Zhou, Yinqiang Zheng, Stephen Lin, Imari Sato
HIGHLIGHT: However, since RS distortion is coupled with other factors such as readout settings and the relative velocity of scene elements to the camera, models that only exploit the geometric correlation between temporally adjacent images suffer from poor generality in processing data with different readout settings and dynamic scenes with both camera motion and object motion. In this paper, instead of two consecutive frames, we propose to exploit a pair of images captured by dual RS cameras with reversed RS directions for this highly challenging task.

267, TITLE: FILM: Frame Interpolation for Large Motion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4614_ECCV_2022_paper.php
AUTHORS: Fitsum Reda, Janne Kontkanen, Eric Tabellion, Deqing Sun, Caroline Pantofaru, Brian Curless
HIGHLIGHT: We present a frame interpolation algorithm that synthesizes an engaging slow-motion video from near-duplicate photos which often exhibit large scene motion.

268, TITLE: Video Interpolation by Event-Driven Anisotropic Adjustment of Optical Flow
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4754_ECCV_2022_paper.php
AUTHORS: Song Wu, Kaichao You, Weihua He, Chen Yang, Yang Tian, Yaoyuan Wang, Ziyang Zhang, Jianxing Liao
HIGHLIGHT: In this paper, we propose an end-to-end training method A^2OF for video frame interpolation with event-driven Anisotropic Adjustment of Optical Flows.

269, TITLE: EvAC3D: From Event-Based Apparent Contours to 3D Models via Continuous Visual Hulls
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5100_ECCV_2022_paper.php
AUTHORS: Ziyun Wang, Kenneth Chaney, Kostas Daniilidis
HIGHLIGHT: In this paper, we study the problem of 3D reconstruction from event-cameras, motivated by the advantages of event-based cameras in terms of low power and latency as well as by the biological evidence that eyes in nature capture the same data and still perceive well 3D shape.

270, TITLE: DCCF: Deep Comprehensible Color Filter Learning Framework for High-Resolution Image Harmonization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5142_ECCV_2022_paper.php
AUTHORS: Ben Xue, Shenghui Ran, Quan Chen, Rongfei Jia, Binqiang Zhao, Xing Tang
HIGHLIGHT: In this paper, we propose a novel Deep Comprehensible Color Filter (DCCF) learning framework for high-resolution image harmonization.

271, TITLE: SelectionConv: Convolutional Neural Networks for Non-Rectilinear Image Data
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5224_ECCV_2022_paper.php
AUTHORS: David Hart, Michael Whitney, Bryan Morse
HIGHLIGHT: Such data are usually processed using networks and algorithms specialized for each type. In this work, we show that it may not always be necessary to use specialized neural networks to operate on such spaces.

272, TITLE: Spatial-Separated Curve Rendering Network for Efficient and High-Resolution Image Harmonization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5481_ECCV_2022_paper.php
AUTHORS: Jingtang Liang, Xiaodong Cun, Chi-Man Pun, Jue Wang
HIGHLIGHT: However, the model size and computational cost limit the ability of their models on edge devices and higher-resolution images. In this paper, we propose a spatial-separated curve rendering network (S2CRNet), a novel framework to prove that the simple global editing can effectively address this task as well as the challenge of high-resolution image harmonization for the first time.

273, TITLE: BigColor: Colorization Using a Generative Color Prior for Natural Images
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5898_ECCV_2022_paper.php
AUTHORS: Geonung Kim, Kyoungkook Kang, Seongtae Kim, Hwayoon Lee, Sehoon Kim, Jonghyun Kim, Seung-Hwan Baek, Sunghyun Cho
HIGHLIGHT: In this paper, we propose BigColor, a novel colorization approach that provides vivid colorization for diverse in-the-wild images with complex structures.

274, TITLE: CADyQ: Content-Aware Dynamic Quantization for Image Super-Resolution
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5937_ECCV_2022_paper.php
AUTHORS: Cheeun Hong, Sungyong Baik, Heewon Kim, Seungjun Nah, Kyoung Mu Lee
HIGHLIGHT: In this work, to achieve high average bit-reduction with less accuracy loss, we propose a novel Content-Aware Dynamic Quantization (CADyQ) method for SR networks that allocates optimal bits to local regions and layers adaptively based on the local contents of an input image.

275, TITLE: Deep Semantic Statistics Matching (D2SM) Denoising Network
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6145_ECCV_2022_paper.php
AUTHORS: Kangfu Mei, Vishal M. Patel, Rui Huang
HIGHLIGHT: In this paper, we introduce the Deep Semantic Statistics Matching (D2SM) Denoising Network.

276, TITLE: 3D Scene Inference from Transient Histograms
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6177_ECCV_2022_paper.php
AUTHORS: Sacha Jungerman, Atul Ingle, Yin Li, Mohit Gupta
HIGHLIGHT: We propose low-cost and low-power imaging modalities that capture scene information from minimal time-resolved image sensors with as few as one pixel.

277, TITLE: Neural Space-Filling Curves
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6187_ECCV_2022_paper.php
AUTHORS: Hanyu Wang, Kamal Gupta, Larry Davis, Abhinav Shrivastava
HIGHLIGHT: We present Neural Space-filling Curves (SFCs), a data-driven approach to infer a context-based scan order for a set of images.

278, TITLE: Exposure-Aware Dynamic Weighted Learning for Single-Shot HDR Imaging
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6250_ECCV_2022_paper.php
AUTHORS: An Gia Vien, Chul Lee
HIGHLIGHT: We propose a novel single-shot high dynamic range (HDR) imaging algorithm based on exposure-aware dynamic weighted learning, which reconstructs an HDR image from a spatially varying exposure (SVE) raw image.

279, TITLE: Seeing through a Black Box: Toward High-Quality Terahertz Imaging via Subspace-and-Attention Guided Restoration
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6259_ECCV_2022_paper.php
AUTHORS: Weng-Tai Su, Yi-Chun Hung, Po-Jen Yu, Shang-Hua Yang, Chia-Wen Lin
HIGHLIGHT: To address the problem, we propose a novel Subspace-and-Attention-guided Restoration Network (SARNet) that fuses multi-spectral features of a THz image for effective restoration.

280, TITLE: Tomography of Turbulence Strength Based on Scintillation Imaging
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6324_ECCV_2022_paper.php
AUTHORS: Nir Shaul, Yoav Y. Schechner
HIGHLIGHT: As far as we know, this work is the first to propose reconstruction of a TS horizontal field, using passive optical scintillation measurements.

281, TITLE: Realistic Blur Synthesis for Learning Image Deblurring
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6325_ECCV_2022_paper.php
AUTHORS: Jaesung Rim, Geonung Kim, Jungeon Kim, Junyong Lee, Seungyong Lee, Sunghyun Cho
HIGHLIGHT: To this end, we present RSBlur, a novel dataset with real blurred images and the corresponding sharp image sequences to enable a detailed analysis of the difference between real and synthetic blur.

282, TITLE: Learning Phase Mask for Privacy-Preserving Passive Depth Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7139_ECCV_2022_paper.php
AUTHORS: Zaid Tasneem, Giovanni Milione, Yi-Hsuan Tsai, Xiang Yu, Ashok Veeraraghavan, Manmohan Chandraker, Francesco Pittaluga
HIGHLIGHT: The key question we address is: Can cameras be enhanced with a scalable solution to preserve users' privacy without degrading their machine intelligence capabilities?

283, TITLE: LWGNet – Learned Wirtinger Gradients for Fourier Ptychographic Phase Retrieval
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7691_ECCV_2022_paper.php
AUTHORS: Atreyee Saha, Salman S. Khan, Sagar Sehrawat, Sanjana S. Prabhu, Shanti Bhattacharya, Kaushik Mitra
HIGHLIGHT: We propose a hybrid model-driven residual network that combines the knowledge of the forward imaging system with a deep data-driven network.

284, TITLE: PANDORA: Polarization-Aided Neural Decomposition of Radiance
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/8029_ECCV_2022_paper.php
AUTHORS: Akshat Dave, Yongyi Zhao, Ashok Veeraraghavan
HIGHLIGHT: We propose PANDORA, a polarimetric inverse rendering approach based on implicit neural representations.

285, TITLE: HuMMan: Multi-modal 4D Human Dataset for Versatile Sensing and Modeling
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/185_ECCV_2022_paper.php

AUTHORS: Zhongang Cai, Daxuan Ren, Ailing Zeng, Zhengyu Lin, Tao Yu, Wenjia Wang, Xiangyu Fan, Yang Gao, Yifan Yu, Liang Pan, Fangzhou Hong, Mingyuan Zhang, Chen Change Loy, Lei Yang, Ziwei Liu
HIGHLIGHT: In this work, we contribute HuMMan, a large-scale multi-modal 4D human dataset with 1000 human subjects, 400k sequences and 60M frames.

286, TITLE: DVS-Voltmeter: Stochastic Process-Based Event Simulator for Dynamic Vision Sensors
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/267_ECCV_2022_paper.php
AUTHORS: Songnan Lin, Ye Ma, Zhenhua Guo, Bihan Wen
HIGHLIGHT: We propose an event simulator, dubbed DVS-Voltmeter, to enable high-performance deep networks for DVS applications.

287, TITLE: Benchmarking Omni-Vision Representation through the Lens of Visual Realms
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/287_ECCV_2022_paper.php
AUTHORS: Yuanhan Zhang, Zhenfei Yin, Jing Shao, Ziwei Liu
HIGHLIGHT: In this paper, we propose Omni-Realm Benchmark (OmniBenchmark) that enables systematically measuring the generalization ability across a wide range of visual realms.

288, TITLE: BEAT: A Large-Scale Semantic and Emotional Multi-modal Dataset for Conversational Gestures Synthesis
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/296_ECCV_2022_paper.php
AUTHORS: Haiyang Liu, Zihao Zhu, Naoya Iwamoto, Yichen Peng, Zhengqing Li, You Zhou, Elif Bozkurt, Bo Zheng
HIGHLIGHT: Based on this observation, we propose a baseline model, Cascaded Motion Network (CaMN), which consists of above six modalities modeled in a cascaded architecture for gesture synthesis.

289, TITLE: Neuromorphic Data Augmentation for Training Spiking Neural Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/601_ECCV_2022_paper.php
AUTHORS: Yuhang Li, Youngeun Kim, Hyoungseob Park, Tamar Geller, Priyadarshini Panda
HIGHLIGHT: This issue remains unexplored by previous academic works. In an effort to minimize this generalization gap, we propose Neuromorphic Data Augmentation (NDA), a family of geometric augmentations specifically designed for event-based datasets with the goal of significantly stabilizing the SNN training and reducing the generalization gap between training and test performance.

290, TITLE: CelebV-HQ: A Large-Scale Video Facial Attributes Dataset
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/709_ECCV_2022_paper.php
AUTHORS: Hao Zhu, Wayne Wu, Wentao Zhu, Liming Jiang, Siwei Tang, Li Zhang, Ziwei Liu, Chen Change Loy
HIGHLIGHT: In this paper, we propose a large-scale, high-quality, and diverse video dataset, named the High-Quality Celebrity Video Dataset (CelebV-HQ), with rich facial attribute annotations.

291, TITLE: MovieCuts: A New Dataset and Benchmark for Cut Type Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/859_ECCV_2022_paper.php
AUTHORS: Alejandro Pardo, Fabian Caba, Juan León Alcázar, Ali Thabet, Bernard Ghanem
HIGHLIGHT: This paper introduces the Cut type recognition task, which requires modeling multi-modal information.

292, TITLE: LaMAR: Benchmarking Localization and Mapping for Augmented Reality
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/930_ECCV_2022_paper.php
AUTHORS: Paul-Edouard Sarlin, Mihai Dusmanu, Johannes L. Schönberger, Pablo Speciale, Lukas Gruber, Viktor Larsson, Ondrej Miksik, Marc Pollefeys
HIGHLIGHT: Furthermore, ground-truth (GT) accuracy is mostly insufficient to satisfy AR requirements. To close this gap, we introduce a new benchmark with a comprehensive capture and GT pipeline, which allow us to co-register realistic AR trajectories in diverse scenes and from heterogeneous devices at scale.

293, TITLE: Unitail: Detecting, Reading, and Matching in Retail Scene
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1259_ECCV_2022_paper.php
AUTHORS: Fangyi Chen, Han Zhang, Zaiwang Li, Jiachen Dou, Shentong Mo, Hao Chen, Yongxin Zhang, Uzair Ahmed, Chenchen Zhu, Marios Savvides
HIGHLIGHT: To make full use of computer vision technology in stores, it is required to consider the actual needs that fit the characteristics of the retail scene. Pursuing this goal, we introduce the United Retail Datasets (Unitail), a large-scale benchmark of basic visual tasks on products that challenges algorithms for detecting, reading, and matching.

294, TITLE: Not Just Streaks: Towards Ground Truth for Single Image Deraining
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1506_ECCV_2022_paper.php
AUTHORS: Yunhao Ba, Howard Zhang, Ethan Yang, Akira Suzuki, Arnold Pfahnl, Chethan Chinder Chandrappa, Celso M. de Melo, Suya You, Stefano Soatto, Alex Wong, Achuta Kadambi
HIGHLIGHT: We propose a large-scale dataset of real-world rainy and clean image pairs and a method to remove degradations, induced by rain streaks and rain accumulation, from the image.

295, TITLE: ECCV Caption: Correcting False Negatives by Collecting Machine-and-Human-Verified Image-Caption Associations for MS-COCO
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1625_ECCV_2022_paper.php
AUTHORS: Sanghyuk Chun, Wonjae Kim, Song Park, Minsuk Chang, Seong Joon Oh

HIGHLIGHT: To correct the massive false negatives, we construct the Extended COCO Validation (ECCV) Caption dataset by supplying the missing associations with machine and human annotators.

296, TITLE: MOTCOM: The Multi-Object Tracking Dataset Complexity Metric
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1959_ECCV_2022_paper.php
AUTHORS: Malte Pedersen, Joakim Bruslund Haurum, Patrick Dendorfer, Thomas B. Moeslund
HIGHLIGHT: As a remedy, we present the novel MOT dataset complexity metric (MOTCOM), which is a combination of three sub-metrics inspired by key problems in MOT: occlusion, erratic motion, and visual similarity.

297, TITLE: How to Synthesize a Large-Scale and Trainable Micro-Expression Dataset?
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2280_ECCV_2022_paper.php
AUTHORS: Yuchi Liu, Zhongdao Wang, Tom Gedeon, Liang Zheng
HIGHLIGHT: This paper does not contain technical novelty but introduces our key discoveries in a data generation protocol, a database and insights.

298, TITLE: A Real World Dataset for Multi-View 3D Reconstruction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2610_ECCV_2022_paper.php
AUTHORS: Rakesh Shrestha, Siqi Hu, Minghao Gou, Ziyuan Liu, Ping Tan
HIGHLIGHT: We present a dataset of 371 3D models of everyday tabletop objects along with their 320,000 real world RGB and depth images.

299, TITLE: REALY: Rethinking the Evaluation of 3D Face Reconstruction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2804_ECCV_2022_paper.php
AUTHORS: Zenghao Chai, Haoxian Zhang, Jing Ren, Di Kang, Zhengzhuo Xu, Xuefei Zhe, Chun Yuan, Linchao Bao
HIGHLIGHT: In this paper, we propose a novel evaluation approach with a new benchmark REALY, consists of 100 globally aligned face scans with accurate facial keypoints, high-quality region masks, and topology-consistent meshes.

300, TITLE: Capturing, Reconstructing, and Simulating: The UrbanScene3D Dataset
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3218_ECCV_2022_paper.php
AUTHORS: Liqiang Lin, Yilin Liu, Yue Hu, Xingguang Yan, Ke Xie, Hui Huang
HIGHLIGHT: We present UrbanScene3D, a large-scale data platform for research of urban scene perception and reconstruction.

301, TITLE: 3D CoMPaT: Composition of Materials on Parts of 3D Things
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3631_ECCV_2022_paper.php
AUTHORS: Yuchen Li, Ujjwal Upadhyay, Habib Slim, Tezuesh Varshney, Ahmed Abdelreheem, Arpit Prajapati, Suhail Pothigara, Peter Wonka, Mohamed Elhoseiny
HIGHLIGHT: We present 3D CoMPaT, a richly annotated large-scale dataset of more than 7.19 million rendered compositions of Materials on Parts of 7262 unique 3D Models 990 compositions per model on average.

302, TITLE: PartImageNet: A Large, High-Quality Dataset of Parts
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3719_ECCV_2022_paper.php
AUTHORS: Ju He, Shuo Yang, Shaokang Yang, Adam Kortylewski, Xiaoding Yuan, Jie-Neng Chen, Shuai Liu, Cheng Yang, Qihang Yu, Alan Yuille
HIGHLIGHT: This is partly due to the difficulty and high cost of annotating object parts so it has rarely been done except for humans (where there exists a big literature on part-based models). To help address this problem, we propose PartImageNet, a large, high-quality dataset with part segmentation annotations.

303, TITLE: A-OKVQA: A Benchmark for Visual Question Answering Using World Knowledge
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4117_ECCV_2022_paper.php
AUTHORS: Dustin Schwenk, Apoorv Khandelwal, Christopher Clark, Kenneth Marino, Roozbeh Mottaghi
HIGHLIGHT: We introduce A-OKVQA, a crowdsourced dataset composed of a diverse set of about 25K questions requiring a broad base of commonsense and world knowledge to answer.

304, TITLE: OOD-CV: A Benchmark for Robustness to Out-of-Distribution Shifts of Individual Nuisances in Natural Images
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4514_ECCV_2022_paper.php
AUTHORS: Bingchen Zhao, Shaozuo Yu, Wufei Ma, Mingxin Yu, Shenxiao Mei, Angtian Wang, Ju He, Alan Yuille, Adam Kortylewski
HIGHLIGHT: We introduce ROBIN, a benchmark dataset that includes out-of-distribution examples of 10 object categories in terms of pose, shape, texture, context and the weather conditions, and enables benchmarking models for image classification, object detection, and 3D pose estimation.

305, TITLE: Facial Depth and Normal Estimation Using Single Dual-Pixel Camera
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4619_ECCV_2022_paper.php
AUTHORS: Minjun Kang, Jaesung Choe, Hyowon Ha, Hae-Gon Jeon, Sunghoon Im, In So Kweon, Kuk-Jin Yoon
HIGHLIGHT: In this paper, we introduce a DP-oriented Depth/Normal estimation network that reconstructs the 3D facial geometry.In addition, to train the network, we collect DP facial data with more than 135K images for 101 persons captured with our multi-camera structured light systems.

306, TITLE:        The Anatomy of Video Editing: A Dataset and Benchmark Suite for AI-Assisted Video Editing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4736_ECCV_2022_paper.php
AUTHORS:        Dawit Mureja Argaw, Fabian Caba, Joon-Young Lee, Markus Woodson, In So Kweon
HIGHLIGHT:        This work introduces the Anatomy of Video Editing, a dataset, and benchmark, to foster research in AI-assisted video editing.

307, TITLE:        StyleBabel: Artistic Style Tagging and Captioning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4976_ECCV_2022_paper.php
AUTHORS:        Dan Ruta, Andrew Gilbert, Pranav Aggarwal, Naveen Marri, Ajinkya Kale, Jo Briggs, Chris Speed, Hailin Jin, Baldo Faieta, Alex Filipkowski, Zhe Lin, John Collomosse
HIGHLIGHT:        We present StyleBabel, a unique open access dataset of natural language captions and free-form tags describing the artistic style of over 135K digital artworks, collected via a novel participatory method from experts studying at specialist art and design schools.

308, TITLE:        PANDORA: A Panoramic Detection Dataset for Object with Orientation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5026_ECCV_2022_paper.php
AUTHORS:        Hang Xu, Qiang Zhao, Yike Ma, Xiaodong Li, Peng Yuan, Bailan Feng, Chenggang Yan, Feng Dai
HIGHLIGHT:        This paper proposes a new bounding box representation, Rotated Bounding Field of View (RBFoV), for the panoramic image object detection task.Then, based on the RBFoV, we present a PANoramic Detection dataset for Object with oRientAtion (PANDORA).

309, TITLE:        FS-COCO: Towards Understanding of Freehand Sketches of Common Objects in Context
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5251_ECCV_2022_paper.php
AUTHORS:        Pinaki Nath Chowdhury, Aneeshan Sain, Ayan Kumar Bhunia, Tao Xiang, Yulia Gryaditskaya, Yi-Zhe Song
HIGHLIGHT:        Namely, we propose a hierarchical sketch decoder, which we leverage at a sketch-specific "pretext" task.We will release the dataset upon acceptance.

310, TITLE:        Exploring Fine-Grained Audiovisual Categorization with the SSW60 Dataset
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5265_ECCV_2022_paper.php
AUTHORS:        Grant Van Horn, Rui Qian, Kimberly Wilber, Hartwig Adam, Oisin Mac Aodha, Serge Belongie
HIGHLIGHT:        We present a new benchmark dataset, Sapsucker Woods 60 (SSW60), for advancing research on audiovisual fine-grained categorization.

311, TITLE:        The Caltech Fish Counting Dataset: A Benchmark for Multiple-Object Tracking and Counting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5272_ECCV_2022_paper.php
AUTHORS:        Justin Kay, Peter Kulits, Suzanne Stathatos, Siqi Deng, Erik Young, Sara Beery, Grant Van Horn, Pietro Perona
HIGHLIGHT:        We present the Caltech Fish Counting Dataset (CFC), a large-scale dataset for detecting, tracking, and counting fish in sonar videos.

312, TITLE:        A Dataset for Interactive Vision-Language Navigation with Unknown Command Feasibility
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5327_ECCV_2022_paper.php
AUTHORS:        Andrea Burns, Deniz Arsan, Sanjna Agrawal, Ranjitha Kumar, Kate Saenko, Bryan A. Plummer
HIGHLIGHT:        To study VLN with unknown command feasibility, we introduce a new dataset Mobile app Tasks with Iterative Feedback (MoTIF), where the goal is to complete a natural language command in a mobile app.

313, TITLE:        BRACE: The Breakdancing Competition Dataset for Dance Motion Synthesis
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5564_ECCV_2022_paper.php
AUTHORS:        Davide Moltisanti, Jinyi Wu, Bo Dai, Chen Change Loy
HIGHLIGHT:        These characteristics are found in all existing datasets for dance motion synthesis, and indeed recent methods can achieve good results. We introduce a new dataset aiming to challenge these common assumptions, compiling a set of dynamic dance sequences displaying complex human poses.

314, TITLE:        Dress Code: High-Resolution Multi-Category Virtual Try-On
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5660_ECCV_2022_paper.php
AUTHORS:        Davide Morelli, Matteo Fincato, Marcella Cornia, Federico Landi, Fabio Cesari, Rita Cucchiara
HIGHLIGHT:        This shortcoming arises from a main factor: current publicly available datasets for image-based virtual try-on do not account for this variety, thus limiting progress in the field. To address this deficiency, we introduce Dress Code, which contains images of multi-category clothes.

315, TITLE:        A Data-Centric Approach for Improving Ambiguous Labels with Combined Semi-Supervised Classification and Clustering
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5740_ECCV_2022_paper.php
AUTHORS:        Lars Schmarje, Monty Santarossa, Simon-Martin Schröder, Claudius Zelenka, Rainer Kiko, Jenny Stracke, Nina Volkmann, Reinhard Koch
HIGHLIGHT:        Subjective annotations by annotators often lead to ambiguous labels in real-world datasets. We propose a data-centric approach to relabel such ambiguous labels instead of implementing the handling of this issue in a neural network.

316, TITLE:        ClearPose: Large-Scale Transparent Object Dataset and Benchmark
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5905_ECCV_2022_paper.php
AUTHORS:        Xiaotong Chen, Huijie Zhang, Zeren Yu, Anthony Opipari, Odest Chadwicke Jenkins

HIGHLIGHT:          In this work, we contribute a large-scale real-world RGB-Depth transparent object dataset named ClearPose to serve as a benchmark dataset for segmentation, scene-level depth completion, and object-centric pose estimation tasks.

317, TITLE:          When Deep Classifiers Agree: Analyzing Correlations between Learning Order and Image Statistics
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6000_ECCV_2022_paper.php
AUTHORS:          Iuliia Pliushch, Martin Mundt, Nicolas Lupp, Visvanathan Ramesh
HIGHLIGHT:          It has been hypothesized that neural networks converge not only to similar representations, but also exhibit a notion of empirical agreement on which data instances are learned first. Following in the latter works' footsteps, we define a metric to quantify the relationship between such classification agreement over time, and posit that the agreement phenomenon can be mapped to core statistics of the investigated dataset.

318, TITLE:          AnimeCeleb: Large-Scale Animation CelebHeads Dataset for Head Reenactment
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6068_ECCV_2022_paper.php
AUTHORS:          Kangyeol Kim, Sunghyun Park, Jaeseong Lee, Sunghyo Chung, Junsoo Lee, Jaegul Choo
HIGHLIGHT:          We present a novel Animation CelebHeads dataset (AnimeCeleb) to address an animation head reenactment.

319, TITLE:          MUGEN: A Playground for Video-Audio-Text Multimodal Understanding and GENeration
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6199_ECCV_2022_paper.php
AUTHORS:          Thomas Hayes, Songyang Zhang, Xi Yin, Guan Pang, Sasha Sheng, Harry Yang, Songwei Ge, Qiyuan Hu, Devi Parikh
HIGHLIGHT:          To this end, we present a large-scale video-audio-text dataset MUGEN, collected using the open-sourced platform game CoinRun.

320, TITLE:          A Dense Material Segmentation Dataset for Indoor and Outdoor Scene Parsing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6243_ECCV_2022_paper.php
AUTHORS:          Paul Upchurch, Ransen Niu
HIGHLIGHT:          A key algorithm for understanding the world is material segmentation, which assigns a label (metal, glass, etc.) to each pixel. We find that a model trained on existing data underperforms in some settings and propose to address this with a large-scale dataset of 3.2 million dense segments on 44,560 indoor and outdoor images, which is 23x more segments than existing data.

321, TITLE:          MimicME: A Large Scale Diverse 4D Database for Facial Expression Analysis
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6439_ECCV_2022_paper.php
AUTHORS:          Athanasios Papaioannou, Baris Gecer, Shiyang Cheng, Grigorios G. Chrysos, Jiankang Deng, Eftychia Fotiadou, Christos Kampouris, Dimitrios Kollias, Stylianos Moschoglou, Kritaphat Songsri-In, Stylianos Ploumpis, George Trigeorgis, Panagiotis Tzirakis, Evangelos Ververas, Yuxiang Zhou, Allan Ponniah, Anastasios Roussos, Stefanos Zafeiriou
HIGHLIGHT:          This lack of large datasets hinders the exploitation of the great advances that DNNs can provide. In this paper, we overcome these limitations by introducing MimicMe, a novel large-scale database of dynamic high-resolution 3D faces.

322, TITLE:          Delving into Universal Lesion Segmentation: Method, Dataset, and Benchmark
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6472_ECCV_2022_paper.php
AUTHORS:          Yu Qiu, Jing Xu
HIGHLIGHT:          Considering that it is easy to encode CT slices owing to the limited CT scenarios, we propose a Knowledge Embedding Module (KEM) to adapt the concept of dictionary learning for this task.

323, TITLE:          Large Scale Real-World Multi-person Tracking
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6479_ECCV_2022_paper.php
AUTHORS:          Bing Shuai, Alessandro Bergamo, Uta B&uuml,chler, Andrew Berneshawi, Alyssa Boden, Joseph Tighe
HIGHLIGHT:          This paper presents a new large scale multi-person tracking dataset.

324, TITLE:          D2-TPred: Discontinuous Dependency for Trajectory Prediction under Traffic Lights
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6862_ECCV_2022_paper.php
AUTHORS:          Yuzhen Zhang, Wentong Wang, Weizhi Guo, Pei Lv, Mingliang Xu, Wei Chen, Dinesh Manocha
HIGHLIGHT:          We present a trajectory prediction approach with respect to traffic lights, D2-TPred, which uses a spatial dynamic interaction graph (SDG) and a behavior dependency graph (BDG) to handle the problem of discontinuous dependency in the spatial-temporal space.

325, TITLE:          The Missing Link: Finding Label Relations across Datasets
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7043_ECCV_2022_paper.php
AUTHORS:          Jasper Uijlings, Thomas Mensink, Vittorio Ferrari
HIGHLIGHT:          In this paper we explore the automatic discovery of visual-semantic relations between labels across datasets.

326, TITLE:          Learning Omnidirectional Flow in 360&deg Video via Siamese Representation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7090_ECCV_2022_paper.php
AUTHORS:          Keshav Bhandari, Bin Duan, Gaowen Liu, Hugo Latapie, Ziliang Zong, Yan Yan
HIGHLIGHT:          To accommodate the omnidirectional nature, we present a novel Siamese representation Learning framework for Omnidirectional Flow (SLOF).

327, TITLE:          VizWiz-FewShot: Locating Objects in Images Taken by People with Visual Impairments
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7450_ECCV_2022_paper.php
AUTHORS:          Yu-Yun Tseng, Alexander Bell, Danna Gurari

HIGHLIGHT: We introduce a few-shot localization dataset originating from photographers who authentically were trying to learn about the visual content in the images they took.

328, TITLE: TRoVE: Transforming Road Scene Datasets into Photorealistic Virtual Environments
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7561_ECCV_2022_paper.php
AUTHORS: Shubham Dokania, Anbumani Subramanian, Manmohan Chandraker, C.V. Jawahar
HIGHLIGHT: This work proposes a synthetic data generation pipeline that utilizes existing datasets, like nuScenes, to address the difficulties and domain-gaps present in simulated datasets.

329, TITLE: Trapped in Texture Bias? A Large Scale Comparison of Deep Instance Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7815_ECCV_2022_paper.php
AUTHORS: Johannes Theodoridis, Jessica Hofmann, Johannes Maucher, Andreas Schilling
HIGHLIGHT: In this study, we aim to understand if certain design decisions such as framework, architecture or pre-training contribute to the semantic understanding of instance segmentation.

330, TITLE: Deformable Feature Aggregation for Dynamic Multi-modal 3D Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/132_ECCV_2022_paper.php
AUTHORS: Zehui Chen, Zhenyu Li, Shiquan Zhang, Liangji Fang, Qinhong Jiang, Feng Zhao
HIGHLIGHT: To this end, we propose AutoAlignV2, a faster and stronger multi-modal 3D detection framework, built on top of AutoAlign.

331, TITLE: WeLSA: Learning to Predict 6D Pose from Weakly Labeled Data Using Shape Alignment
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/184_ECCV_2022_paper.php
AUTHORS: Shishir Reddy Vutukur, Ivan Shugurov, Benjamin Busam, Andreas Hutter, Slobodan Ilic
HIGHLIGHT: We propose a weakly-supervised approach for object pose estimation from RGB-D data using training sets composed of very few labeled images with pose annotations along with weakly-labeled images with ground truth segmentation masks without pose labels.

332, TITLE: Graph R-CNN: Towards Accurate 3D Object Detection with Semantic-Decorated Local Graph
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/193_ECCV_2022_paper.php
AUTHORS: Honghui Yang, Zili Liu, Xiaopei Wu, Wenxiao Wang, Wei Qian, Xiaofei He, Deng Cai
HIGHLIGHT: We propose the patch search to quickly search points in a local region for each 3D proposal.

333, TITLE: MPPNet: Multi-Frame Feature Intertwining with Proxy Points for 3D Temporal Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/368_ECCV_2022_paper.php
AUTHORS: Xuesong Chen, Shaoshuai Shi, Benjin Zhu, Ka Chun Cheung, Hang Xu, Hongsheng Li
HIGHLIGHT: In this paper, we present a flexible and high-performance 3D detection frame-work, named MPPNet, for 3D temporal object detection with point cloud sequences.

334, TITLE: Long-Tail Detection with Effective Class-Margins
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/640_ECCV_2022_paper.php
AUTHORS: Jang Hyun Cho, Philipp Kr&auml,henb&uuml,hl
HIGHLIGHT: In this paper, we provide a theoretical understanding of the long-trail detection problem.

335, TITLE: Semi-Supervised Monocular 3D Object Detection by Multi-View Consistency
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/654_ECCV_2022_paper.php
AUTHORS: Qing Lian, Yanbo Xu, Weilong Yao, Yingcong Chen, Tong Zhang
HIGHLIGHT: To alleviate the annotation effort, we propose MVC-MonoDet, the first semi-supervised training framework that improves Monocular 3D object detection by enforcing multi-view consistency.

336, TITLE: PTSEFormer: Progressive Temporal-Spatial Enhanced TransFormer towards Video Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/690_ECCV_2022_paper.php
AUTHORS: Han Wang, Jun Tang, Xiaodong Liu, Shanyan Guan, Rong Xie, Li Song
HIGHLIGHT: To address the issues, we perform a progressive way to introduce both temporal information and spatial information for an integrated enhancement.

337, TITLE: BEVFormer: Learning Bird's-Eye-View Representation from Multi-Camera Images via Spatiotemporal Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/694_ECCV_2022_paper.php
AUTHORS: Zhiqi Li, Wenhai Wang, Hongyang Li, Enze Xie, Chonghao Sima, Tong Lu, Yu Qiao, Jifeng Dai
HIGHLIGHT: In this work, we present a new framework termed BEVFormer, which learns unified BEV representations with spatiotemporal transformers to support multiple autonomous driving perception tasks.

338, TITLE: Category-Level 6D Object Pose and Size Estimation Using Self-Supervised Deep Prior Deformation Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/919_ECCV_2022_paper.php
AUTHORS: Jiehong Lin, Zewei Wei, Changxing Ding, Kui Jia
HIGHLIGHT: However, the easy annotations in synthetic domains bring the downside effect of synthetic-to-real (Sim2Real) domain gap. In this work, we aim to address this issue in the task setting of Sim2Real, unsupervised domain adaptation for category-level 6D object pose and size estimation.

339, TITLE: Dense Teacher: Dense Pseudo-Labels for Semi-Supervised Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/961_ECCV_2022_paper.php
AUTHORS: Hongyu Zhou, Zheng Ge, Songtao Liu, Weixin Mao, Zeming Li, Haiyan Yu, Jian Sun
HIGHLIGHT: In this work, we propose replacing the sparse pseudo-boxes with the dense prediction as a united and straightforward form of pseudo-label.

340, TITLE: Point-to-Box Network for Accurate Object Detection via Single Point Supervision
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/986_ECCV_2022_paper.php
AUTHORS: Pengfei Chen, Xuehui Yu, Xumeng Han, Najmul Hassan, Kai Wang, Jiachen Li, Jian Zhao, Humphrey Shi, Zhenjun Han, Qixiang Ye
HIGHLIGHT: However, the performance gap between point supervised object detection (PSOD) and bounding box supervised detection remains large. In this paper, we attribute such a large performance gap to the failure of generating high-quality proposal bags which are crucial for multiple instance learning (MIL).

341, TITLE: Domain Adaptive Hand Keypoint and Pixel Localization in the Wild
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1100_ECCV_2022_paper.php
AUTHORS: Takehiko Ohkawa, Yu-Jhe Li, Qichen Fu, Ryosuke Furuta, Kris M. Kitani, Yoichi Sato
HIGHLIGHT: In this paper, we propose to utilize the divergence of two predictions to estimate the confidence of the target image for both tasks.

342, TITLE: Towards Data-Efficient Detection Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1174_ECCV_2022_paper.php
AUTHORS: Wen Wang, Jing Zhang, Yang Cao, Yongliang Shen, Dacheng Tao
HIGHLIGHT: In other words, the detection transformers are generally data-hungry. To tackle this problem, we empirically analyze the factors that affect data efficiency, through a step-by-step transition from a data-efficient RCNN variant to the representative DETR.

343, TITLE: Open-Vocabulary DETR with Conditional Matching
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1248_ECCV_2022_paper.php
AUTHORS: Yuhang Zang, Wei Li, Kaiyang Zhou, Chen Huang, Chen Change Loy
HIGHLIGHT: To this end, we propose a novel open-vocabulary detector based on DETR---hence the name OV-DETR---which, once trained, can detect any object given its class name or an exemplar image.

344, TITLE: Prediction-Guided Distillation for Dense Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1356_ECCV_2022_paper.php
AUTHORS: Chenhongyi Yang, Mateusz Ochal, Amos Storkey, Elliot J. Crowley
HIGHLIGHT: In this work, we show that only a very small fraction of features within a ground-truth bounding box are responsible for a teacher's high detection performance.

345, TITLE: Multimodal Object Detection via Probabilistic Ensembling
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1448_ECCV_2022_paper.php
AUTHORS: Yi-Ting Chen, Jinghao Shi, Zelin Ye, Christoph Mertz, Deva Ramanan, Shu Kong
HIGHLIGHT: Our key contribution is a probabilistic ensembling technique, ProbEn, a simple non-learned method that fuses together detections from multi-modalities.

346, TITLE: Exploiting Unlabeled Data with Vision and Language Models for Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1474_ECCV_2022_paper.php
AUTHORS: Shiyu Zhao, Zhixing Zhang, Samuel Schulter, Long Zhao, Vijay Kumar B G, Anastasis Stathopoulos, Manmohan Chandraker, Dimitris N. Metaxas
HIGHLIGHT: We propose a novel method that leverages the rich semantics available in recent vision and language models to localize and classify objects in unlabeled images, effectively generating pseudo labels for object detection.

347, TITLE: CPO: Change Robust Panorama to Point Cloud Localization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1567_ECCV_2022_paper.php
AUTHORS: Junho Kim, Hojun Jang, Changwoon Choi, Young Min Kim
HIGHLIGHT: We present CPO, a fast and robust algorithm that localizes a 2D panorama with respect to a 3D point cloud of a scene possibly containing changes.

348, TITLE: INT: Towards Infinite-Frames 3D Detection with an Efficient Framework
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1751_ECCV_2022_paper.php
AUTHORS: Jianyun Xu, Zhenwei Miao, Da Zhang, Hongyu Pan, Kaixuan Liu, Peihan Hao, Jun Zhu, Zhengyang Sun, Hongmin Li, Xin Zhan
HIGHLIGHT: Although increasing the number of frames might improve performance, previous multi-frame studies only used very limited frames to build their systems due to the dramatically increased computational and memory cost. To address these issues, we propose a novel on-stream training and prediction framework that, in theory, can employ an infinite number of frames while keeping the same amount of computation as a single-frame detector.

349, TITLE: End-to-End Weakly Supervised Object Detection with Sparse Proposal Evolution
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1852_ECCV_2022_paper.php

AUTHORS: Mingxiang Liao, Fang Wan, Yuan Yao, Zhenjun Han, Jialing Zou, Yuze Wang, Bailan Feng, Peng Yuan, Qixiang Ye
HIGHLIGHT: In this study, we propose a sparse proposal evolution (SPE) approach, which advances WSOD from the two-stage pipeline with dense proposals to an end-to-end framework with sparse proposals.

350, TITLE: Calibration-Free Multi-View Crowd Counting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1929_ECCV_2022_paper.php
AUTHORS: Qi Zhang, Antoni B. Chan
HIGHLIGHT: To extend and apply MVCC to more practical situations, in this paper we propose calibration-free multi-view crowd counting (CF-MVCC), which obtains the scene-level count directly from the density map predictions for each camera view without needing the camera calibrations in the test.

351, TITLE: Unsupervised Domain Adaptation for Monocular 3D Object Detection via Self-Training
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1930_ECCV_2022_paper.php
AUTHORS: Zhenyu Li, Zehui Chen, Ang Li, Liangji Fang, Qinhong Jiang, Xianming Liu, Junjun Jiang
HIGHLIGHT: To mitigate the depth-shift, we introduce the geometry-aligned multi-scale training strategy to disentangle the camera parameters and guarantee the geometry consistency of domains.

352, TITLE: SuperLine3D: Self-Supervised Line Segmentation and Description for LiDAR Point Cloud
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2025_ECCV_2022_paper.php
AUTHORS: Xiangrui Zhao, Sheng Yang, Tianxin Huang, Jun Chen, Teng Ma, Mingyang Li, Yong Liu
HIGHLIGHT: Poles and building edges are frequently observable objects on urban roads, conveying reliable hints for various computer vision tasks. To repetitively extract them as features and perform association between discrete LiDAR frames for registration, we propose the first learning-based feature segmentation and description model for 3D lines in LiDAR point cloud.

353, TITLE: Exploring Plain Vision Transformer Backbones for Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2151_ECCV_2022_paper.php
AUTHORS: Yanghao Li, Hanzi Mao, Ross Girshick, Kaiming He
HIGHLIGHT: We explore the plain, non-hierarchical Vision Transformer (ViT) as a backbone network for object detection.

354, TITLE: Adversarially-Aware Robust Object Detector
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2179_ECCV_2022_paper.php
AUTHORS: Ziyi Dong, Pengxu Wei, Liang Lin
HIGHLIGHT: In this work, we empirically explore the model training for adversarial robustness in object detection, which greatly attributes to the conflict between learning clean images and adversarial images.

355, TITLE: HEAD: HEtero-Assists Distillation for Heterogeneous Object Detectors
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2285_ECCV_2022_paper.php
AUTHORS: Luting Wang, Xiaojie Li, Yue Liao, Zeren Jiang, Jianlong Wu, Fei Wang, Chen Qian, Si Liu
HIGHLIGHT: Conventional homogeneous KD (homo-KD) methods suffer from such a gap and are hard to directly obtain satisfactory performance for hetero-KD. In this paper, we propose the HEtero-Assists Distillation (HEAD) framework, leveraging heterogeneous detection heads as assistants to guide the optimization of the student detector to reduce this gap.

356, TITLE: You Should Look at All Objects
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2379_ECCV_2022_paper.php
AUTHORS: Zhenchao Jin, Dongdong Yu, Luchuan Song, Zehuan Yuan, Lequan Yu
HIGHLIGHT: To this end, this paper first revisits FPN in the detection framework and reveals the nature of the success of FPN from the perspective of optimization. Then, we point out that the degraded performance of large-scale objects is due to the arising of improper back-propagation paths after integrating FPN.

357, TITLE: Detecting Twenty-Thousand Classes Using Image-Level Supervision
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2557_ECCV_2022_paper.php
AUTHORS: Xingyi Zhou, Rohit Girdhar, Armand Joulin, Philipp Kr&auml;henb&uuml;hl, Ishan Misra
HIGHLIGHT: We propose Detic, which simply trains the classifiers of a detector on image classification data and thus expands the vocabulary of detectors to tens of thousands of concepts.

358, TITLE: DCL-Net: Deep Correspondence Learning Network for 6D Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2558_ECCV_2022_paper.php
AUTHORS: Hongyang Li, Jiehong Lin, Kui Jia
HIGHLIGHT: However, surrogate objectives of correspondence learning in 3D space are a step away from the true ones of object pose estimation, making the learning suboptimal for the end task. In this paper, we address this shortcoming by introducing a new method of Deep Correspondence Learning Network for direct 6D object pose estimation, shortened as DCL-Net.

359, TITLE: Monocular 3D Object Detection with Depth from Motion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2691_ECCV_2022_paper.php
AUTHORS: Tai Wang, Jiangmiao Pang, Dahua Lin
HIGHLIGHT: Motivated by binocular methods for 3D object detection, we take advantage of the strong geometry structure provided by camera ego-motion for accurate object depth estimation and detection.

360, TITLE: DISP6D: Disentangled Implicit Shape and Pose Learning for Scalable 6D Pose Estimation

http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2707_ECCV_2022_paper.php
AUTHORS:     Yilin Wen, Xiangyu Li, Hao Pan, Lei Yang, Zheng Wang, Taku Komura, Wenping Wang
HIGHLIGHT:     Building on a well-known auto-encoding framework to cope with object symmetry and the lack of labeled training data, we achieve scalability by disentangling the latent representation of auto-encoder into shape and pose sub-spaces.

361, TITLE:     Distilling Object Detectors with Global Knowledge
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2717_ECCV_2022_paper.php
AUTHORS:     Sanli Tang, Zhongyu Zhang, Zhanzhan Cheng, Jing Lu, Yunlu Xu, Yi Niu, Fan He
HIGHLIGHT:     To this end, a novel prototype generation module (PGM) is proposed to find the common basis vectors, dubbed prototypes, in the two feature spaces. Then, a robust distilling module (RDM) is applied to construct the global knowledge based on the prototypes and filtrate noisy global and local knowledge by measuring the discrepancy of the representations in two feature spaces.

362, TITLE:     Unifying Visual Perception by Dispersible Points Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2746_ECCV_2022_paper.php
AUTHORS:     Jianming Liang, Guanglu Song, Biao Leng, Yu Liu
HIGHLIGHT:     We present a conceptually simple, flexible, and universal visual perception head for variant visual tasks, e.g., classification, object detection, instance segmentation and pose estimation, and different frameworks, such as one-stage or two-stage pipelines.

363, TITLE:     PseCo: Pseudo Labeling and Consistency Training for Semi-Supervised Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2783_ECCV_2022_paper.php
AUTHORS:     Gang Li, Xiang Li, Yujie Wang, Yichao Wu, Ding Liang, Shanshan Zhang
HIGHLIGHT:     In this paper, we delve into two key techniques in Semi-Supervised Object Detection (SSOD), namely pseudo labeling and consistency training.

364, TITLE:     Exploring Resolution and Degradation Clues As Self-Supervised Signal for Low Quality Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2829_ECCV_2022_paper.php
AUTHORS:     Ziteng Cui, Yingying Zhu, Lin Gu, Guo-Jun Qi, Xiaoxiao Li, Renrui Zhang, Zenghui Zhang, Tatsuya Harada
HIGHLIGHT:     Here, we propose anovel self-supervised framework to detect objects in degraded low res-olution images.

365, TITLE:     Robust Category-Level 6D Pose Estimation with Coarse-to-Fine Rendering of Neural Features
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2856_ECCV_2022_paper.php
AUTHORS:     Wufei Ma, Angtian Wang, Alan Yuille, Adam Kortylewski
HIGHLIGHT:     Instead, we introduce a coarse-to-fine optimization strategy that utilizes the rendering process to estimate a sparse set of 6D object proposals, which are subsequently refined with gradient-based optimization.

366, TITLE:     Translation, Scale and Rotation: Cross-Modal Alignment Meets RGB-Infrared Vehicle Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3041_ECCV_2022_paper.php
AUTHORS:     Maoxun Yuan, Yinyan Wang, Xingxing Wei
HIGHLIGHT:     In this paper, we mainly address the challenge of cross-modal weakly misalignment in aerial RGB-IR images.

367, TITLE:     RFLA: Gaussian Receptive Field Based Label Assignment for Tiny Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3138_ECCV_2022_paper.php
AUTHORS:     Chang Xu, Jinwang Wang, Wen Yang, Huai Yu, Lei Yu, Gui-Song Xia
HIGHLIGHT:     In this paper, we point out that either box prior in the anchor-based detector or point prior in the anchor-free detector is sub-optimal for tiny objects.

368, TITLE:     Rethinking IoU-Based Optimization for Single-Stage 3D Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3295_ECCV_2022_paper.php
AUTHORS:     Hualian Sheng, Sijia Cai, Na Zhao, Bing Deng, Jianqiang Huang, Xian-Sheng Hua, Min-Jian Zhao, Gim Hee Lee
HIGHLIGHT:     In this paper, we propose a novel Rotation-Decoupled IoU (RDIoU) method that can mitigate the rotation-sensitivity issue, and produce more efficient optimization objectives compared with 3D IoU during the training stage.

369, TITLE:     TD-Road: Top-Down Road Network Extraction with Holistic Graph Construction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3359_ECCV_2022_paper.php
AUTHORS:     Yang He, Ravi Garg, Amber Roy Chowdhury
HIGHLIGHT:     In contrast to the bottom-up graph-based approaches, which rely on orientation information, we propose a novel top-down approach to generate road network graphs with a holistic model, namely TD-Road.

370, TITLE:     Multi-faceted Distillation of Base-Novel Commonality for Few-Shot Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3523_ECCV_2022_paper.php
AUTHORS:     Shuang Wu, Wenjie Pei, Dianwen Mei, Fanglin Chen, Jiandong Tian, Guangming Lu
HIGHLIGHT:     In this work we propose to learn three types of class-agnostic commonalities between base and novel classes explicitly: recognition-related semantic commonalities, localization-related semantic commonalities and distribution commonalities.

371, TITLE:     PointCLM: A Contrastive Learning-Based Framework for Multi-Instance Point Cloud Registration
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3580_ECCV_2022_paper.php
AUTHORS:     Mingzhi Yuan, Zhihao Li, Qiuye Jin, Xinrong Chen, Manning Wang

HIGHLIGHT: In this paper, we propose PointCLM, a contrastive learning-based framework for mutli-instance point cloud registration.

372, TITLE: Weakly Supervised Object Localization via Transformer with Implicit Spatial Calibration
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3632_ECCV_2022_paper.php
AUTHORS: Haotian Bai, Ruimao Zhang, Jiong Wang, Xiang Wan
HIGHLIGHT: However, the long-range modeling in Transformer neglects the inherent spatial coherence of the object, and it usually diffuses the semantic-aware regions far from the object boundary, making localization results significantly larger or far smaller. To address such an issue, we introduce a simple yet effective Spatial Calibration Module (SCM) for accurate WSOL, incorporating semantic similarities of patch tokens and their spatial relationships into a unified diffusion model.

373, TITLE: MTTrans: Cross-Domain Object Detection with Mean Teacher Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3723_ECCV_2022_paper.php
AUTHORS: Jinze Yu, Jiaming Liu, Xiaobao Wei, Haoyi Zhou, Yohei Nakata, Denis Gudovskiy, Tomoyuki Okuno, Jianxin Li, Kurt Keutzer, Shanghang Zhang
HIGHLIGHT: However, it requires large-scale labeled data and suffers from domain shift, especially when no labeled data is available in the target domain. To solve this problem, we propose an end-to-end cross-domain detection Transformer based on the mean teacher framework, MTTrans, which can fully exploit unlabeled target domain data in object detection training and transfer knowledge between domains via pseudo labels.

374, TITLE: Multi-Domain Multi-Definition Landmark Localization for Small Datasets
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3780_ECCV_2022_paper.php
AUTHORS: David Ferman, Gaurav Bharaj
HIGHLIGHT: We present a novel method for multi image domain and multi-landmark definition learning for small dataset facial localization.

375, TITLE: DEVIANT: Depth EquiVarIAnt NeTwork for Monocular 3D Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3798_ECCV_2022_paper.php
AUTHORS: Abhinav Kumar, Garrick Brazil, Enrique Corona, Armin Parchami, Xiaoming Liu
HIGHLIGHT: Since the depth is the hardest to estimate for monocular detection, this paper proposes Depth EquiVarIAnt NeTwork (DEVIANT) built with existing scale equivariant steerable blocks.

376, TITLE: Label-Guided Auxiliary Training Improves 3D Object Detector
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3921_ECCV_2022_paper.php
AUTHORS: Yaomin Huang, Xinmei Liu, Yichen Zhu, Zhiyuan Xu, Chaomin Shen, Zhengping Che, Guixu Zhang, Yaxin Peng, Feifei Feng, Jian Tang
HIGHLIGHT: In this paper, we propose a Label-Guided auxiliary training method for 3D object detection (LG3D), which serves as an auxiliary network to enhance the feature learning of existing 3D object detectors.

377, TITLE: PromptDet: Towards Open-Vocabulary Detection Using Uncurated Images
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4001_ECCV_2022_paper.php
AUTHORS: Chengjian Feng, Yujie Zhong, Zequn Jie, Xiangxiang Chu, Haibing Ren, Xiaolin Wei, Weidi Xie, Lin Ma
HIGHLIGHT: The goal of this work is to establish a scalable pipeline for expanding an object detector towards novel/unseen categories, using zero manual annotations.

378, TITLE: Densely Constrained Depth Estimator for Monocular 3D Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4005_ECCV_2022_paper.php
AUTHORS: Yingyan Li, Yuntao Chen, Jiawei He, Zhaoxiang Zhang
HIGHLIGHT: In this paper, we propose a method that utilizes dense projection constraints from edges of any direction.

379, TITLE: Polarimetric Pose Prediction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4105_ECCV_2022_paper.php
AUTHORS: Daoyi Gao, Yitong Li, Patrick Ruhkamp, Iuliia Skobleva, Magdalena Wysocki, HyunJun Jung, Pengyuan Wang, Arturo Guridi, Benjamin Busam
HIGHLIGHT: This paper explores how complementary polarisation information, i.e. the orientation of light wave oscillations, influences the accuracy of pose predictions.

380, TITLE: DFNet: Enhance Absolute Pose Regression with Direct Feature Matching
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4115_ECCV_2022_paper.php
AUTHORS: Shuai Chen, Xinghui Li, Zirui Wang, Victor Adrian Prisacariu
HIGHLIGHT: We introduce a camera relocalization pipeline that combines absolute pose regression (APR) and direct feature matching.

381, TITLE: Cornerformer: Purifying Instances for Corner-Based Detectors
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4286_ECCV_2022_paper.php
AUTHORS: Haoran Wei, Xin Chen, Lingxi Xie, Qi Tian
HIGHLIGHT: Accordingly, this paper presents an elegant framework named Cornerformer that is composed of two factors.

382, TITLE: PillarNet: Real-Time and High-Performance Pillar-Based 3D Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4346_ECCV_2022_paper.php

AUTHORS: Guangsheng Shi, Ruifeng Li, Chao Ma
HIGHLIGHT: In this paper, by examining the primary performance gap between pillar- and voxel-based detectors, we develop a real-time and high-performance pillar-based detector, dubbed PillarNet.

383, TITLE: Robust Object Detection with Inaccurate Bounding Boxes
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4348_ECCV_2022_paper.php
AUTHORS: Chengxin Liu, Kewei Wang, Hao Lu, Zhiguo Cao, Ziming Zhang
HIGHLIGHT: In this work, we aim to address the challenge of learning robust object detectors with inaccurate bounding boxes.

384, TITLE: Efficient Decoder-Free Object Detection with Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4433_ECCV_2022_paper.php
AUTHORS: Peixian Chen, Mengdan Zhang, Yunhang Shen, Kekai Sheng, Yuting Gao, Xing Sun, Ke Li, Chunhua Shen
HIGHLIGHT: As a result, transformer-based object detection could not prevail in large-scale applications. To overcome these issues, we propose a novel decoder-free fully transformer-based (DFFT) object detector, achieving high efficiency in both training and inference stages for the first time.

385, TITLE: Cross-Modality Knowledge Distillation Network for Monocular 3D Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4878_ECCV_2022_paper.php
AUTHORS: Yu Hong, Hang Dai, Yong Ding
HIGHLIGHT: In this paper, we propose the Cross-Modality Knowledge Distillation (CMKD) network for monocular 3D detection to efficiently and directly transfer the knowledge from LiDAR modality to image modality on both features and responses.

386, TITLE: ReAct: Temporal Action Detection with Relational Queries
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4975_ECCV_2022_paper.php
AUTHORS: Dingfeng Shi, Yujie Zhong, Qiong Cao, Jing Zhang, Lin Ma, Jia Li, Dacheng Tao
HIGHLIGHT: This work aims at advancing temporal action detection (TAD) using an encoder-decoder framework with action queries, similar to DETR, which has shown great success in object detection.

387, TITLE: Towards Accurate Active Camera Localization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5136_ECCV_2022_paper.php
AUTHORS: Qihang Fang, Yingda Yin, Qingnan Fan, Fei Xia, Siyan Dong, Sheng Wang, Jue Wang, Leonidas J. Guibas, Baoquan Chen
HIGHLIGHT: In this work, we tackle the problem of active camera localization, which controls the camera movements actively to achieve an accurate camera pose.

388, TITLE: Camera Pose Auto-Encoders for Improving Pose Regression
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5158_ECCV_2022_paper.php
AUTHORS: Yoli Shavit, Yosi Keller
HIGHLIGHT: In this work, we introduce Camera Pose Auto-Encoders (PAEs), multilayer perceptrons that are trained via a Teacher-Student approach to encode camera poses using APRs as their teachers.

389, TITLE: Improving the Intra-Class Long-Tail in 3D Detection via Rare Example Mining
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5325_ECCV_2022_paper.php
AUTHORS: Chiyu Max Jiang, Mahyar Najibi, Charles R. Qi, Yin Zhou, Dragomir Anguelov
HIGHLIGHT: In this study, we identify a new conceptual dimension - rareness - to mine new data for improving the long-tail performance of models.

390, TITLE: Bagging Regional Classification Activation Maps for Weakly Supervised Object Localization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5508_ECCV_2022_paper.php
AUTHORS: Lei Zhu, Qian Chen, Lujia Jin, Yunfei You, Yanye Lu
HIGHLIGHT: Thus only the discriminative locations are activated when feeding pixel-level features into this classifier. To solve this issue, this paper elaborates a plug-and-play mechanism called BagCAMs to better project a well-trained classifier for the localization task without refining or re-training the baseline structure.

391, TITLE: UC-OWOD: Unknown-Classified Open World Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5661_ECCV_2022_paper.php
AUTHORS: Zhiheng Wu, Yue Lu, Xingyu Chen, Zhengxing Wu, Liwen Kang, Junzhi Yu
HIGHLIGHT: In this work, we propose a novel OWOD problem called Unknown-Classified Open World Object Detection (UC-OWOD).

392, TITLE: RayTran: 3D Pose Estimation and Shape Reconstruction of Multiple Objects from Videos with Ray-Traced Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5669_ECCV_2022_paper.php
AUTHORS: Micha? J. Tyszkiewicz, Kevis-Kokitsi Maninis, Stefan Popov, Vittorio Ferrari
HIGHLIGHT: We propose a transformer-based neural network architecture for multi-object 3D reconstruction from RGB videos.

393, TITLE: GTCaR: Graph Transformer for Camera Re-Localization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5761_ECCV_2022_paper.php

AUTHORS: Xinyi Li, Haibin Ling
HIGHLIGHT: In this paper we propose a neural network approach with a graph Transformer backbone, namely GTCaR (Graph Transformer for Camera Re-localization), to address the multi-view camera re-localization problem.

394, TITLE: 3D Object Detection with a Self-Supervised Lidar Scene Flow Backbone
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5763_ECCV_2022_paper.php
AUTHORS: Emeç, Erçelik, Ekim Yurtsever, Mingyu Liu, Zhijie Yang, Hanzhen Zhang, P?nar Topç,am, Maximilian Listl, Y?lmaz Kaan Çayl?, Alois Knoll
HIGHLIGHT: Our main contribution leverages learned flow and motion representations and combines a self-supervised backbone with a supervised 3D detection head.

395, TITLE: Open Vocabulary Object Detection with Pseudo Bounding-Box Labels
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5913_ECCV_2022_paper.php
AUTHORS: Mingfei Gao, Chen Xing, Juan Carlos Niebles, Junnan Li, Ran Xu, Wenhao Liu, Caiming Xiong
HIGHLIGHT: To enlarge the set of base classes, we propose a method to automatically generate pseudo bounding-box annotations of diverse objects from large-scale image-caption pairs.

396, TITLE: Few-Shot Object Detection by Knowledge Distillation Using Bag-of-Visual-Words Representations
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6004_ECCV_2022_paper.php
AUTHORS: Wenjie Pei, Shuang Wu, Dianwen Mei, Fanglin Chen, Jiandong Tian, Guangming Lu
HIGHLIGHT: In this work we design a novel knowledge distillation framework to guide the learning of the object detector and thereby restrain the overfitting in both the pre-training stage on base classes and fine-tuning stage on novel classes.

397, TITLE: SALISA: Saliency-Based Input Sampling for Efficient Video Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6037_ECCV_2022_paper.php
AUTHORS: Babak Ehteshami Bejnordi, Amirhossein Habibian, Fatih Porikli, Amir Ghodrati
HIGHLIGHT: In this paper, we propose SALISA, a novel non-uniform SALiency-based Input SAmpling technique for video object detection that allows for heavy down-sampling of unimportant background regions while preserving the fine-grained details of a high-resolution image.

398, TITLE: ECO-TR: Efficient Correspondences Finding via Coarse-to-Fine Refinement
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6054_ECCV_2022_paper.php
AUTHORS: Dongli Tan, Jiang-Jiang Liu, Xingyu Chen, Chao Chen, Ruixin Zhang, Yunhang Shen, Shouhong Ding, Rongrong Ji
HIGHLIGHT: In this paper, we propose an efficient structure named Efficient Correspondence Transformer (ECO-TR) by finding correspondences in a coarse-to-fine manner, which significantly improves the efficiency of functional model.

399, TITLE: Vote from the Center: 6 DoF Pose Estimation in RGB-D Images by Radial Keypoint Voting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6108_ECCV_2022_paper.php
AUTHORS: Yangzheng Wu, Mohsen Zand, Ali Etemad, Michael Greenspan
HIGHLIGHT: We propose a novel keypoint voting scheme based on intersecting spheres, that is more accurate than existing schemes and allows for fewer, more disperse keypoints.

400, TITLE: Long-Tailed Instance Segmentation Using Gumbel Optimized Loss
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6148_ECCV_2022_paper.php
AUTHORS: Konstantinos Panagiotis Alexandridis, Jiankang Deng, Anh Nguyen, Shan Luo
HIGHLIGHT: In this paper, we identify that Sigmoid or Softmax functions used in deep detectors are a major reason for low performance and are suboptimal for long-tailed detection and segmentation.

401, TITLE: DetMatch: Two Teachers Are Better than One for Joint 2D and 3D Semi-Supervised Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6162_ECCV_2022_paper.php
AUTHORS: Jinhyung Park, Chenfeng Xu, Yiyang Zhou, Masayoshi Tomizuka, Wei Zhan
HIGHLIGHT: Observing that the distinct characteristics of each sensor cause them to be biased towards detecting different objects, we propose DetMatch, a flexible framework for joint semi-supervised learning on 2D and 3D modalities.

402, TITLE: ObjectBox: From Centers to Boxes for Anchor-Free Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6191_ECCV_2022_paper.php
AUTHORS: Mohsen Zand, Ali Etemad, Michael Greenspan
HIGHLIGHT: We present ObjectBox, a novel single-stage anchor-free and highly generalizable object detection approach.

403, TITLE: Is Geometry Enough for Matching in Visual Localization?
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6212_ECCV_2022_paper.php
AUTHORS: Qunjie Zhou, Sérgio Agostinho, Aljoša Ošep, Laura Leal-Taixé,
HIGHLIGHT: In this paper, we propose to go beyond the well-established approach to vision-based localization that relies on visual descriptor matching between a query image and a 3D point cloud.

404, TITLE: SWFormer: Sparse Window Transformer for 3D Object Detection in Point Clouds
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6236_ECCV_2022_paper.php
AUTHORS: Pei Sun, Mingxing Tan, Weiyue Wang, Chenxi Liu, Fei Xia, Zhaoqi Leng, Dragomir Anguelov

HIGHLIGHT: In this paper, we propose Sparse Window Transformer (SWFormer ), a scalable and accurate model for 3D object detection, which can take full advantage of the sparsity of point clouds.

405, TITLE: PCR-CG: Point Cloud Registration via Deep Explicit Color and Geometry
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6316_ECCV_2022_paper.php
AUTHORS: Yu Zhang, Junle Yu, Xiaolin Huang, Wenhui Zhou, Ji Hou
HIGHLIGHT: In this paper, we introduce PCR-CG: a novel 3D point cloud registration module explicitly embedding the color signals into geometry representation.

406, TITLE: GLAMD: Global and Local Attention Mask Distillation for Object Detectors
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6328_ECCV_2022_paper.php
AUTHORS: Younho Jang, Wheemyung Shin, Jinbeom Kim, Simon Woo, Sung-Ho Bae
HIGHLIGHT: To overcome such challenging issues, we propose a novel knowledge distillation method, GLAMD, distilling both global and local knowledge from the teacher.

407, TITLE: FCAF3D: Fully Convolutional Anchor-Free 3D Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6356_ECCV_2022_paper.php
AUTHORS: Danila Rukhovich, Anna Vorontsova, Anton Konushin
HIGHLIGHT: In this paper, we present FCAF3D -- a first-in-class fully convolutional anchor-free indoor 3D object detection method.

408, TITLE: Video Anomaly Detection by Solving Decoupled Spatio-Temporal Jigsaw Puzzles
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6451_ECCV_2022_paper.php
AUTHORS: Guodong Wang, Yunhong Wang, Jie Qin, Dongming Zhang, Xiuguo Bao, Di Huang
HIGHLIGHT: Motivated by the recent advances in self-supervised learning, this paper addresses VAD by solving an intuitive yet challenging pretext task, i.e., spatio-temporal jigsaw puzzles, which is cast as a multi-label fine-grained classification problem.

409, TITLE: Class-Agnostic Object Detection with Multi-modal Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6491_ECCV_2022_paper.php
AUTHORS: Muhammad Maaz, Hanoona Rasheed, Salman Khan, Fahad Shahbaz Khan, Rao Muhammad Anwer, Ming-Hsuan Yang
HIGHLIGHT: In this paper, we advocate that existing methods lack a top-down supervision signal governed by human-understandable semantics.

410, TITLE: Enhancing Multi-modal Features Using Local Self-Attention for 3D Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6955_ECCV_2022_paper.php
AUTHORS: Hao Li, Zehan Zhang, Xian Zhao, Yulong Wang, Yuxi Shen, Shiliang Pu, Hui Mao
HIGHLIGHT: In this paper, we propose EMMF-Det to do multi-modal fusion leveraging range and camera images.

411, TITLE: Object Detection As Probabilistic Set Prediction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6973_ECCV_2022_paper.php
AUTHORS: Georg Hess, Christoffer Petersson, Lennart Svensson
HIGHLIGHT: In this work, we propose to view object detection as a set prediction task where detectors predict the distribution over the set of objects.

412, TITLE: Weakly-Supervised Temporal Action Detection for Fine-Grained Videos with Hierarchical Atomic Actions
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6982_ECCV_2022_paper.php
AUTHORS: Zhi Li, Lu He, Huijuan Xu
HIGHLIGHT: We propose to model actions as the combinations of reusable atomic actions which are automatically discovered from data through self-supervised clustering, in order to capture the commonality and individuality of fine-grained actions.

413, TITLE: Neural Correspondence Field for Object Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7039_ECCV_2022_paper.php
AUTHORS: Lin Huang, Tomas Hodan, Lingni Ma, Linguang Zhang, Luan Tran, Christopher D. Twigg, Po-Chen Wu, Junsong Yuan, Cem Keskin, Robert Wang
HIGHLIGHT: We propose a method for estimating the 6DoF pose of a rigid object with an available 3D model from a single RGB image.

414, TITLE: On Label Granularity and Object Localization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7044_ECCV_2022_paper.php
AUTHORS: Elijah Cole, Kimberly Wilber, Grant Van Horn, Xuan Yang, Marco Fornoni, Pietro Perona, Serge Belongie, Andrew Howard, Oisin Mac Aodha
HIGHLIGHT: In this paper we study the role of label granularity in WSOL.

415, TITLE: OIMNet++: Prototypical Normalization and Localization-Aware Learning for Person Search
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7048_ECCV_2022_paper.php
AUTHORS: Sanghoon Lee, Youngmin Oh, Donghyeon Baek, Junghyup Lee, Bumsub Ham
HIGHLIGHT: In this paper, we introduce OIMNet++ that addresses the aforementioned limitations.

416, TITLE: Out-of-Distribution Identification: Let Detector Tell Which I Am Not Sure

http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7158_ECCV_2022_paper.php
AUTHORS: Ruoqi Li, Chongyang Zhang, Hao Zhou, Chao Shi, Yan Luo
HIGHLIGHT: In this work, the Feature structured OOD-IDentification (FOOD-ID) model is proposed to reduce the uncertainty of detection results by identifying the OOD instances.

417, TITLE: Learning with Free Object Segments for Long-Tailed Instance Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7311_ECCV_2022_paper.php
AUTHORS: Cheng Zhang, Tai-Yu Pan, Tianle Chen, Jike Zhong, Wenjin Fu, Wei-Lun Chao
HIGHLIGHT: In this paper, we explore the possibility to increase the training examples without laborious data collection and annotation.

418, TITLE: Autoregressive Uncertainty Modeling for 3D Bounding Box Prediction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7331_ECCV_2022_paper.php
AUTHORS: YuXuan Liu, Nikhil Mishra, Maximilian Sieb, Yide Shentu, Pieter Abbeel, Xi Chen
HIGHLIGHT: We propose methods for leveraging our autoregressive model to make high confidence predictions and meaningful uncertainty measures, achieving strong results on SUN-RGBD, Scannet, KITTI, and our new dataset.

419, TITLE: 3D Random Occlusion and Multi-layer Projection for Deep Multi-Camera Pedestrian Localization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7417_ECCV_2022_paper.php
AUTHORS: Rui Qiu, Ming Xu, Yuyao Yan, Jeremy S. Smith, Xi Yang
HIGHLIGHT: Using multi-view information fusion is a potential solution but has limited applications, due to the lack of annotated training samples in existing multi-view datasets, which increases the risk of overfitting. To address this problem, a data augmentation method is proposed to randomly generate 3D cylinder occlusions, on the ground plane, which are of the average size of pedestrians and projected to multiple views, to relieve the impact of overfitting in the training.

420, TITLE: A Simple Single-Scale Vision Transformer for Object Detection and Instance Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7441_ECCV_2022_paper.php
AUTHORS: Wuyang Chen, Xianzhi Du, Fan Yang, Lucas Beyer, Xiaohua Zhai, Tsung-Yi Lin, Huizhong Chen, Jing Li, Xiaodan Song, Zhangyang Wang, Denny Zhou
HIGHLIGHT: In this paper, we comprehensively study three architecture design choices on ViT -- spatial reduction, doubled channels, and multiscale features -- and demonstrate that a vanilla ViT architecture can fulfill this goal without handcrafting multiscale features, maintaining the original ViT design philosophy.

421, TITLE: Simple Open-Vocabulary Object Detection with Vision Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7529_ECCV_2022_paper.php
AUTHORS: Matthias Minderer, Alexey Gritsenko, Austin Stone, Maxim Neumann, Dirk Weissenborn, Alexey Dosovitskiy, Aravindh Mahendran, Anurag Arnab, Mostafa Dehghani, Zhuoran Shen, Xiao Wang, Xiaohua Zhai, Thomas Kipf, Neil Houlsby
HIGHLIGHT: In this paper, we propose a strong recipe for transferring image-text models to open-vocabulary object detection.

422, TITLE: A Simple Approach and Benchmark for 21,000-Category Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/8094_ECCV_2022_paper.php
AUTHORS: Yutong Lin, Chen Li, Yue Cao, Zheng Zhang, Jianfeng Wang, Lijuan Wang, Zicheng Liu, Han Hu
HIGHLIGHT: Unlike previous efforts that usually transfer knowledge from base detectors to image classification data, we propose to rely more on a reverse information flow from a base image classifier to object detection data.

423, TITLE: Knowledge Condensation Distillation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/75_ECCV_2022_paper.php
AUTHORS: Chenxin Li, Mingbao Lin, Zhiyuan Ding, Nie Lin, Yihong Zhuang, Yue Huang, Xinghao Ding, Liujuan Cao
HIGHLIGHT: In this paper, we propose Knowledge Condensation Distillation (KCD).

424, TITLE: Reducing Information Loss for Spiking Neural Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/88_ECCV_2022_paper.php
AUTHORS: Yufei Guo, Yuanpei Chen, Liwen Zhang, YingLei Wang, Xiaode Liu, Xinyi Tong, Yuanyuan Ou, Xuhui Huang, Zhe Ma
HIGHLIGHT: Meanwhile, quantifying the membrane potential to 0/1 spikes at the firing instants will inevitably introduce the quantization error thus bringing about information loss too. To address these problems, we propose a "Soft Reset mechanism for the supervised training-based SNNs, which will drive the membrane potential to a dynamic reset potential according to its magnitude, and Membrane Potential Rectifier (MPR) to reduce the quantization error via redistributing the membrane potential to a range close to the spikes.

425, TITLE: Masked Generative Distillation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/140_ECCV_2022_paper.php
AUTHORS: Zhendong Yang, Zhe Li, Mingqi Shao, Dachuan Shi, Zehuan Yuan, Chun Yuan
HIGHLIGHT: This paper shows that teachers can also improve students' representation power by guiding students' feature recovery. From this point of view, we propose Masked Generative Distillation (MGD), which is simple: we mask random pixels of the student's feature and force it to generate the teacher's full feature through a simple block.

426, TITLE: Fine-Grained Data Distribution Alignment for Post-Training Quantization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/190_ECCV_2022_paper.php

AUTHORS: Yunshan Zhong, Mingbao Lin, Mengzhao Chen, Ke Li, Yunhang Shen, Fei Chao, Yongjian Wu, Rongrong Ji
HIGHLIGHT: While post-training quantization receives popularity mostly due to its evasion in accessing the original complete training dataset, its poor performance also stems from scarce images. To alleviate this limitation, in this paper, we leverage the synthetic data introduced by zero-shot quantization with calibration dataset and propose a fine-grained data distribution alignment (FDDA) method to boost the performance of post-training quantization.

427, TITLE: Learning with Recoverable Forgetting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/798_ECCV_2022_paper.php
AUTHORS: Jingwen Ye, Yifang Fu, Jie Song, Xingyi Yang, Songhua Liu, Xin Jin, Mingli Song, Xinchao Wang
HIGHLIGHT: In this paper, we explore a novel learning scheme, termed as \textbf{L}earning w\textbf{I}th \textbf{R}ecoverable \textbf{F}orgetting (LIRF), that explicitly handles the task- or sample-specific knowledge removal and recovery.

428, TITLE: Efficient One Pass Self-Distillation with Zipf's Label Smoothing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/807_ECCV_2022_paper.php
AUTHORS: Jiajun Liang, Linze Li, Zhaodong Bing, Borui Zhao, Yao Tang, Bo Lin, Haoqiang Fan
HIGHLIGHT: This paper proposes an efficient self-distillation method named Zipf's Label Smoothing (Zipf's LS), which uses the on-the-fly prediction of a network to generate soft supervision that conforms to Zipf distribution without using any contrastive samples or auxiliary parameters.

429, TITLE: Prune Your Model before Distill It
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1136_ECCV_2022_paper.php
AUTHORS: Jinhyuk Park, Albert No
HIGHLIGHT: In this work, we propose the novel framework, "prune, then distill," that prunes the model first to make it more transferrable and then distill it to the student.

430, TITLE: Deep Partial Updating: Towards Communication Efficient Updating for On-Device Inference
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1447_ECCV_2022_paper.php
AUTHORS: Zhongnan Qu, Cong Liu, Lothar Thiele
HIGHLIGHT: In this paper, we propose the weight-wise deep partial updating paradigm, which smartly selects a small subset of weights to update in each server-to-edge communication round, while achieving a similar performance compared to full updating.

431, TITLE: Patch Similarity Aware Data-Free Quantization for Vision Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1580_ECCV_2022_paper.php
AUTHORS: Zhikai Li, Liping Ma, Mengjuan Chen, Junrui Xiao, Qingyi Gu
HIGHLIGHT: In this paper, we propose PSAQ-ViT, a Patch Similarity Aware data-free Quantization framework for Vision Transformers, to enable the generation of realistic samples based on the vision transformer's unique properties for calibrating the quantization parameters.

432, TITLE: L3: Accelerator-Friendly Lossless Image Format for High-Resolution, High-Throughput DNN Training
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1766_ECCV_2022_paper.php
AUTHORS: Jonghyun Bae, Woohyeon Baek, Tae Jun Ham, Jae W. Lee
HIGHLIGHT: Thus, we propose L3, a custom lightweight, lossless image format for high-resolution, high-throughput DNN training.

433, TITLE: Streaming Multiscale Deep Equilibrium Models
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2054_ECCV_2022_paper.php
AUTHORS: Can Ufuk Ertenli, Emre Akbas, Ramazan Gokberk Cinbis
HIGHLIGHT: We present StreamDEQ, a method that infers frame-wise representations on videos with minimal per-frame computation.

434, TITLE: Symmetry Regularization and Saturating Nonlinearity for Robust Quantization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2337_ECCV_2022_paper.php
AUTHORS: Sein Park, Yeongsang Jang, Eunhyeok Park
HIGHLIGHT: In this work, we perform extensive analyses to identify the sources of quantization error and present three insights to robustify the network against quantization: reduction of error propagation, range clamping for error minimization, and inherited robustness against quantization.

435, TITLE: SP-Net: Slowly Progressing Dynamic Inference Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2761_ECCV_2022_paper.php
AUTHORS: Huanyu Wang, Wenhu Zhang, Shihao Su, Hui Wang, Zhenwei Miao, Xin Zhan, Xi Li
HIGHLIGHT: To alleviate the problems above, we propose a slowly progressing dynamic inference network to stabilize the optimization.

436, TITLE: Equivariance and Invariance Inductive Bias for Learning from Insufficient Data
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3535_ECCV_2022_paper.php
AUTHORS: Tan Wang, Qianru Sun, Sugiri Pranata, Karlekar Jayashree, Hanwang Zhang
HIGHLIGHT: We are interested in learning robust models from insufficient data, without the need for any externally pre-trained checkpoints.

437, TITLE: Mixed-Precision Neural Network Quantization via Learned Layer-Wise Importance
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3598_ECCV_2022_paper.php
AUTHORS: Chen Tang, Kai Ouyang, Zhi Wang, Yifei Zhu, Wen Ji, Yaowei Wang, Wenwu Zhu
HIGHLIGHT: In this study, we reveal that some unique learnable parameters in quantization, namely the scale factors in the quantizer, can serve as importance indicators of a layer, reflecting the contribution of that layer to the final accuracy at certain bit-widths.

438, TITLE: Event Neural Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3751_ECCV_2022_paper.php
AUTHORS: Matthew Dutson, Yin Li, Mohit Gupta
HIGHLIGHT: Such redundancy occurs at multiple levels of complexity, from low-level pixel values to textures and high-level semantics. We propose Event Neural Networks (EvNets), which leverage this redundancy to achieve considerable computation savings during video inference.

439, TITLE: EdgeViTs: Competing Light-Weight CNNs on Mobile Devices with Vision Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3769_ECCV_2022_paper.php
AUTHORS: Junting Pan, Adrian Bulat, Fuwen Tan, Xiatian Zhu, Lukasz Dudziak, Hongsheng Li, Georgios Tzimiropoulos, Brais Martinez
HIGHLIGHT: In this work, pushing further along this under-studied direction we introduce EdgeViTs, a new family of light-weight ViTs that, for the first time, enable attention-based vision models to compete with the best light-weight CNNs in the tradeoff between accuracy and on-device efficiency.

440, TITLE: PalQuant: Accelerating High-Precision Networks on Low-Precision Accelerators
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4047_ECCV_2022_paper.php
AUTHORS: Qinghao Hu, Gang Li, Qiman Wu, Jian Cheng
HIGHLIGHT: In this paper, we propose the PArallel Low-precision Quantization (PalQuant) method that approximates high-precision computations via learning parallel low-precision representations from scratch.

441, TITLE: Disentangled Differentiable Network Pruning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4273_ECCV_2022_paper.php
AUTHORS: Shangqian Gao, Feihu Huang, Yanfu Zhang, Heng Huang
HIGHLIGHT: In this paper, we propose a novel channel pruning method for compression and acceleration of Convolutional Neural Networks (CNNs).

442, TITLE: IDa-Det: An Information Discrepancy-Aware Distillation for 1-Bit Detectors
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4277_ECCV_2022_paper.php
AUTHORS: Sheng Xu, Yanjing Li, Bohan Zeng, Teli Ma, Baochang Zhang, Xianbin Cao, Peng Gao, Jinhu L&uuml,
HIGHLIGHT: This paper presents an Information Discrepancy-aware strategy (IDa-Det) to distill 1-bit detectors that can effectively eliminate information discrepancies and significantly reduce the performance gap between a 1-bit detector and its real-valued counterpart.

443, TITLE: Learning to Weight Samples for Dynamic Early-Exiting Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4295_ECCV_2022_paper.php
AUTHORS: Yizeng Han, Yifan Pu, Zihang Lai, Chaofei Wang, Shiji Song, Junfeng Cao, Wenhui Huang, Chao Deng, Gao Huang
HIGHLIGHT: However, the early-exiting behavior during testing has been ignored, leading to a gap between training and testing. In this paper, we propose to bridge this gap by sample weighting.

444, TITLE: AdaBin: Improving Binary Neural Networks with Adaptive Binary Sets
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4762_ECCV_2022_paper.php
AUTHORS: Zhijun Tu, Xinghao Chen, Pengju Ren, Yunhe Wang
HIGHLIGHT: To this end, we present a simple yet effective approach called AdaBin to adaptively obtain the optimal binary sets $\{b\_1, b\_2\}$ ($b\_1, b\_2$ belong to R) of weights and activations for each layer instead of a fixed set (i.e., $\{-1, +1\}$).

445, TITLE: Adaptive Token Sampling for Efficient Vision Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4901_ECCV_2022_paper.php
AUTHORS: Mohsen Fayyaz, Soroush Abbasi Koohpayegani, Farnoush Rezaei Jafari, Sunando Sengupta, Hamid Reza Vaezi Joze, Eric Sommerlade, Hamed Pirsiavash, J&uuml,rgen Gall
HIGHLIGHT: Although the GFLOPs of a vision transformer can be decreased by reducing the number of tokens in the network, there is no setting that is optimal for all input images. In this work, we therefore introduce a differentiable parameter-free Adaptive Token Sampler (ATS) module, which can be plugged into any existing vision transformer architecture.

446, TITLE: Weight Fixing Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5083_ECCV_2022_paper.php
AUTHORS: Christopher Subia-Waud, Srinandan Dasmahapatra
HIGHLIGHT: We propose a new method, which we call Weight Fixing Networks (WFN) that we design to realise four model outcome objectives: i) very few unique weights, ii) low-entropy weight encodings, iii) unique weight values which are amenable to energy-saving versions of hardware multiplication, and iv) lossless task-performance.

447, TITLE: Self-Slimmed Vision Transformer

http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5408_ECCV_2022_paper.php
AUTHORS: Zhuofan Zong, Kunchang Li, Guanglu Song, Yali Wang, Yu Qiao, Biao Leng, Yu Liu
HIGHLIGHT: To solve the issue, we propose a generic self-slimmed learning approach for vanilla ViTs, namely SiT.

448, TITLE: Switchable Online Knowledge Distillation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5410_ECCV_2022_paper.php
AUTHORS: Biao Qian, Yang Wang, Hongzhi Yin, Richang Hong, Meng Wang
HIGHLIGHT: Several crucial bottlenecks over the gap between them -- e.g., Why and when does a large gap harm the performance, especially for student? How to quantify the gap between teacher and student? -- have received limited formal study. In this paper, we propose Switchable Online Knowledge Distillation (SwitOKD), to answer these questions

449, TITLE: $\ell_\infty$-Robustness and Beyond: Unleashing Efficient Adversarial Training
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5478_ECCV_2022_paper.php
AUTHORS: Hadi M. Dolatabadi, Sarah Erfani, Christopher Leckie
HIGHLIGHT: In this paper, by leveraging the theory of coreset selection, we show how selecting a small subset of training data provides a general, more principled approach toward reducing the time complexity of robust training.

450, TITLE: Multi-Granularity Pruning for Model Acceleration on Mobile Devices
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5496_ECCV_2022_paper.php
AUTHORS: Tianli Zhao, Xi Sheryl Zhang, Wentao Zhu, Jiaxing Wang, Sen Yang, Ji Liu, Jian Cheng
HIGHLIGHT: In this paper, we present a unified framework for the Joint Channel pruning and Weight pruning, named JCW, which achieves an optimal pruning proportion between channel and weight pruning.

451, TITLE: Deep Ensemble Learning by Diverse Knowledge Distillation for Fine-Grained Object Classification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5616_ECCV_2022_paper.php
AUTHORS: Naoki Okamoto, Tsubasa Hirakawa, Takayoshi Yamashita, Hironobu Fujiyoshi
HIGHLIGHT: In this paper, we propose a knowledge distillation for ensemble by optimizing the elements of knowledge distillation as hyperparameters.

452, TITLE: Helpful or Harmful: Inter-Task Association in Continual Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5666_ECCV_2022_paper.php
AUTHORS: Hyundong Jin, Eunwoo Kim
HIGHLIGHT: In this work, we propose a novel approach to differentiate helpful and harmful information for old tasks using a model search to learn a current task effectively.

453, TITLE: Towards Accurate Binary Neural Networks via Modeling Contextual Dependencies
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5704_ECCV_2022_paper.php
AUTHORS: Xingrun Xing, Yangguang Li, Wei Li, Wenrui Ding, Yalong Jiang, Yufeng Wang, Jing Shao, Chunlei Liu, Xianglong Liu
HIGHLIGHT: However, such simple bit operations lack the ability of modeling contextual dependencies, which is critical for learning discriminative deep representations in vision models. In this work, we tackle this issue by presenting new designs of binary neural modules, which enables BNNs to learn effective contextual dependencies.

454, TITLE: SPIN: An Empirical Evaluation on Sharing Parameters of Isotropic Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5750_ECCV_2022_paper.php
AUTHORS: Chien-Yu Lin, Anish Prabhu, Thomas Merth, Sachin Mehta, Anurag Ranjan, Maxwell Horton, Mohammad Rastegari
HIGHLIGHT: In this paper, we perform an empirical evaluation on methods for sharing parameters in isotropic networks (SPIN).

455, TITLE: Ensemble Knowledge Guided Sub-network Search and Fine-Tuning for Filter Pruning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6024_ECCV_2022_paper.php
AUTHORS: Seunghyun Lee, Byung Cheol Song
HIGHLIGHT: This paper proposes a novel sub-network search and fine-tuning method that is named Ensemble Knowledge Guidance (EKG).

456, TITLE: Network Binarization via Contrastive Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6207_ECCV_2022_paper.php
AUTHORS: Yuzhang Shang, Dan Xu, Ziliang Zong, Liqiang Nie, Yan Yan
HIGHLIGHT: To mitigate the information degradation caused by the binarization operation from FP to binary activations, we establish a novel contrastive learning framework while training BNNs through the lens of Mutual Information (MI) maximization.

457, TITLE: Lipschitz Continuity Retained Binary Neural Network
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6210_ECCV_2022_paper.php
AUTHORS: Yuzhang Shang, Dan Xu, Bin Duan, Ziliang Zong, Liqiang Nie, Yan Yan
HIGHLIGHT: In this work, we introduce the Lipschitz continuity, a well-defined functional property, as the rigorous criteria to define the model robustness for BNN.

458, TITLE: SPViT: Enabling Faster Vision Transformers via Latency-Aware Soft Token Pruning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6265_ECCV_2022_paper.php

AUTHORS:　　　Zhenglun Kong, Peiyan Dong, Xiaolong Ma, Xin Meng, Wei Niu, Mengshu Sun, Xuan Shen, Geng Yuan, Bin Ren, Hao Tang, Minghai Qin, Yanzhi Wang
HIGHLIGHT:　　　Considering the computation complexity, the internal data pattern of ViTs, and the edge device deployment, we propose a latency-aware soft token pruning framework, SPViT, which can be set up on vanilla Transformers of both flatten and hierarchical structures, such as DeiTs and Swin-Transformers (Swin).

459, TITLE:　　　Soft Masking for Cost-Constrained Channel Pruning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6269_ECCV_2022_paper.php
AUTHORS:　　　Ryan Humble, Maying Shen, Jorge Albericio Latorre, Eric Darve, Jose Alvarez
HIGHLIGHT:　　　We propose Soft Masking for cost-constrained Channel Pruning (SMCP) to allow pruned channels to adaptively return to the network while simultaneously pruning towards a target cost constraint.

460, TITLE:　　　Non-uniform Step Size Quantization for Accurate Post-Training Quantization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6287_ECCV_2022_paper.php
AUTHORS:　　　Sangyun Oh, Hyeonuk Sim, Jounghyun Kim, Jongeun Lee
HIGHLIGHT:　　　In this paper we propose a novel PTQ scheme to bridge the gap, with minimal impact on hardware cost.

461, TITLE:　　　SuperTickets: Drawing Task-Agnostic Lottery Tickets from Supernets via Jointly Architecture Searching and Parameter Pruning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6312_ECCV_2022_paper.php
AUTHORS:　　　Haoran You, Baopu Li, Zhanyi Sun, Xu Ouyang, Yingyan Lin
HIGHLIGHT:　　　In this paper, we discover for the first time that both efficient DNNs and their lottery subnetworks (i.e., lottery tickets) can be directly identified from a supernet, which we term as SuperTickets, via a two-in-one training scheme with jointly architecture searching and parameter pruning.

462, TITLE:　　　Meta-GF: Training Dynamic-Depth Neural Networks Harmoniously
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6337_ECCV_2022_paper.php
AUTHORS:　　　Yi Sun, Jian Li, Xin Xu
HIGHLIGHT:　　　The interference would reduce performance of the models and cause negative influences on the convergence speed. To address this problem, we investigate the gradient conflict of these multi-exit networks, and propose a novel meta-learning based training paradigm namely Meta-GF(meta gradient fusion) to harmoniously train these exits.

463, TITLE:　　　Towards Ultra Low Latency Spiking Neural Networks for Vision and Sequential Tasks Using Temporal Pruning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6421_ECCV_2022_paper.php
AUTHORS:　　　Sayeed Shafayet Chowdhury, Nitin Rathi, Kaushik Roy
HIGHLIGHT:　　　To optimize the accuracy-energy-latency trade-off, we propose a temporal pruning method which starts with an SNN of T timesteps, and reduces T every iteration of training, with threshold and leak as trainable parameters.

464, TITLE:　　　Towards Accurate Network Quantization with Equivalent Smooth Regularizer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6454_ECCV_2022_paper.php
AUTHORS:　　　Kirill Solodskikh, Vladimir Chikin, Ruslan Aydarkhanov, Dehua Song, Irina Zhelavskaya, Jiansheng Wei
HIGHLIGHT:　　　However, they still suffer from accuracy degradation due to inappropriate gradients in the optimization phase, especially for low-bit precision network and low-level vision tasks. To alleviate this issue, this paper defines a family of equivalent smooth regularizers for neural network quantization, named as SQR, which represents the equivalent of actual quantization error.

465, TITLE:　　　Explicit Model Size Control and Relaxation via Smooth Regularization for Mixed-Precision Quantization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6475_ECCV_2022_paper.php
AUTHORS:　　　Vladimir Chikin, Kirill Solodskikh, Irina Zhelavskaya
HIGHLIGHT:　　　The main challenge of the mixed-precision approach is to define the bit-widths for each layer, while staying under memory and latency requirements. Motivated by this challenge, we introduce a novel technique for explicit complexity control of DNNs quantized to mixed-precision, which uses smooth optimization on the surface containing neural networks of constant size.

466, TITLE:　　　BASQ: Branch-Wise Activation-Clipping Search Quantization for Sub-4-Bit Neural Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6512_ECCV_2022_paper.php
AUTHORS:　　　Han-Byul Kim, Eunhyeok Park, Sungjoo Yoo
HIGHLIGHT:　　　In this paper, we propose Branch-wise Activation-clipping Search Quantization (BASQ), which is a novel quantization method for low-bit activation.

467, TITLE:　　　You Already Have It: A Generator-Free Low-Precision DNN Training Framework Using Stochastic Rounding
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6538_ECCV_2022_paper.php
AUTHORS:　　　Geng Yuan, Sung-En Chang, Qing Jin, Alec Lu, Yanyu Li, Yushu Wu, Zhenglun Kong, Yanyue Xie, Peiyan Dong, Minghai Qin, Xiaolong Ma, Xulong Tang, Zhenman Fang, Yanzhi Wang
HIGHLIGHT:　　　In this paper, we innovatively propose to employ the stochastic property of DNN training process itself and directly extract random numbers from DNNs in a self-sufficient manner.

468, TITLE:　　　Real Spike: Learning Real-Valued Spikes for Spiking Neural Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6623_ECCV_2022_paper.php
AUTHORS:　　　Yufei Guo, Liwen Zhang, Yuanpei Chen, Xinyi Tong, Xiaode Liu, YingLei Wang, Xuhui Huang, Zhe Ma

HIGHLIGHT: In this paper, we argue that SNNs may not benefit from the weight-sharing mechanism, which can effectively reduce parameters and improve inference efficiency in DNNs, in some hardwares, and assume that an SNN with unshared convolution kernels could perform better.

469, TITLE: FedLTN: Federated Learning for Sparse and Personalized Lottery Ticket Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6634_ECCV_2022_paper.php
AUTHORS: Vaikkunth Mugunthan, Eric Lin, Vignesh Gokul, Christian Lau, Lalana Kagal, Steve Pieper
HIGHLIGHT: In this paper, we propose FedLTN, a novel approach motivated by the well-known Lottery Ticket Hypothesis to learn sparse and personalized lottery ticket networks (LTNs) for communication-efficient and personalized FL under non-identically and independently distributed (non-IID) data settings.

470, TITLE: Theoretical Understanding of the Information Flow on Continual Learning Performance
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7281_ECCV_2022_paper.php
AUTHORS: Joshua Andle, Salimeh Yasaei Sekeh
HIGHLIGHT: While different CL training regimes have been extensively studied empirically, insufficient attention has been paid to the underlying theory. In this paper, we establish a probabilistic framework to analyze information flow through layers in networks for sequential tasks and its impact on learning performance.

471, TITLE: Exploring Lottery Ticket Hypothesis in Spiking Neural Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7345_ECCV_2022_paper.php
AUTHORS: Youngeun Kim, Yuhang Li, Hyoungseob Park, Yeshwanth Venkatesha, Ruokai Yin, Priyadarshini Panda
HIGHLIGHT: However, the iterative searching process of LTH brings a huge training computational cost when combined with the multiple timesteps of SNNs. To alleviate such heavy searching cost, we propose Early-Time (ET) ticket where we find the important weight connectivity from a smaller number of timesteps.

472, TITLE: On the Angular Update and Hyperparameter Tuning of a Scale-Invariant Network
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7375_ECCV_2022_paper.php
AUTHORS: Juseung Yun, Janghyeon Lee, Hyounguk Shon, Eojindl Yi, Seung Hwan Kim, Junmo Kim
HIGHLIGHT: We first find a common feature of good hyperparameter combinations on such a scale-invariant network, including learning rate, weight decay, number of data samples, and batch size. Then we observe that hyperparameter setups that lead to good performance show similar degrees of angular update during one epoch.

473, TITLE: LANA: Latency Aware Network Acceleration
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7385_ECCV_2022_paper.php
AUTHORS: Pavlo Molchanov, Jimmy Hall, Hongxu Yin, Jan Kautz, Nicolo Fusi, Arash Vahdat
HIGHLIGHT: We introduce latency-aware network acceleration (LANA)-an approach that builds on neural architecture search technique to accelerate neural networks.

474, TITLE: RDO-Q: Extremely Fine-Grained Channel-Wise Quantization via Rate-Distortion Optimization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7592_ECCV_2022_paper.php
AUTHORS: Zhe Wang, Jie Lin, Xue Geng, Mohamed M. Sabry Aly, Vijay Chandrasekhar
HIGHLIGHT: In this paper, we address the problem of efficiently exploring the hyperparameter space of channel bit widths.

475, TITLE: U-Boost NAS: Utilization-Boosted Differentiable Neural Architecture Search
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7802_ECCV_2022_paper.php
AUTHORS: Ahmet Caner Y&uuml;z&uuml;g&uuml;ler, Nikolaos Dimitriadis, Pascal Frossard
HIGHLIGHT: In this work, we propose a novel hardware-aware NAS framework that does not only optimize for task accuracy and inference latency, but also for resource utilization.

476, TITLE: PTQ4ViT: Post-Training Quantization for Vision Transformers with Twin Uniform Quantization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7856_ECCV_2022_paper.php
AUTHORS: Zhihang Yuan, Chenhao Xue, Yiqi Chen, Qiang Wu, Guangyu Sun
HIGHLIGHT: In this paper, we propose the twin uniform quantization method to reduce the quantization error on these activation values.

477, TITLE: Bitwidth-Adaptive Quantization-Aware Neural Network Training: A Meta-Learning Approach
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/8106_ECCV_2022_paper.php
AUTHORS: Jiseok Youn, Jaehun Song, Hyung-Sin Kim, Saewoong Bahk
HIGHLIGHT: Deep neural network quantization with adaptive bitwidths has gained increasing attention due to the ease of model deployment on various platforms with different resource budgets. In this paper, we propose a meta-learning approach to achieve this goal.

478, TITLE: Understanding the Dynamics of DNNs Using Graph Modularity
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/52_ECCV_2022_paper.php
AUTHORS: Yao Lu, Wen Yang, Yunzhe Zhang, Zuohui Chen, Jinyin Chen, Qi Xuan, Zhen Wang, Xiaoniu Yang
HIGHLIGHT: In this paper, we move a tiny step towards understanding the dynamics of feature representations over layers.

479, TITLE: Latent Discriminant Deterministic Uncertainty
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1119_ECCV_2022_paper.php
AUTHORS: Gianni Franchi, Xuanlong Yu, Andrei Bursuc, Emanuel Aldea, Severine Dubuisson, David Filliat

HIGHLIGHT: However, most successful approaches are computationally intensive. In this work, we attempt to address these challenges in the context of autonomous driving perception tasks.

480, TITLE: Making Heads or Tails: Towards Semantically Consistent Visual Counterfactuals
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1330_ECCV_2022_paper.php
AUTHORS: Simon Vandenhende, Dhruv Mahajan, Filip Radenovic, Deepti Ghadiyaram
HIGHLIGHT: In this work, we present a novel framework for computing visual counterfactual explanations based on two key ideas.

481, TITLE: HIVE: Evaluating the Human Interpretability of Visual Explanations
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1511_ECCV_2022_paper.php
AUTHORS: Sunnie S. Y. Kim, Nicole Meister, Vikram V. Ramaswamy, Ruth Fong, Olga Russakovsky
HIGHLIGHT: In this work, we introduce HIVE (Human Interpretability of Visual Explanations), a novel human evaluation framework that assesses the utility of explanations to human users in AI-assisted decision making scenarios, and enables falsifiable hypothesis testing, cross-method comparison, and human-centered evaluation of visual interpretability methods.

482, TITLE: BayesCap: Bayesian Identity Cap for Calibrated Uncertainty in Frozen Neural Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1824_ECCV_2022_paper.php
AUTHORS: Uddeshya Upadhyay, Shyamgopal Karthik, Yanbei Chen, Massimiliano Mancini, Zeynep Akata
HIGHLIGHT: Moreover, many of the high-performing deep learning models that are already trained and deployed are non-Bayesian in nature, and do not provide uncertainty estimates. To address these issues, we propose BayesCap that learns a Bayesian identity mapping for the frozen model, allowing uncertainty estimation.

483, TITLE: SESS: Saliency Enhancing with Scaling and Sliding
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2311_ECCV_2022_paper.php
AUTHORS: Osman Tursun, Simon Denman, Sridha Sridharan, Clinton Fookes
HIGHLIGHT: We propose a novel saliency enhancing approach called \textbf{SESS} (\textbf{S}aliency \textbf{E}nhancing with \textbf{S}caling and \textbf{S}liding).

484, TITLE: No Token Left Behind: Explainability-Aided Image Classification and Generation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2764_ECCV_2022_paper.php
AUTHORS: Roni Paiss, Hila Chefer, Lior Wolf
HIGHLIGHT: To mitigate it, we present a novel explainability-based approach, which adds a loss term to ensure that CLIP focuses on all relevant semantic parts of the input, in addition to employing the CLIP similarity loss used in previous works.

485, TITLE: Interpretable Image Classification with Differentiable Prototypes Assignment
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3240_ECCV_2022_paper.php
AUTHORS: Dawid Rymarczyk, ?ukasz Struski, Micha? G&oacute;rszczak, Koryna Lewandowska, Jacek Tabor, Bartosz Zieli?ski
HIGHLIGHT: To address those shortcomings, we introduce ProtoPool, an interpretable prototype-based model with positive reasoning and three main novelties.

486, TITLE: Contributions of Shape, Texture, and Color in Visual Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4287_ECCV_2022_paper.php
AUTHORS: Yunhao Ge, Yao Xiao, Zhi Xu, Xingrui Wang, Laurent Itti
HIGHLIGHT: We investigate the contributions of three important features of the human visual system (HVS)---shape, texture, and color ---to object classification.

487, TITLE: STEEX: Steering Counterfactual Explanations with Semantics
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4953_ECCV_2022_paper.php
AUTHORS: Paul Jacob, &Eacute;loi Zablocki, H&eacute;di Ben-Younes, Micka&euml;l Chen, Patrick P&eacute;rez, Matthieu Cord
HIGHLIGHT: In this work, we address the problem of producing counterfactual explanations for high-quality images and complex scenes.

488, TITLE: Are Vision Transformers Robust to Patch Perturbations?
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5424_ECCV_2022_paper.php
AUTHORS: Jindong Gu, Volker Tresp, Yao Qin
HIGHLIGHT: In this work, we study the robustness of ViT to patch-wise perturbations.

489, TITLE: A Dataset Generation Framework for Evaluating Megapixel Image Classifiers \&amp Their Explanations
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7350_ECCV_2022_paper.php
AUTHORS: Gautam Machiraju, Sylvia Plevritis, Parag Mallick
HIGHLIGHT: To investigate classification and explanation performance, we introduce a framework to (a) generate synthetic control images that reflect common properties of megapixel images and (b) evaluate average test-set correctness.

490, TITLE: Cartoon Explanations of Image Classifiers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7464_ECCV_2022_paper.php
AUTHORS: Stefan Kolek, Duc Anh Nguyen, Ron Levie, Joan Bruna, Gitta Kutyniok

HIGHLIGHT: We present CartoonX (Cartoon Explanation), a novel model-agnostic explanation method tailored towards image classifiers and based on the rate-distortion explanation (RDE) framework.

491, TITLE: Shap-CAM: Visual Explanations for Convolutional Neural Networks Based on Shapley Value
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7522_ECCV_2022_paper.php
AUTHORS: Quan Zheng, Ziwei Wang, Jie Zhou, Jiwen Lu
HIGHLIGHT: In this paper, we develop a novel post-hoc visual explanation method called Shap-CAM based on class activation mapping.

492, TITLE: Privacy-Preserving Face Recognition with Learnable Privacy Budgets in Frequency Domain
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/123_ECCV_2022_paper.php
AUTHORS: Jiazhen Ji, Huan Wang, Yuge Huang, Jiaxiang Wu, Xingkun Xu, Shouhong Ding, ShengChuan Zhang, Liujuan Cao, Rongrong Ji
HIGHLIGHT: This paper proposes a privacy-preserving face recognition method using differential privacy in the frequency domain.

493, TITLE: Contrast-Phys: Unsupervised Video-Based Remote Physiological Measurement via Spatiotemporal Contrast
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/205_ECCV_2022_paper.php
AUTHORS: Zhaodong Sun, Xiaobai Li
HIGHLIGHT: In this paper, we propose an unsupervised rPPG measurement method that does not require ground truth signals for training.

494, TITLE: Source-Free Domain Adaptation with Contrastive Domain Alignment and Self-Supervised Exploration for Face Anti-Spoofing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/362_ECCV_2022_paper.php
AUTHORS: Yuchen Liu, Yabo Chen, Wenrui Dai, Mengran Gou, Chun-Ting Huang, Hongkai Xiong
HIGHLIGHT: In this paper, we propose a novel Source-free Domain Adaptation framework for Face Anti-Spoofing, namely SDA-FAS, that addresses the problems of source knowledge adaptation and target data exploration under the source-free setting.

495, TITLE: On Mitigating Hard Clusters for Face Clustering
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/413_ECCV_2022_paper.php
AUTHORS: Yingjie Chen, Huasong Zhong, Chong Chen, Chen Shen, Jianqiang Huang, Tao Wang, Yun Liang, Qianru Sun
HIGHLIGHT: We introduce two novel modules, Neighborhood-Diffusion-based Density (NDDe) and Transition-Probability-based Distance (TPDi), based on which we can simply apply the standard Density Peak Clustering algorithm with a uniform threshold.

496, TITLE: OneFace: One Threshold for All
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/815_ECCV_2022_paper.php
AUTHORS: Jiaheng Liu, Zhipeng Yu, Haoyu Qin, Yichao Wu, Ding Liang, Gangming Zhao, Ke Xu
HIGHLIGHT: In this paper, we rethink the limitations of existing evaluation protocols for FR and propose to evaluate the performance of FR models from a new perspective.

497, TITLE: Label2Label: A Language Modeling Framework for Multi-Attribute Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1175_ECCV_2022_paper.php
AUTHORS: Wanhua Li, Zhexuan Cao, Jianjiang Feng, Jie Zhou, Jiwen Lu
HIGHLIGHT: This paper proposes a simple yet generic framework named Label2Label to exploit the complex attribute correlations.

498, TITLE: AgeTransGAN for Facial Age Transformation with Rectified Performance Metrics
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1344_ECCV_2022_paper.php
AUTHORS: Gee-Sern Hsu, Rui-Cang Xie, Zhi-Ting Chen, Yu-Hong Lin
HIGHLIGHT: We propose the AgeTransGAN for facial age transformation and the improvements to the metrics for performance evaluation.

499, TITLE: Hierarchical Contrastive Inconsistency Learning for Deepfake Video Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1606_ECCV_2022_paper.php
AUTHORS: Zhihao Gu, Taiping Yao, Yang Chen, Shouhong Ding, Lizhuang Ma
HIGHLIGHT: In this paper, we propose a novel Hierarchical Contrastive Inconsistency Learning framework (HCIL) with a two-level contrastive paradigm.

500, TITLE: Rethinking Robust Representation Learning under Fine-Grained Noisy Faces
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1982_ECCV_2022_paper.php
AUTHORS: Bingqi Ma, Guanglu Song, Boxiao Liu, Yu Liu
HIGHLIGHT: Different types of noisy faces can be generated by adjusting the values of N, K, and C. Based on this unified formulation, we found that the main barrier behind the noise-robust representation learning is the flexibility of the algorithm under different N, K, and C. For this potential problem, we constructively propose a new method, named Evolving Sub-centers Learning (ESL), to find optimal hyperplanes to accurately describe the latent space of massive noisy faces.

501, TITLE: Teaching Where to Look: Attention Similarity Knowledge Distillation for Low Resolution Face Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2218_ECCV_2022_paper.php
AUTHORS: Sungho Shin, Joosoon Lee, Junseok Lee, Yeonguk Yu, Kyoobin Lee

HIGHLIGHT: We propose an attention similarity knowledge distillation approach, which transfers attention maps obtained from a high resolution (HR) network as a teacher into an LR network as a student to boost LR recognition performance.

502, TITLE: Teaching with Soft Label Smoothing for Mitigating Noisy Labels in Facial Expressions
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2267_ECCV_2022_paper.php
AUTHORS: Tohar Lukov, Na Zhao, Gim Hee Lee, Ser-Nam Lim
HIGHLIGHT: Recent studies have highlighted the problem of noisy labels in large scale in-the-wild facial expressions datasets due to the uncertainties caused by ambiguous facial expressions, low-quality facial images, and the subjectiveness of annotators. To solve the problem of noisy labels, we propose Soft Label Smoothing (SLS), which smooths out multiple high-confidence classes in the logits by assigning them a probability based on the corresponding confidence, and at the same time assigning a fixed low probability to the low-confidence classes.

503, TITLE: Learning Dynamic Facial Radiance Fields for Few-Shot Talking Head Synthesis
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2373_ECCV_2022_paper.php
AUTHORS: Shuai Shen, Wanhua Li, Zheng Zhu, Yueqi Duan, Jie Zhou, Jiwen Lu
HIGHLIGHT: In this paper, we propose Dynamic Facial Radiance Fields (DFRF) for few-shot talking head synthesis, which can rapidly generalize to an unseen identity with few training data.

504, TITLE: CoupleFace: Relation Matters for Face Recognition Distillation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2403_ECCV_2022_paper.php
AUTHORS: Jiaheng Liu, Haoyu Qin, Yichao Wu, Jinyang Guo, Ding Liang, Ke Xu
HIGHLIGHT: In this work, we observe that mutual relation knowledge between samples is also important to improve the discrim- inative ability of the learned representation of the student model, and propose an effective face recognition distilla- tion method called CoupleFace by additionally introducing the Mutual Relation Distillation (MRD) into existing distil- lation framework.

505, TITLE: Controllable and Guided Face Synthesis for Unconstrained Face Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2887_ECCV_2022_paper.php
AUTHORS: Feng Liu, Minchul Kim, Anil Jain, Xiaoming Liu
HIGHLIGHT: Although significant advances have been made in face recognition (FR), FR in unconstrained environments remains challenging due to the domain gap between the semi-constrained training datasets and unconstrained testing scenarios. To address this problem, we propose a controllable face synthesis model (CFSM) that can mimic the distribution of target datasets in a style latent space.

506, TITLE: Towards Robust Face Recognition with Comprehensive Search
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3127_ECCV_2022_paper.php
AUTHORS: Manyuan Zhang, Guanglu Song, Yu Liu, Hongsheng Li
HIGHLIGHT: Previously, the research community tries to improve the performance of each single aspect but failed to present a unified solution on the joint search of the optimal designs for all three aspects. In this paper, we for the first time identify that these aspects are tightly coupled to each other.

507, TITLE: Towards Unbiased Label Distribution Learning for Facial Pose Estimation Using Anisotropic Spherical Gaussian
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4292_ECCV_2022_paper.php
AUTHORS: Zhiwen Cao, Dongfang Liu, Qifan Wang, Yingjie Chen
HIGHLIGHT: In this paper, we propose an Anisotropic Spherical Gaussian (ASG)-based LDL approach for facial pose estimation.

508, TITLE: AU-Aware 3D Face Reconstruction through Personalized AU-Specific Blendshape Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5175_ECCV_2022_paper.php
AUTHORS: Chenyi Kuang, Zijun Cui, Jeffrey O. Kephart, Qiang Ji
HIGHLIGHT: We present a multi-stage learning framework that recovers AU-interpretable 3D facial details by learning personalized AU-specific blendshapes from images.

509, TITLE: B&eacutezierPalm: A Free Lunch for Palmprint Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5369_ECCV_2022_paper.php
AUTHORS: Kai Zhao, Lei Shen, Yingyi Zhang, Chuhan Zhou, Tao Wang, Ruixin Zhang, Shouhong Ding, Wei Jia, Wei Shen
HIGHLIGHT: In this paper, by observing that palmar creases are the key information to deep-learning-based palmprint recognition, we propose to synthesize training data by manipulating palmar creases.

510, TITLE: Adaptive Transformers for Robust Few-Shot Cross-Domain Face Anti-Spoofing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5418_ECCV_2022_paper.php
AUTHORS: Hsin-Ping Huang, Deqing Sun, Yaojie Liu, Wen-Sheng Chu, Taihong Xiao, Jinwei Yuan, Hartwig Adam, Ming-Hsuan Yang
HIGHLIGHT: In this paper, we present adaptive vision transformers (ViT) for robust cross-domain face anti-spoofing.

511, TITLE: Face2Face$^\rho$: Real-Time High-Resolution One-Shot Face Reenactment
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5548_ECCV_2022_paper.php
AUTHORS: Kewei Yang, Kang Chen, Daoliang Guo, Song-Hai Zhang, Yuan-Chen Guo, Weidong Zhang

HIGHLIGHT: In this paper, we introduce Face2Face^&Iuml, the first Real-time High-resolution and One-shot (RHO, &Iuml) face reenactment framework.

512, TITLE: Towards Racially Unbiased Skin Tone Estimation via Scene Disambiguation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5578_ECCV_2022_paper.php
AUTHORS: Haiwen Feng, Timo Bolkart, Joachim Tesch, Michael J. Black, Victoria Abrevaya
HIGHLIGHT: We find that current methods are biased towards light skin tones due to (1) strongly biased priors that prefer lighter pigmentation and (2) algorithmic solutions that disregard the light/albedo ambiguity. To address this, we propose a new evaluation dataset (FAIR) and an algorithm (TRUST) to improve albedo estimation and, hence, fairness.

513, TITLE: BoundaryFace: A Mining Framework with Noise Label Self-Correction for Face Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5914_ECCV_2022_paper.php
AUTHORS: Shijie Wu, Xun Gong
HIGHLIGHT: In this paper, starting from the perspective of decision boundary, we propose a novel mining framework that focuses on the relationship between a sample's ground truth class center and its nearest negative class center.

514, TITLE: Pre-training Strategies and Datasets for Facial Representation Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6097_ECCV_2022_paper.php
AUTHORS: Adrian Bulat, Shiyang Cheng, Jing Yang, Andrew Garbett, Enrique Sanchez, Georgios Tzimiropoulos
HIGHLIGHT: Our main two findings are: (1) Unsupervised pre-training on completely in-the-wild, uncurated data provides consistent and, in some cases, significant accuracy improvements for all facial tasks considered. (2) Many existing facial video datasets seem to have a large amount of redundancy.

515, TITLE: Look Both Ways: Self-Supervising Driver Gaze Estimation and Road Scene Saliency
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6185_ECCV_2022_paper.php
AUTHORS: Isaac Kasahara, Simon Stent, Hyun Soo Park
HIGHLIGHT: We present a new on-road driving dataset, called "Look Both Ways", which contains synchronized video of both driver faces and the forward road scene, along with ground truth gaze data registered from eye tracking glasses worn by the drivers.

516, TITLE: MFIM: Megapixel Facial Identity Manipulation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6192_ECCV_2022_paper.php
AUTHORS: Sanghyeon Na
HIGHLIGHT: In this work, we propose a novel face-swapping framework called Megapixel Facial Identity Manipulation (MFIM).

517, TITLE: 3D Face Reconstruction with Dense Landmarks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6228_ECCV_2022_paper.php
AUTHORS: Erroll Wood, Tadas Baltrušaitis, Charlie Hewitt, Matthew Johnson, Jingjing Shen, Nikola Milosavljevi?, Daniel Wilde, Stephan Garbin, Toby Sharp, Ivan Stojiljkovi?, Tom Cashman, Julien Valentin
HIGHLIGHT: In answer, we present the first method that accurately predicts 10x as many landmarks as usual, covering the whole head, including the eyes and teeth.

518, TITLE: Emotion-Aware Multi-View Contrastive Learning for Facial Emotion Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6342_ECCV_2022_paper.php
AUTHORS: Daeha Kim, Byung Cheol Song
HIGHLIGHT: This paper proposes a novel approach to generate features related to emotional expression through feature transformation and to use them for emotional representation learning.

519, TITLE: Order Learning Using Partially Ordered Data via Chainization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6394_ECCV_2022_paper.php
AUTHORS: Seon-Ho Lee, Chang-Su Kim
HIGHLIGHT: We propose the chainization algorithm for effective order learning when only partially ordered data are available.

520, TITLE: Unsupervised High-Fidelity Facial Texture Generation and Reconstruction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6541_ECCV_2022_paper.php
AUTHORS: Ron Slossberg, Ibrahim Jubran, Ron Kimmel
HIGHLIGHT: In this paper, we propose a novel unified pipeline for both tasks, generation of texture with coupled geometry, and reconstruction of high-fidelity texture.

521, TITLE: Multi-Domain Learning for Updating Face Anti-Spoofing Models
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7360_ECCV_2022_paper.php
AUTHORS: Xiao Guo, Yaojie Liu, Anil Jain, Xiaoming Liu
HIGHLIGHT: In this work, we study multi-domain learning for face anti-spoofing (MD-FAS), where a pre-trained FAS model needs to be updated to perform equally well on both source and target domains while only using target domain data for updating.

522, TITLE: Towards Metrical Reconstruction of Human Faces
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7474_ECCV_2022_paper.php
AUTHORS: Wojciech Zielonka, Timo Bolkart, Justus Thies

HIGHLIGHT: To this end, we take advantage of a face recognition network pretrained on a large-scale 2D image dataset, which provides distinct features for different faces and is robust to expression, illumination, and camera changes. Using these features, we train our face shape estimator in a supervised fashion, inheriting the robustness and generalization of the face recognition network.

523, TITLE: Discover and Mitigate Unknown Biases with Debiasing Alternate Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1018_ECCV_2022_paper.php
AUTHORS: Zhiheng Li, Anthony Hoogs, Chenliang Xu
HIGHLIGHT: To resolve those problems, we propose Debiasing Alternate Networks (DebiAN), which comprises two networks---a Discoverer and a Classifier.

524, TITLE: Unsupervised and Semi-Supervised Bias Benchmarking in Face Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1086_ECCV_2022_paper.php
AUTHORS: Alexandra Chouldechova, Siqi Deng, Yongxin Wang, Wei Xia, Pietro Perona
HIGHLIGHT: We introduce Semi-supervised Performance Evaluation for Face Recognition (SPE-FR).

525, TITLE: Towards Efficient Adversarial Training on Vision Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1395_ECCV_2022_paper.php
AUTHORS: Boxi Wu, Jindong Gu, Zhifeng Li, Deng Cai, Xiaofei He, Wei Liu
HIGHLIGHT: In this work, we first comprehensively study fast adversarial training on a variety of vision transformers and illustrate the relationship between the efficiency and robustness. Then, to expedite adversarial training on ViTs, we propose an efficient Attention Guided Adversarial Training mechanism.

526, TITLE: MIME: Minority Inclusion for Majority Group Enhancement of AI Performance
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1531_ECCV_2022_paper.php
AUTHORS: Pradyumna Chari, Yunhao Ba, Shreeram Athreya, Achuta Kadambi
HIGHLIGHT: In this paper, we make the surprising finding that including minority samples can improve test error for the majority group.

527, TITLE: Studying Bias in GANs through the Lens of Race
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2581_ECCV_2022_paper.php
AUTHORS: Vongani H. Maluleke, Neerja Thakkar, Tim Brooks, Ethan Weber, Trevor Darrell, Alexei A. Efros, Angjoo Kanazawa, Devin Guillory
HIGHLIGHT: In this work, we study how the performance and evaluation of generative image models are impacted by the racial composition of the datasets upon which these models are trained.

528, TITLE: Trust, but Verify: Using Self-Supervised Probing to Improve Trustworthiness
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2943_ECCV_2022_paper.php
AUTHORS: Ailin Deng, Shen Li, Miao Xiong, Zhirui Chen, Bryan Hooi
HIGHLIGHT: In this paper, we introduce a new approach of \emph{self-supervised probing}, which enables us to check and mitigate the overconfidence issue for a trained model, thereby improving its trustworthiness.

529, TITLE: Learning to Censor by Noisy Sampling
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3755_ECCV_2022_paper.php
AUTHORS: Ayush Chopra, Abhinav Java, Abhishek Singh, Vivek Sharma, Ramesh Raskar
HIGHLIGHT: The goal of this work is to protect sensitive information when learning from point clouds by censoring signal before the point cloud is released for downstream tasks.

530, TITLE: An Invisible Black-Box Backdoor Attack through Frequency Domain
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4333_ECCV_2022_paper.php
AUTHORS: Tong Wang, Yuan Yao, Feng Xu, Shengwei An, Hanghang Tong, Ting Wang
HIGHLIGHT: In this paper, we propose a simple but effective and invisible black-box backdoor attack FTrojan through trojaning the frequency domain.

531, TITLE: FairGRAPE: Fairness-Aware GRAdient Pruning mEthod for Face Attribute Classification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4688_ECCV_2022_paper.php
AUTHORS: Xiaofeng Lin, Seungbae Kim, Jungseock Joo
HIGHLIGHT: We propose a novel pruning method, Fairness-aware GRAdient Pruning mEthod (FairGRAPE), that minimizes the disproportionate impacts of pruning on different sub-groups.

532, TITLE: Attaining Class-Level Forgetting in Pretrained Model Using Few Samples
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4950_ECCV_2022_paper.php
AUTHORS: Pravendra Singh, Pratik Mazumder, Mohammed Asad Karim
HIGHLIGHT: The available data may also be limited due to privacy/ethical concerns, and re-training the model will not be possible. We propose a novel approach to address this problem without affecting the model's prediction power for the remaining classes.

533, TITLE: Anti-Neuron Watermarking: Protecting Personal Data against Unauthorized Neural Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5299_ECCV_2022_paper.php
AUTHORS: Zihang Zou, Boqing Gong, Liqiang Wang

HIGHLIGHT: We study protecting a user's data (e.g., images in this work) against a learner's unauthorized use in training neural networks.

534, TITLE: An Impartial Take to the CNN vs Transformer Robustness Contest
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6459_ECCV_2022_paper.php
AUTHORS: Francesco Pinto, Philip H. S. Torr, Puneet K. Dokania
HIGHLIGHT: In this paper we perform extensive empirical analyses showing that recent state-of-the-art CNNs (particularly, ConvNeXt) can be as robust and reliable or even sometimes more than the current state-of-the-art Transformers.

535, TITLE: Recover Fair Deep Classification Models via Altering Pre-trained Structure
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6678_ECCV_2022_paper.php
AUTHORS: Yanfu Zhang, Shangqian Gao, Heng Huang
HIGHLIGHT: This paper proposes a novel intra-processing method to improve model fairness by altering the deep network structure.

536, TITLE: Decouple-and-Sample: Protecting Sensitive Information in Task Agnostic Data Release
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6971_ECCV_2022_paper.php
AUTHORS: Abhishek Singh, Ethan Garza, Ayush Chopra, Praneeth Vepakomma, Vivek Sharma, Ramesh Raskar
HIGHLIGHT: We propose sanitizer, a framework for secure and task-agnostic data release.

537, TITLE: Privacy-Preserving Action Recognition via Motion Difference Quantization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7127_ECCV_2022_paper.php
AUTHORS: Sudhakar Kumawat, Hajime Nagahara
HIGHLIGHT: On the one hand, we want these systems to assist in our daily lives by understanding their surroundings, but on the other hand, we want them to do so without capturing any sensitive information. Towards this direction, this paper proposes a simple, yet robust privacy-preserving encoder called BDQ for the task of privacy-preserving human action recognition that is composed of three modules: Blur, Difference, and Quantization.

538, TITLE: Latent Space Smoothing for Individually Fair Representations
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7545_ECCV_2022_paper.php
AUTHORS: Momchil Peychev, Anian Ruoss, Mislav Balunovi?, Maximilian Baader, Martin Vechev
HIGHLIGHT: In this work, we introduce LASSI, the first representation learning method for certifying individual fairness of high-dimensional data.

539, TITLE: Parameterized Temperature Scaling for Boosting the Expressive Power in Post-Hoc Uncertainty Calibration
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7741_ECCV_2022_paper.php
AUTHORS: Christian Tomani, Daniel Cremers, Florian Buettner
HIGHLIGHT: We address the problem of uncertainty calibration and introduce a novel calibration method, Parametrized Temperature Scaling (PTS).

540, TITLE: FairStyle: Debiasing StyleGAN2 with Style Channel Manipulations
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7746_ECCV_2022_paper.php
AUTHORS: Cemre Efe Karakas, Alara Dirik, Eyl&uuml;l Yal&ccedil;?nkaya, Pinar Yanardag
HIGHLIGHT: In this paper, we propose a method for directly modifying a pre-trained StyleGAN2 model that can be used to generate a balanced set of images with respect to one (e.g., eyeglasses) or more attributes (e.g., gender and eyeglasses).

541, TITLE: Distilling the Undistillable: Learning from a Nasty Teacher
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7874_ECCV_2022_paper.php
AUTHORS: Surgan Jandial, Yash Khasbage, Arghya Pal, Vineeth N Balasubramanian, Balaji Krishnamurthy
HIGHLIGHT: Specifically, we analyze Nasty Teacher from two different directions and subsequently leverage them carefully to develop simple yet efficient methodologies, named as HTC and SCM, which increase the learning from Nasty Teacher by upto 68.63% on standard datasets.

542, TITLE: SOS! Self-Supervised Learning over Sets of Handled Objects in Egocentric Action Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/824_ECCV_2022_paper.php
AUTHORS: Victor Escorcia, Ricardo Guerrero, Xiatian Zhu, Brais Martinez
HIGHLIGHT: To overcome both limitations, we introduce Self-supervised learning Over Sets (SOS), an approach to pre-train a generic Objects In Contact (OIC) representation model from video object regions detected by an off-the-shelf hand-object contact detector.

543, TITLE: Egocentric Activity Recognition and Localization on a 3D Map
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1709_ECCV_2022_paper.php
AUTHORS: Miao Liu, Lingni Ma, Kiran Somasundaram, Yin Li, Kristen Grauman, James M. Rehg, Chao Li
HIGHLIGHT: Given a video captured from a first person perspective and the environment context of where the video is recorded, can we recognize what the person is doing and identify where the action occurs in the 3D space? We address this challenging problem of jointly recognizing and localizing actions of a mobile user on a known 3D map from egocentric videos.

544, TITLE: Generative Adversarial Network for Future Hand Segmentation from Egocentric Video
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1710_ECCV_2022_paper.php
AUTHORS: Wenqi Jia, Miao Liu, James M. Rehg

HIGHLIGHT: We introduce the novel problem of anticipating a time series of future hand masks from egocentric video.

545, TITLE: My View Is the Best View: Procedure Learning from Egocentric Videos
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1886_ECCV_2022_paper.php
AUTHORS: Siddhant Bansal, Chetan Arora, C.V. Jawahar
HIGHLIGHT: To this end, we present a novel self-supervised Correspond and Cut (CnC) framework for procedure learning.

546, TITLE: GIMO: Gaze-Informed Human Motion Prediction in Context
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2162_ECCV_2022_paper.php
AUTHORS: Yang Zheng, Yanchao Yang, Kaichun Mo, Jiaman Li, Tao Yu, Yebin Liu, Karen Liu, Leonidas J. Guibas
HIGHLIGHT: To reduce the gap, we propose a large-scale human motion dataset that delivers high-quality body pose sequences, scene scans, as well as ego-centric views with the eye gaze that serves as a surrogate for inferring human intent.

547, TITLE: Image-Based CLIP-Guided Essence Transfer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1135_ECCV_2022_paper.php
AUTHORS: Hila Chefer, Sagie Benaim, Roni Paiss, Lior Wolf
HIGHLIGHT: Our blending operator combines the powerful StyleGAN generator and the semantic encoder of CLIP in a novel way that is simultaneously additive in both latent spaces, resulting in a mechanism that guarantees both identity preservation and high-level feature transfer without relying on a facial recognition network.

548, TITLE: Detecting and Recovering Sequential DeepFake Manipulation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1347_ECCV_2022_paper.php
AUTHORS: Rui Shao, Tianxing Wu, Ziwei Liu
HIGHLIGHT: This new threat requires us to detect a sequence of facial manipulations, which is vital for both detecting deepfake media and recovering original faces afterwards. Motivated by this observation, we emphasize the need and propose a novel research problem called Detecting Sequential DeepFake Manipulation (Seq-DeepFake).

549, TITLE: Self-Supervised Sparse Representation for Video Anomaly Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1561_ECCV_2022_paper.php
AUTHORS: Jhih-Ciang Wu, He-Yen Hsieh, Ding-Jie Chen, Chiou-Shann Fuh, Tyng-Luh Liu
HIGHLIGHT: To establish a unified approach to solving the two VAD settings, we introduce a self-supervised sparse representation (S3R) framework that models the concept of anomaly at feature level by exploring the synergy between dictionary-based representation and self-supervised learning.

550, TITLE: Watermark Vaccine: Adversarial Attacks to Prevent Watermark Removal
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1616_ECCV_2022_paper.php
AUTHORS: Xinwei Liu, Jian Liu, Yang Bai, Jindong Gu, Tao Chen, Xiaojun Jia, Xiaochun Cao
HIGHLIGHT: Inspired by the vulnerability of DNNs on adversarial perturbations, we propose a novel defence mechanism by adversarial machine learning for good.

551, TITLE: Explaining Deepfake Detection by Analysing Image Matching
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2423_ECCV_2022_paper.php
AUTHORS: Shichao Dong, Jin Wang, Jiajun Liang, Haoqiang Fan, Renhe Ji
HIGHLIGHT: This paper aims to interpret how deepfake detection models learn artifact features of images when just supervised by binary labels.

552, TITLE: FrequencyLowCut Pooling – Plug \&amp Play against Catastrophic Overfitting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3518_ECCV_2022_paper.php
AUTHORS: Julia Grabinski, Steffen Jung, Janis Keuper, Margret Keuper
HIGHLIGHT: Recent work [18] in the context of adversarial attacks and distribution shifts, showed after all, that there is a strong correlation between the vulnerability of CNNs and aliasing artifacts induced by poor down-sampling operations. This paper builds on these findings and introduces an aliasing free down-sampling operation which can easily be plugged into any CNN architecture: FrequencyLowCut pooling.

553, TITLE: TAFIM: Targeted Adversarial Attacks against Facial Image Manipulations
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3731_ECCV_2022_paper.php
AUTHORS: Shivangi Aneja, Lev Markhasin, Matthias Nie&szlig;ner
HIGHLIGHT: To this end, we introduce a novel data-driven approach that produces image-specific perturbations which are embedded in the original images.

554, TITLE: FingerprintNet: Synthesized Fingerprints for Generated Image Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4708_ECCV_2022_paper.php
AUTHORS: Yonghyun Jeong, Doyeon Kim, Youngmin Ro, Pyounggeon Kim, Jongwon Choi
HIGHLIGHT: To overcome this problem, we analyze the distinctive characteristic of the generated images called 'fingerprints,' and propose a new framework to reproduce diverse types of fingerprints generated by various generative models.

555, TITLE: Detecting Generated Images by Real Images
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5017_ECCV_2022_paper.php
AUTHORS: Bo Liu, Fan Yang, Xiuli Bi, Bin Xiao, Weisheng Li, Xinbo Gao

HIGHLIGHT: We observed that the noise pattern of real images exhibits similar characteristics in the frequency domain, while the generated images are far different. Therefore, we can perform image authentication by checking whether an image follows the patterns of authentic images.

556, TITLE: An Information Theoretic Approach for Attention-Driven Face Forgery Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5117_ECCV_2022_paper.php
AUTHORS: Ke Sun, Hong Liu, Taiping Yao, Xiaoshuai Sun, Shen Chen, Shouhong Ding, Rongrong Ji
HIGHLIGHT: Our key observation is that most of the forgery clues are hidden in the informative region, which can be measured quantitatively by classical information maximization theory. Motivated by this, we make the first attempt to introduce the self-information metric to enhance the forgery feature representation.

557, TITLE: Exploring Disentangled Content Information for Face Forgery Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5451_ECCV_2022_paper.php
AUTHORS: Jiahao Liang, Huafeng Shi, Weihong Deng
HIGHLIGHT: We observe that the detector is prone to focus more on content information than artifact traces, suggesting that the detector is sensitive to the intrinsic bias of the dataset, which leads to severe overfitting. Motivated by this key observation, we design an easily embeddable disentanglement framework for content information removal, and further propose a Content Consistency Constraint (C2C) and a Global Representation Contrastive Constraint (GRCC) to enhance the independence of disentangled features.

558, TITLE: RepMix: Representation Mixing for Robust Attribution of Synthesized Images
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5993_ECCV_2022_paper.php
AUTHORS: Tu Bui, Ning Yu, John Collomosse
HIGHLIGHT: Rapid advances in Generative Adversarial Networks (GANs) raise new challenges for image attribution detecting whether an image is synthetic and, if so, determining which GAN architecture created it. Uniquely, we present a solution to this task capable of 1) matching images invariant to their semantic content 2) robust to benign transformations (changes in quality, resolution, shape, etc.) commonly encountered as images are re-shared online.

559, TITLE: Totems: Physical Objects for Verifying Visual Integrity
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6956_ECCV_2022_paper.php
AUTHORS: Jingwei Ma, Lucy Chai, Minyoung Huh, Tongzhou Wang, Ser-Nam Lim, Phillip Isola, Antonio Torralba
HIGHLIGHT: We introduce a new approach to image forensics: placing physical refractive objects, which we call totems, into a scene so as to protect any photograph taken of that scene.

560, TITLE: Dual-Stream Knowledge-Preserving Hashing for Unsupervised Video Retrieval
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1016_ECCV_2022_paper.php
AUTHORS: Pandeng Li, Hongtao Xie, Jiannan Ge, Lei Zhang, Shaobo Min, Yongdong Zhang
HIGHLIGHT: Such reconstruction constraint spends much effort on frame-level temporal context changes without focusing on video-level global semantics that are more useful for retrieval. Hence, we address this problem by decomposing video information into reconstruction-dependent and semantic-dependent information, which disentangles the semantic extraction from reconstruction constraint.

561, TITLE: PASS: Part-Aware Self-Supervised Pre-training for Person Re-identification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1161_ECCV_2022_paper.php
AUTHORS: Kuan Zhu, Haiyun Guo, Tianyi Yan, Yousong Zhu, Jinqiao Wang, Ming Tang
HIGHLIGHT: In this paper, we propose a ReID-specific pre-training method, Part-Aware Self-Supervised pre-training (PASS), which can generate part-level features to offer fine-grained information and is more suitable for ReID.

562, TITLE: Adaptive Cross-Domain Learning for Generalizable Person Re-identification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1198_ECCV_2022_paper.php
AUTHORS: Pengyi Zhang, Huanzhang Dou, Yunlong Yu, Xi Li
HIGHLIGHT: Most existing methods are challenged for dealing with the shared and specific characteristics among different domains, which is called the domain conflict problem. To address this problem, we present an Adaptive Cross-domain Learning (ACL) framework equipped with a CrOss-Domain Embedding Block (CODE-Block) to maintain a common feature space for capturing both the domain-invariant and the domain-specific features, while dynamically mining the relations across different domains.

563, TITLE: Multi-Query Video Retrieval
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1517_ECCV_2022_paper.php
AUTHORS: Zeyu Wang, Yu Wu, Karthik Narasimhan, Olga Russakovsky
HIGHLIGHT: Despite recent progress, imperfect annotations in existing video retrieval datasets have posed significant challenges on model evaluation and development. In this paper, we tackle this issue by focusing on the less-studied setting of multi-query video retrieval, where multiple descriptions are provided to the model for searching over the video archive.

564, TITLE: Hierarchical Average Precision Training for Pertinent Image Retrieval
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2061_ECCV_2022_paper.php
AUTHORS: Elias Ramzi, Nicolas Audebert, Nicolas Thome, Clément Rambour, Xavier Bitot
HIGHLIGHT: This paper introduces a new hierarchical AP training method for pertinent image retrieval (HAPPIER).

565, TITLE: Learning Semantic Correspondence with Sparse Annotations
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2609_ECCV_2022_paper.php

AUTHORS:        Shuaiyi Huang, Luyu Yang, Bo He, Songyang Zhang, Xuming He, Abhinav Shrivastava
HIGHLIGHT:        In this paper, we aim to address the challenge of label sparsity in semantic correspondence by enriching supervision signals from sparse keypoint annotations.

566, TITLE:        Dynamically Transformed Instance Normalization Network for Generalizable Person Re-identification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2766_ECCV_2022_paper.php
AUTHORS:        Bingliang Jiao, Lingqiao Liu, Liying Gao, Guosheng Lin, Lu Yang, Shizhou Zhang, Peng Wang, Yanning Zhang
HIGHLIGHT:        In this work, we propose a new normalization scheme called Dynamically Transformed Instance Normalization (DTIN) to alleviate the drawback of IN.

567, TITLE:        Domain Adaptive Person Search
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3187_ECCV_2022_paper.php
AUTHORS:        Junjie Li, Yichao Yan, Guanshuo Wang, Fufu Yu, Qiong Jia, Shouhong Ding
HIGHLIGHT:        In this paper, we take a further step and present Domain Adaptive Person Search (DAPS), which aims to generalize the model from a labeled source domain to the unlabeled target domain.

568, TITLE:        TS2-Net: Token Shift and Selection Transformer for Text-Video Retrieval
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3289_ECCV_2022_paper.php
AUTHORS:        Yuqi Liu, Pengfei Xiong, Luhui Xu, Shengming Cao, Qin Jin
HIGHLIGHT:        In this paper, we propose Token Shift and Selection Network (TS2-Net), a novel token shift and selection transformer architecture, which dynamically adjusts the token sequence and selects informative tokens in both temporal and spatial dimensions from input video samples.

569, TITLE:        Unstructured Feature Decoupling for Vehicle Re-identification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3314_ECCV_2022_paper.php
AUTHORS:        Wen Qian, Hao Luo, Silong Peng, Fan Wang, Chen Chen, Hao Li
HIGHLIGHT:        To align the features without requirements of additional annotation, this paper proposes a Unstructured Feature Decoupling Network (UFDN), which consists of a transformer-based feature decomposing head (TDH) and a novel cluster-based decoupling constraint (CDC).

570, TITLE:        Deep Hash Distillation for Image Retrieval
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3342_ECCV_2022_paper.php
AUTHORS:        Young Kyun Jang, Geonmo Gu, Byungsoo Ko, Isaac Kang, Nam Ik Cho
HIGHLIGHT:        In this work, we propose a novel self-distilled hashing scheme to minimize the discrepancy while exploiting the potential of augmented data.

571, TITLE:        Mimic Embedding via Adaptive Aggregation: Learning Generalizable Person Re-identification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3409_ECCV_2022_paper.php
AUTHORS:        Boqiang Xu, Jian Liang, Lingxiao He, Zhenan Sun
HIGHLIGHT:        To handle the two issues above, this paper presents a new approach called Mimic Embedding via adapTive Aggregation (META) for DG person ReID.

572, TITLE:        Granularity-Aware Adaptation for Image Retrieval over Multiple Tasks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3760_ECCV_2022_paper.php
AUTHORS:        Jon Almazán, Byungsoo Ko, Geonmo Gu, Diane Larlus, Yannis Kalantidis
HIGHLIGHT:        We address it with the proposed Grappa, an approach that starts from a strong pretrained model, and adapts it to tackle multiple retrieval tasks concurrently, using only unlabeled images from the different task domains.

573, TITLE:        Learning Audio-Video Modalities from Image Captions
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4217_ECCV_2022_paper.php
AUTHORS:        Arsha Nagrani, Paul Hongsuck Seo, Bryan Seybold, Anja Hauth, Santiago Manen, Chen Sun, Cordelia Schmid
HIGHLIGHT:        Obtaining large-scale, high quality data for video in the form of text-video and text-audio pairs however, is more challenging. To close this gap we propose a new video mining pipeline which involves transferring captions from image captioning datasets to video clips with no additional manual effort.

574, TITLE:        RVSL: Robust Vehicle Similarity Learning in Real Hazy Scenes Based on Semi-Supervised Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4395_ECCV_2022_paper.php
AUTHORS:        Wei-Ting Chen, I-Hsiang Chen, Chih-Yuan Yeh, Hao-Hsiang Yang, Hua-En Chang, Jian-Jiun Ding, Sy-Yen Kuo
HIGHLIGHT:        Though some strategies are possible to resolve this problem, they still have room to be improved due to the limited performance in real-world scenarios and the lack of real-world clear ground truth. Thus, to resolve this problem, inspired by CycleGAN, we construct a training paradigm called \textbf{RVSL} which integrates ReID and domain transformation techniques.

575, TITLE:        Lightweight Attentional Feature Fusion: A New Baseline for Text-to-Video Retrieval
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4413_ECCV_2022_paper.php
AUTHORS:        Fan Hu, Aozhu Chen, Ziyue Wang, Fangming Zhou, Jianfeng Dong, Xirong Li
HIGHLIGHT:        In this paper we revisit feature fusion, an old-fashioned topic, in the new context of text-to-video retrieval.

576, TITLE:	Modality Synergy Complement Learning with Cascaded Aggregation for Visible-Infrared Person Re-identification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4495_ECCV_2022_paper.php
AUTHORS:	Yiyuan Zhang, Sanyuan Zhao, Yuhao Kang, Jianbing Shen
HIGHLIGHT:	Differently, this paper proposes a novel framework, named Modality Synergy Complement Learning Network (MSCLNet) with Cascaded Aggregation.

577, TITLE:	Cross-Modality Transformer for Visible-Infrared Person Re-identification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4836_ECCV_2022_paper.php
AUTHORS:	Kongzhu Jiang, Tianzhu Zhang, Xiang Liu, Bingqiao Qian, Yongdong Zhang, Feng Wu
HIGHLIGHT:	However, these methods usually damage the modality-specific information and identification information contained in the features. To alleviate the above issues, we propose a novel Cross-Modality Transformer (CMT) to jointly explore a modality-level alignment module and an instance-level module for VI-ReID.

578, TITLE:	Audio-Visual Mismatch-Aware Video Retrieval via Association and Adjustment
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5034_ECCV_2022_paper.php
AUTHORS:	Sangmin Lee, Sungjune Park, Yong Man Ro
HIGHLIGHT:	Mismatch condition can be categorized into two cases: (i) Audio itself does not exist, (ii) Audio exists but does not match with visual. To deal with (i), we introduce audio-visual associative memory (AVA-Memory) to associate audio cues even from videos without audio data. The associated audio cues can guide the video embedding feature to be aware of audio information even in the missing audio condition. To address (ii), we propose audio embedding adjustment by considering the degree of matching between visual and audio data.

579, TITLE:	Connecting Compression Spaces with Transformer for Approximate Nearest Neighbor Search
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5377_ECCV_2022_paper.php
AUTHORS:	Haokui Zhang, Buzhou Tang, Wenze Hu, Xiaoyu Wang
HIGHLIGHT:	We propose a generic feature compression method for Approximate Nearest Neighbor Search (ANNS) problems, which speeds up existing ANNS methods in a plug-and-play manner.

580, TITLE:	SEMICON: A Learning-to-Hash Solution for Large-Scale Fine-Grained Image Retrieval
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5964_ECCV_2022_paper.php
AUTHORS:	Yang Shen, Xuhao Sun, Xiu-Shen Wei, Qing-Yuan Jiang, Jian Yang
HIGHLIGHT:	In this paper, we propose Suppression-Enhancing Mask based attention and Interactive Channel transformatiON (SEMICON) to learn binary hash codes for dealing with large-scale fine-grained image retrieval tasks.

581, TITLE:	CAViT: Contextual Alignment Vision Transformer for Video Object Re-identification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6694_ECCV_2022_paper.php
AUTHORS:	Jinlin Wu, Lingxiao He, Wu Liu, Yang Yang, Zhen Lei, Tao Mei, Stan Z. Li
HIGHLIGHT:	However, there are dilemmas within existing approaches: (1) 3D solutions model the spatio-temporal interaction but are often troubled with the misalignment of adjacent frames, and (2) 2D solutions adopt a divide-and-conquer strategy against the misalignment but cannot take advantage of the spatio-temporal interactions. To address the above problems, we propose a Contextual Alignment Vision Transformer (\textbf{CAViT}) to the spatio-temporal interaction with a 2D solution.

582, TITLE:	Text-Based Temporal Localization of Novel Events
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7667_ECCV_2022_paper.php
AUTHORS:	Sudipta Paul, Niluthpol Chowdhury Mithun, Amit K. Roy-Chowdhury
HIGHLIGHT:	Moreover, acquiring videos and text comprising all possible scenarios for training is not practical. In this regard, this paper introduces and tackles the problem of text-based temporal localization of novel/unseen events.

583, TITLE:	Reliability-Aware Prediction via Uncertainty Learning for Person Image Retrieval
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7694_ECCV_2022_paper.php
AUTHORS:	Zhaopeng Dou, Zhongdao Wang, Weihua Chen, Yali Li, Shengjin Wang
HIGHLIGHT:	However, they rarely describe the reliability of the prediction. In this paper, we propose an Uncertainty-Aware Learning (UAL) method to remedy this issue.

584, TITLE:	Relighting4D: Neural Relightable Human from Videos
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/34_ECCV_2022_paper.php
AUTHORS:	Zhaoxi Chen, Ziwei Liu
HIGHLIGHT:	In this work, we propose a principled framework, Relighting4D, that enables free-viewpoints relighting from only human videos under unknown illuminations.

585, TITLE:	Real-Time Intermediate Flow Estimation for Video Frame Interpolation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/95_ECCV_2022_paper.php
AUTHORS:	Zhewei Huang, Tianyuan Zhang, Wen Heng, Boxin Shi, Shuchang Zhou
HIGHLIGHT:	We propose RIFE, a Real-time Intermediate Flow Estimation algorithm for VFI.

586, TITLE:	PixelFolder: An Efficient Progressive Pixel Synthesis Network for Image Generation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/103_ECCV_2022_paper.php
AUTHORS:	Jing He, Yiyi Zhou, Qi Zhang, Jun Peng, Yunhang Shen, Xiaoshuai Sun, Chao Chen, Rongrong Ji

HIGHLIGHT: In this paper, we propose a progressive pixel synthesis network towards efficient image generation, coined as PixelFolder.

587, TITLE: StyleSwap: Style-Based Generator Empowers Robust Face Swapping
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/247_ECCV_2022_paper.php
AUTHORS: Zhiliang Xu, Hang Zhou, Zhibin Hong, Ziwei Liu, Jiaming Liu, Zhizhi Guo, Junyu Han, Jingtuo Liu, Errui Ding, Jingdong Wang
HIGHLIGHT: In this work, we introduce a concise and effective framework named StyleSwap.

588, TITLE: Paint2Pix: Interactive Painting Based Progressive Image Synthesis and Editing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/291_ECCV_2022_paper.php
AUTHORS: Jaskirat Singh, Liang Zheng, Cameron Smith, Jose Echevarria
HIGHLIGHT: In this paper, for the first time we study the problem of photorealistic image synthesis from incomplete and primitive human paintings.

589, TITLE: FurryGAN: High Quality Foreground-Aware Image Synthesis
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/408_ECCV_2022_paper.php
AUTHORS: Jeongmin Bae, Mingi Kwon, Youngjung Uh
HIGHLIGHT: We present FurryGAN with three key components: 1) imposing both the foreground image and the composite image to be realistic, 2) designing a mask as a combination of coarse and fine masks, and 3) guiding the generator by an auxiliary mask predictor in the discriminator.

590, TITLE: SCAM! Transferring Humans between Images with Semantic Cross Attention Modulation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/575_ECCV_2022_paper.php
AUTHORS: Nicolas Dufour, David Picard, Vicky Kalogeiton
HIGHLIGHT: In this work, we introduce SCAM (Semantic Cross Attention Modulation), a system that encodes rich and diverse information in each semantic region of the image (including foreground and background), thus achieving precise generation with emphasis on fine details.

591, TITLE: Sem2NeRF: Converting Single-View Semantic Masks to Neural Radiance Fields
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/636_ECCV_2022_paper.php
AUTHORS: Yuedong Chen, Qianyi Wu, Chuanxia Zheng, Tat-Jen Cham, Jianfei Cai
HIGHLIGHT: In light of recent advances in NeRF-based 3D-aware generative models, we introduce a new task, Semantic-to-NeRF translation, that aims to reconstruct a 3D scene modelled by NeRF, conditioned on one single-view semantic mask as input. To kick-off this novel task, we propose the Sem2NeRF framework.

592, TITLE: WaveGAN: Frequency-Aware GAN for High-Fidelity Few-Shot Image Generation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/641_ECCV_2022_paper.php
AUTHORS: Mengping Yang, Zhe Wang, Ziqiu Chi, Wenyi Feng
HIGHLIGHT: However, previous approaches struggle to synthesize high-frequency signals with fine details, deteriorating the synthesis quality. To address this, we propose WaveGAN, a frequency-aware model for few-shot image generation.

593, TITLE: End-to-End Visual Editing with a Generatively Pre-trained Artist
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/841_ECCV_2022_paper.php
AUTHORS: Andrew Brown, Cheng-Yang Fu, Omkar Parkhi, Tamara L. Berg, Andrea Vedaldi
HIGHLIGHT: To this end, we propose a self-supervised approach that simulates edits by augmenting off-the-shelf images in a target domain.

594, TITLE: High-Fidelity GAN Inversion with Padding Space
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/877_ECCV_2022_paper.php
AUTHORS: Qingyan Bai, Yinghao Xu, Jiapeng Zhu, Weihao Xia, Yujiu Yang, Yujun Shen
HIGHLIGHT: In this work, we propose to involve the padding space of the generator to complement the latent space with spatial information.

595, TITLE: Designing One Unified Framework for High-Fidelity Face Reenactment and Swapping
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/913_ECCV_2022_paper.php
AUTHORS: Chao Xu, Jiangning Zhang, Yue Han, Guanzhong Tian, Xianfang Zeng, Ying Tai, Yabiao Wang, Chengjie Wang, Yong Liu
HIGHLIGHT: In this paper, we propose an effective end-to-end unified framework to achieve both tasks.

596, TITLE: Sobolev Training for Implicit Neural Representations with Approximated Image Derivatives
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/979_ECCV_2022_paper.php
AUTHORS: Wentao Yuan, Qingtian Zhu, Xiangyue Liu, Yikang Ding, Haotian Zhang, Chi Zhang
HIGHLIGHT: In this paper, we propose a training paradigm for INRs whose target output is image pixels, to encode image derivatives in addition to image values in the neural network.

597, TITLE: Make-a-Scene: Scene-Based Text-to-Image Generation with Human Priors
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/993_ECCV_2022_paper.php
AUTHORS: Oran Gafni, Adam Polyak, Oron Ashual, Shelly Sheynin, Devi Parikh, Yaniv Taigman

HIGHLIGHT: While these methods have incrementally improved the generated image fidelity and text relevancy, several pivotal gaps remain unanswered, limiting applicability and quality. We propose a novel text-to-image method that addresses these gaps by (i) enabling a simple control mechanism complementary to text in the form of a scene, (ii) introducing elements that substantially improve the tokenization process by employing domain-specific knowledge over key image regions (faces and salient objects), and (iii) adapting classifier-free guidance for the transformer use case.

598, TITLE: 3D-FM GAN: Towards 3D-Controllable Face Manipulation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1060_ECCV_2022_paper.php
AUTHORS: Yuchen Liu, Zhixin Shu, Yijun Li, Zhe Lin, Richard Zhang, S.Y. Kung
HIGHLIGHT: While concatenating GAN inversion and a 3D-aware, noise-to-image GAN is a straight-forward solution, it is inefficient and may lead to noticeable drop in editing quality. To fill this gap, we propose 3D-FM GAN, a novel conditional GAN framework designed specifically for 3D-controllable Face Manipulation, and does not require any tuning after the end-to-end learning phase.

599, TITLE: Multi-Curve Translator for High-Resolution Photorealistic Image Translation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1278_ECCV_2022_paper.php
AUTHORS: Yuda Song, Hui Qian, Xin Du
HIGHLIGHT: To this end, we present the Multi-Curve Translator (MCT), which not only predicts the translated pixels for the corresponding input pixels but also for their neighboring pixels.

600, TITLE: Deep Bayesian Video Frame Interpolation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1287_ECCV_2022_paper.php
AUTHORS: Zhiyang Yu, Yu Zhang, Xujie Xiang, Dongqing Zou, Xijun Chen, Jimmy S. Ren
HIGHLIGHT: We present deep Bayesian video frame interpolation, a novel approach for upsampling a low frame-rate video temporally to its higher frame-rate counterpart.

601, TITLE: Cross Attention Based Style Distribution for Controllable Person Image Synthesis
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1312_ECCV_2022_paper.php
AUTHORS: Xinyue Zhou, Mingyu Yin, Xinyuan Chen, Li Sun, Changxin Gao, Qingli Li
HIGHLIGHT: In this paper, we propose a cross attention based style distribution module that computes between the source semantic styles and target pose for pose transfer.

602, TITLE: KeypointNeRF: Generalizing Image-Based Volumetric Avatars Using Relative Spatial Encoding of Keypoints
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1322_ECCV_2022_paper.php
AUTHORS: Marko Mihajlovic, Aayush Bansal, Michael Zollh&ouml;fer, Siyu Tang, Shunsuke Saito
HIGHLIGHT: In this work, we investigate common issues with existing spatial encodings and propose a simple yet highly effective approach to modeling high-fidelity volumetric avatars from sparse views.

603, TITLE: ViewFormer: NeRF-Free Neural Rendering from Few Images Using Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1417_ECCV_2022_paper.php
AUTHORS: Jon&aacute;š Kulh&aacute;nek, Erik Derner, Torsten Sattler, Robert Babuška
HIGHLIGHT: We propose a 2D-only method that maps multiple context views and a query pose to a new image in a single pass of a neural network.

604, TITLE: L-Tracing: Fast Light Visibility Estimation on Neural Surfaces by Sphere Tracing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1421_ECCV_2022_paper.php
AUTHORS: Ziyu Chen, Chenjing Ding, Jianfei Guo, Dongliang Wang, Yikang Li, Xuan Xiao, Wei Wu, Li Song
HIGHLIGHT: We introduce a highly efficient light visibility estimation method, called L-Tracing, for reflectance factorization on neural implicit surfaces.

605, TITLE: A Perceptual Quality Metric for Video Frame Interpolation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1542_ECCV_2022_paper.php
AUTHORS: Qiqi Hou, Abhijay Ghildyal, Feng Liu
HIGHLIGHT: In this paper, we present a dedicated perceptual quality metric for measuring video frame interpolation results.To train our metric, we collected a new video frame interpolation quality assessment dataset.

606, TITLE: Adaptive Feature Interpolation for Low-Shot Image Generation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1543_ECCV_2022_paper.php
AUTHORS: Mengyu Dai, Haibin Hang, Xiaoyang Guo
HIGHLIGHT: Training of generative models especially Generative Adversarial Networks can easily diverge in low-data setting. To mitigate this issue, we propose a novel implicit data augmentation approach which facilitates stable training and synthesize high-quality samples without need of label information.

607, TITLE: PalGAN: Image Colorization with Palette Generative Adversarial Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1677_ECCV_2022_paper.php
AUTHORS: Yi Wang, Menghan Xia, Lu Qi, Jing Shao, Yu Qiao
HIGHLIGHT: Multimodal ambiguity and color bleeding remain challenging in colorization. To tackle these problems, we propose a new GAN-based colorization approach PalGAN, integrated with palette estimation and chromatic attention.

608, TITLE: Fast-Vid2Vid: Spatial-Temporal Compression for Video-to-Video Synthesis

http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1687_ECCV_2022_paper.php
AUTHORS:          Long Zhuo, Guangcong Wang, Shikai Li, Wayne Wu, Ziwei Liu
HIGHLIGHT:          In this paper, we present a spatial-temporal compression framework, Fast-Vid2Vid, which focuses on data aspects of generative models.

609, TITLE:          Learning Prior Feature and Attention Enhanced Image Inpainting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1721_ECCV_2022_paper.php
AUTHORS:          Chenjie Cao, Qiaole Dong, Yanwei Fu
HIGHLIGHT:          To this end, this paper incorporates the pre-training based Masked AutoEncoder (MAE) into the inpainting model, which enjoys richer informative priors to enhance the inpainting process.

610, TITLE:          Temporal-MPI: Enabling Multi-Plane Images for Dynamic Scene Modelling via Temporal Basis Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1744_ECCV_2022_paper.php
AUTHORS:          Wenpeng Xing, Jie Chen
HIGHLIGHT:          In this paper, we propose a novel Temporal-MPI representation which is able to encode the rich 3D and dynamic variation information throughout the entire video as compact temporal basis and coefficients jointly learned.

611, TITLE:          3D-Aware Semantic-Guided Generative Model for Human Synthesis
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2039_ECCV_2022_paper.php
AUTHORS:          Jichao Zhang, Enver Sangineto, Hao Tang, Aliaksandr Siarohin, Zhun Zhong, Nicu Sebe, Wei Wang
HIGHLIGHT:          This paper proposes a 3D-aware Semantic-Guided Generative Model (3D-SGAN) for human image synthesis, which combines a GNeRF with a texture generator.

612, TITLE:          Temporally Consistent Semantic Video Editing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2146_ECCV_2022_paper.php
AUTHORS:          Yiran Xu, Badour AlBahar, Jia-Bin Huang
HIGHLIGHT:          We present a simple yet effective method to facilitate temporally coherent video editing.

613, TITLE:          Error Compensation Framework for Flow-Guided Video Inpainting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2166_ECCV_2022_paper.php
AUTHORS:          Jaeyeon Kang, Seoung Wug Oh, Seon Joo Kim
HIGHLIGHT:          To this end, we propose an Error Compensation Framework for Flow-guided Video Inpainting (ECFVI), which takes advantage of the flow-based method and offsets its weaknesses.In addition, we present a new benchmark dataset for evaluation by supplementing the weaknesses of existing test datasets.

614, TITLE:          Scraping Textures from Natural Images for Synthesis and Editing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2180_ECCV_2022_paper.php
AUTHORS:          Xueting Li, Xiaolong Wang, Ming-Hsuan Yang, Alexei A. Efros, Sifei Liu
HIGHLIGHT:          This paper aims to scrape textures directly from natural images of everyday objects and scenes, build texture models, and employ them for texture synthesis, texture editing, etc.

615, TITLE:          Single Stage Virtual Try-On via Deformable Attention Flows
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2221_ECCV_2022_paper.php
AUTHORS:          Shuai Bai, Huiling Zhou, Zhikang Li, Chang Zhou, Hongxia Yang
HIGHLIGHT:          Existing methods usually build up multi-stage frameworks to deal with clothes warping and body blending respectively, or rely heavily on intermediate parser-based labels which may be noisy or even inaccurate. To solve the above challenges, we propose a single-stage try-on framework by developing a novel Deformable Attention Flow (DAFlow), which applies the deformable attention scheme to multi-flow estimation.

616, TITLE:          Improving GANs for Long-Tailed Data through Group Spectral Regularization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2334_ECCV_2022_paper.php
AUTHORS:          Harsh Rangwani, Naman Jaswani, Tejan Karmali, Varun Jampani, R. Venkatesh Babu
HIGHLIGHT:          In contrast, we aim to train conditional Generative Adversarial Networks, a class of image generation models on long-tailed distributions.

617, TITLE:          Hierarchical Semantic Regularization of Latent Spaces in StyleGANs
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2336_ECCV_2022_paper.php
AUTHORS:          Tejan Karmali, Rishubh Parihar, Susmit Agrawal, Harsh Rangwani, Varun Jampani, Maneesh Singh, R. Venkatesh Babu
HIGHLIGHT:          In this work, we propose a Hierarchical Semantic Regularizer (HSR) which aligns the hierarchical representations learnt by the generator to corresponding powerful features learnt by pretrained networks on large amounts of data.

618, TITLE:          IntereStyle: Encoding an Interest Region for Robust StyleGAN Inversion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2350_ECCV_2022_paper.php
AUTHORS:          Seung-Jun Moon, Gyeong-Moon Park
HIGHLIGHT:          In this paper, we point out that the existing encoders try to lower the distortion not only on the interest region, e.g., human facial region but also on the uninterest region, e.g., background patterns and obstacles.

619, TITLE:          StyleLight: HDR Panorama Generation for Lighting Estimation and Editing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2378_ECCV_2022_paper.php

AUTHORS: Guangcong Wang, Yinuo Yang, Chen Change Loy, Ziwei Liu
HIGHLIGHT: We present a new lighting estimation and editing framework to generate high-dynamic-range (HDR) indoor panorama lighting from a single limited field-of-view (LFOV) image captured by low-dynamic-range (LDR) cameras.

620, TITLE: Contrastive Monotonic Pixel-Level Modulation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2526_ECCV_2022_paper.php
AUTHORS: Kun Lu, Rongpeng Li, Honggang Zhang
HIGHLIGHT: In this paper, we present a new formulation called MonoPix, an unsupervised and contrastive continuous modulation model, and take a step further to enable a pixel-level spatial control which is critical but can not be properly handled previously.

621, TITLE: Learning Cross-Video Neural Representations for High-Quality Frame Interpolation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2565_ECCV_2022_paper.php
AUTHORS: Wentao Shangguan, Yu Sun, Weijie Gan, Ulugbek S. Kamilov
HIGHLIGHT: We propose Cross-Video Neural Representation (CURE) as the first video interpolation method based on neural fields (NF).

622, TITLE: Learning Continuous Implicit Representation for Near-Periodic Patterns
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2589_ECCV_2022_paper.php
AUTHORS: Bowei Chen, Tiancheng Zhi, Martial Hebert, Srinivasa G. Narasimhan
HIGHLIGHT: To further improve the robustness, we introduce a periodicity proposal module to search and use multiple candidate periodicities in our pipeline.

623, TITLE: End-to-End Graph-Constrained Vectorized Floorplan Generation with Panoptic Refinement
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2645_ECCV_2022_paper.php
AUTHORS: Jiachen Liu, Yuan Xue, Jose Duarte, Krishnendra Shekhawat, Zihan Zhou, Xiaolei Huang
HIGHLIGHT: In this paper, we aim to synthesize floorplans as sequences of 1-D vectors, which eases user interaction and design customization.

624, TITLE: Few-Shot Image Generation with Mixup-Based Distance Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2709_ECCV_2022_paper.php
AUTHORS: Chaerin Kong, Jeesoo Kim, Donghoon Han, Nojun Kwak
HIGHLIGHT: In this work, we consider a challenging task of pretraining-free few-shot image synthesis, and seek to train existing generative models with minimal overfitting and mode collapse.

625, TITLE: A Style-Based GAN Encoder for High Fidelity Reconstruction of Images and Videos
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2740_ECCV_2022_paper.php
AUTHORS: Xu Yao, Alasdair Newson, Yann Gousseau, Pierre Hellier
HIGHLIGHT: We present a new encoder architecture for GAN inversion.

626, TITLE: FakeCLR: Exploring Contrastive Learning for Solving Latent Discontinuity in Data-Efficient GANs
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2798_ECCV_2022_paper.php
AUTHORS: Ziqiang Li, Chaoyue Wang, Heliang Zheng, Jing Zhang, Bin Li
HIGHLIGHT: In this paper, we revisit and compare different contrastive learning strategies in DE-GANs, and identify (i) the current bottleneck of generative performance is the discontinuity of latent space (ii) compared to other contrastive learning strategies, Instance-perturbation works towards latent space continuity, which brings the major improvement to DE-GANs.

627, TITLE: BlobGAN: Spatially Disentangled Scene Representations
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2863_ECCV_2022_paper.php
AUTHORS: Dave Epstein, Taesung Park, Richard Zhang, Eli Shechtman, Alexei A. Efros
HIGHLIGHT: We propose an unsupervised, mid-level representation for a generative model of scenes.

628, TITLE: Unified Implicit Neural Stylization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2900_ECCV_2022_paper.php
AUTHORS: Zhiwen Fan, Yifan Jiang, Peihao Wang, Xinyu Gong, Dejia Xu, Zhangyang Wang
HIGHLIGHT: To regularize the geometry in 3D scenes, we propose a novel self-distillation geometry consistency loss which preserves the geometry fidelity of the stylized scenes.

629, TITLE: GAN with Multivariate Disentangling for Controllable Hair Editing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3167_ECCV_2022_paper.php
AUTHORS: Xuyang Guo, Meina Kan, Tianle Chen, Shiguang Shan
HIGHLIGHT: Going a further step, we propose an efficiently controllable method that can provide a set of sliding bars to do continuous and fine hair editing.

630, TITLE: Discovering Transferable Forensic Features for CNN-Generated Images Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3181_ECCV_2022_paper.php
AUTHORS: Keshigeyan Chandrasegaran, Ngoc-Trung Tran, Alexander Binder, Ngai-Man Cheung
HIGHLIGHT: In this work, we conduct the first analytical study to discover and understand T-FF in universal detectors.

631, TITLE: Harmonizer: Learning to Perform White-Box Image and Video Harmonization

http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3203_ECCV_2022_paper.php
AUTHORS: Zhanghan Ke, Chunyi Sun, Lei Zhu, Ke Xu, Rynson W.H. Lau
HIGHLIGHT: In this work, we observe that adjusting the input arguments of basic image filters, e.g., brightness and contrast, is sufficient for humans to produce realistic images from the composite ones.

632, TITLE: Text2LIVE: Text-Driven Layered Image and Video Editing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3228_ECCV_2022_paper.php
AUTHORS: Omer Bar-Tal, Dolev Ofri-Amar, Rafail Fridman, Yoni Kasten, Tali Dekel
HIGHLIGHT: We present a method for zero-shot, text-driven editing of natural images and videos.

633, TITLE: Digging into Radiance Grid for Real-Time View Synthesis with Detail Preservation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3346_ECCV_2022_paper.php
AUTHORS: Jian Zhang, Jinchi Huang, Bowen Cai, Huan Fu, Mingming Gong, Chaohui Wang, Jiaming Wang, Hongchen Luo, Rongfei Jia, Binqiang Zhao, Xing Tang
HIGHLIGHT: In this paper, we dig into the Radiance Grid representation and present a set of improvements, which together result in boosted performance in terms of both speed and quality.

634, TITLE: StyleGAN-Human: A Data-Centric Odyssey of Human Generation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3366_ECCV_2022_paper.php
AUTHORS: Jianglin Fu, Shikai Li, Yuming Jiang, Kwan-Yee Lin, Chen Qian, Chen Change Loy, Wayne Wu, Ziwei Liu
HIGHLIGHT: This work takes a data-centric perspective and investigates multiple critical aspects in "data engineering", which we believe would complement the current practice.

635, TITLE: ColorFormer: Image Colorization via Color Memory Assisted Hybrid-Attention Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3385_ECCV_2022_paper.php
AUTHORS: Xiaozhong Ji, Boyuan Jiang, Donghao Luo, Guangpin Tao, Wenqing Chu, Zhifeng Xie, Chengjie Wang, Ying Tai
HIGHLIGHT: In this work, we propose an automatic image colorization method via color memory assisted hybrid-attention transformer, namely ColorFormer.

636, TITLE: EAGAN: Efficient Two-Stage Evolutionary Architecture Search for GANs
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3419_ECCV_2022_paper.php
AUTHORS: Guohao Ying, Xin He, Bin Gao, Bo Han, Xiaowen Chu
HIGHLIGHT: To alleviate the instability, we propose an efficient two-stage evolutionary algorithm-based NAS framework to search GANs, namely EAGAN.

637, TITLE: Weakly-Supervised Stitching Network for Real-World Panoramic Image Generation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3500_ECCV_2022_paper.php
AUTHORS: Dae-Young Song, Geonsoo Lee, HeeKyung Lee, Gi-Mun Um, Donghyeon Cho
HIGHLIGHT: However, the most challenging point in deep learning-based stitching is to obtain pairs of input images with a narrow field of view and ground truth images with a wide field of view captured from real-world scenes. To overcome this difficulty, we develop a weakly-supervised learning mechanism to train the stitching model without requiring genuine ground truth images.

638, TITLE: DynaST: Dynamic Sparse Transformer for Exemplar-Guided Image Generation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3511_ECCV_2022_paper.php
AUTHORS: Songhua Liu, Jingwen Ye, Sucheng Ren, Xinchao Wang
HIGHLIGHT: In this paper, we propose a dynamic sparse attention based Transformer model, termed Dynamic Sparse Transformer (DynaST), to achieve fine-level matching with favorable efficiency.

639, TITLE: Multimodal Conditional Image Synthesis with Product-of-Experts GANs
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3539_ECCV_2022_paper.php
AUTHORS: Xun Huang, Arun Mallya, Ting-Chun Wang, Ming-Yu Liu
HIGHLIGHT: This reduces their practicality as multimodal inputs are more expressive and complement each other. To address this limitation, we propose the Product-of-Experts Generative Adversarial Networks (PoE-GAN) framework, which can synthesize images conditioned on multiple input modalities or any subset of them, even the empty set.

640, TITLE: Auto-Regressive Image Synthesis with Integrated Quantization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3586_ECCV_2022_paper.php
AUTHORS: Fangneng Zhan, Yingchen Yu, Rongliang Wu, Jiahui Zhang, Kaiwen Cui, Changgong Zhang, Shijian Lu
HIGHLIGHT: This paper presents a versatile framework for conditional image generation which incorporates the inductive bias of CNNs and powerful sequence modeling of auto-regression that naturally leads to diverse image generation.

641, TITLE: JoJoGAN: One Shot Face Stylization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3623_ECCV_2022_paper.php
AUTHORS: Min Jin Chong, David Forsyth
HIGHLIGHT: This paper describes a simple procedure -- JoJoGAN -- to learn a style mapper from a single example of the style.

642, TITLE: VecGAN: Image-to-Image Translation with Interpretable Latent Directions
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3685_ECCV_2022_paper.php

AUTHORS:　　　　Yusuf Dalva, Said Fahri Alt?ndi?, Aysegul Dundar
HIGHLIGHT:　　　　We propose VecGAN, an image-to-image translation framework for facial attribute editing with interpretable latent directions.

643, TITLE:　　　　Any-Resolution Training for High-Resolution Image Synthesis
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3693_ECCV_2022_paper.php
AUTHORS:　　　　Lucy Chai, Micha&euml;l Gharbi, Eli Shechtman, Phillip Isola, Richard Zhang
HIGHLIGHT:　　　　To take advantage of varied-size data, we introduce continuous-scale training, a process that samples patches at random scales to train a new generator with variable output resolutions.

644, TITLE:　　　　CCPL: Contrastive Coherence Preserving Loss for Versatile Style Transfer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3887_ECCV_2022_paper.php
AUTHORS:　　　　Zijie Wu, Zhen Zhu, Junping Du, Xiang Bai
HIGHLIGHT:　　　　In this paper, we aim to devise a universally versatile style transfer method capable of performing artistic, photo-realistic, and video style transfer jointly, without seeing videos during training.

645, TITLE:　　　　CANF-VC: Conditional Augmented Normalizing Flows for Video Compression
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3904_ECCV_2022_paper.php
AUTHORS:　　　　Yung-Han Ho, Chih-Peng Chang, Peng-Yu Chen, Alessandro Gnutti, Wen-Hsiao Peng
HIGHLIGHT:　　　　This paper presents an end-to-end learning-based video compression system, termed CANF-VC, based on conditional augmented normalizing flows (CANF).

646, TITLE:　　　　Bi-Level Feature Alignment for Versatile Image Translation and Manipulation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3912_ECCV_2022_paper.php
AUTHORS:　　　　Fangneng Zhan, Yingchen Yu, Rongliang Wu, Jiahui Zhang, Kaiwen Cui, Aoran Xiao, Shijian Lu, Chunyan Miao
HIGHLIGHT:　　　　This paper presents a versatile image translation and manipulation framework that achieves accurate semantic and style guidance in image generation by explicitly building a correspondence.

647, TITLE:　　　　High-Fidelity Image Inpainting with GAN Inversion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4018_ECCV_2022_paper.php
AUTHORS:　　　　Yongsheng Yu, Libo Zhang, Heng Fan, Tiejian Luo
HIGHLIGHT:　　　　Nevertheless, the ignorance of hard constraint in these algorithms may yield the gap between GAN inversion and image inpainting. Addressing this problem, in this paper we devise a novel GAN inversion model for image inpainting, dubbed {\it InvertFill}, mainly consisting of an encoder with a pre-modulation module and a GAN generator with F&ampW+ latent space.

648, TITLE:　　　　DeltaGAN: Towards Diverse Few-Shot Image Generation with Sample-Specific Delta
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4032_ECCV_2022_paper.php
AUTHORS:　　　　Yan Hong, Li Niu, Jianfu Zhang, Liqing Zhang
HIGHLIGHT:　　　　In this work, we propose a novel Delta Generative Adversarial Network (DeltaGAN), which consists of a reconstruction subnetwork and a generation subnetwork.

649, TITLE:　　　　Image Inpainting with Cascaded Modulation GAN and Object-Aware Training
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4222_ECCV_2022_paper.php
AUTHORS:　　　　Haitian Zheng, Zhe Lin, Jingwan Lu, Scott Cohen, Eli Shechtman, Connelly Barnes, Jianming Zhang, Ning Xu, Sohrab Amirghodsi, Jiebo Luo
HIGHLIGHT:　　　　We propose cascaded modulation GAN (CM-GAN), a new network design consisting of an encoder with Fourier convolution blocks that extract multi-scale feature representations from the input image with holes and a dual-stream decoder with a novel cascaded global-spatial modulation block at each scale level.

650, TITLE:　　　　StyleFace: Towards Identity-Disentangled Face Generation on Megapixels
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4255_ECCV_2022_paper.php
AUTHORS:　　　　Yuchen Luo, Junwei Zhu, Keke He, Wenqing Chu, Ying Tai, Chengjie Wang, Junchi Yan
HIGHLIGHT:　　　　In this work, we propose StyleFace, a unified framework for $1024^2$ resolution high-fidelity identity swapping and de-identification.

651, TITLE:　　　　Video Extrapolation in Space and Time
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4275_ECCV_2022_paper.php
AUTHORS:　　　　Yunzhi Zhang, Jiajun Wu
HIGHLIGHT:　　　　Inspired by these observations, we propose to study the problem of Video Extrapolation in Space and Time (VEST). We propose a model that tackles this problem and leverages the self-supervision from both tasks, while existing methods are designed to solve one of them.

652, TITLE:　　　　Contrastive Learning for Diverse Disentangled Foreground Generation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4323_ECCV_2022_paper.php
AUTHORS:　　　　Yuheng Li, Yijun Li, Jingwan Lu, Eli Shechtman, Yong Jae Lee, Krishna Kumar Singh
HIGHLIGHT:　　　　We introduce a new method for diverse foreground generation with explicit control over various factors.

653, TITLE:　　　　BIPS: Bi-modal Indoor Panorama Synthesis via Residual Depth-Aided Adversarial Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4327_ECCV_2022_paper.php

AUTHORS:        Changgyoon Oh, Wonjune Cho, Yujeong Chae, Daehee Park, Lin Wang, Kuk-Jin Yoon
HIGHLIGHT:        In this paper, we study a new problem: RGB-D panorama synthesis under the various configurations of cameras and depth sensors.

654, TITLE:        Augmentation of rPPG Benchmark Datasets: Learning to Remove and Embed rPPG Signals via Double Cycle Consistent Learning from Unpaired Facial Videos
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4330_ECCV_2022_paper.php
AUTHORS:        Cheng-Ju Hsieh, Wei-Hao Chung, Chiou-Ting Hsu
HIGHLIGHT:        In this paper, we focus on the estimation of remote photoplethysmography (rPPG) from facial videos and address the deficiency issues of large-scale benchmarking datasets.

655, TITLE:        Geometry-Aware Single-Image Full-Body Human Relighting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4385_ECCV_2022_paper.php
AUTHORS:        Chaonan Ji, Tao Yu, Kaiwen Guo, Jingxin Liu, Yebin Liu
HIGHLIGHT:        Although plausible relighting results can be achieved, previous methods suffer from both the entanglement between albedo and lighting and the lack of hard shadows, which significantly decrease the realism. To tackle these two problems, we propose a geometry-aware single-image human relighting framework that leverages single-image geometry reconstruction for joint deployment of traditional graphics rendering and neural rendering techniques.

656, TITLE:        3D-Aware Indoor Scene Synthesis with Depth Priors
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4399_ECCV_2022_paper.php
AUTHORS:        Zifan Shi, Yujun Shen, Jiapeng Zhu, Dit-Yan Yeung, Qifeng Chen
HIGHLIGHT:        We argue that indoor scenes do not have a shared intrinsic structure, and hence only using 2D images cannot adequately guide the model with the 3D geometry. In this work, we fill in this gap by introducing depth as a 3D prior.

657, TITLE:        Deep Portrait Delighting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4581_ECCV_2022_paper.php
AUTHORS:        Joshua Weir, Junhong Zhao, Andrew Chalmers, Taehyun Rhee
HIGHLIGHT:        We present a deep neural network for removing undesirable shading features from an unconstrained portrait image, recovering the underlying texture.

658, TITLE:        Vector Quantized Image-to-Image Translation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4584_ECCV_2022_paper.php
AUTHORS:        Yu-Jie Chen, Shin-I Cheng, Wei-Chen Chiu, Hung-Yu Tseng, Hsin-Ying Lee
HIGHLIGHT:        In this work, we propose introducing the vector quantization technique into the image-to-image translation framework.

659, TITLE:        The Surprisingly Straightforward Scene Text Removal Method with Gated Attention and Region of Interest Generation: A Comprehensive Prominent Model Analysis
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4705_ECCV_2022_paper.php
AUTHORS:        Hyeonsu Lee, Chankyu Choi
HIGHLIGHT:        We also introduce a simple yet extremely effective Gated Attention (GA) and Region-of-Interest Generation (RoIG) methodology in this paper.

660, TITLE:        Free-Viewpoint RGB-D Human Performance Capture and Rendering
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4721_ECCV_2022_paper.php
AUTHORS:        Phong Nguyen-Ha, Nikolaos Sarafianos, Christoph Lassner, Janne Heikkil&auml;, Tony Tung
HIGHLIGHT:        While prior work has shown impressive performance capture results in laboratory settings, it is non-trivial to achieve casual free-viewpoint human capture and rendering for unseen identities with high fidelity, especially for facial expressions, hands, and clothes. To tackle these challenges we introduce a novel view synthesis framework that generates realistic renders from unseen views of any human captured from a single-view and sparse RGB-D sensor, similar to a low-cost depth camera, and without actor-specific models.

661, TITLE:        Multiview Regenerative Morphing with Dual Flows
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4733_ECCV_2022_paper.php
AUTHORS:        Chih-Jung Tsai, Cheng Sun, Hwann-Tzong Chen
HIGHLIGHT:        This paper aims to address a new task of image morphing under a multiview setting, which takes two sets of multiview images as the input and generates intermediate renderings that not only exhibit smooth transitions between the two input sets but also ensure visual consistency across different views at any transition state. To achieve this goal, we propose a novel approach called Multiview Regenerative Morphing that formulates the morphing process as an optimization to solve for rigid transformation and optimal-transport interpolation.

662, TITLE:        Hallucinating Pose-Compatible Scenes
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4739_ECCV_2022_paper.php
AUTHORS:        Tim Brooks, Alexei A. Efros
HIGHLIGHT:        What does human pose tell us about a scene? We propose a task to answer this question: given human pose as input, hallucinate a compatible scene.

663, TITLE:        Motion and Appearance Adaptation for Cross-Domain Motion Transfer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4761_ECCV_2022_paper.php

AUTHORS: Borun Xu, Biao Wang, Jinhong Deng, Jiale Tao, Tiezheng Ge, Yuning Jiang, Wen Li, Lixin Duan
HIGHLIGHT: When there are considerable differences between object in the driving video and that in the source image, traditional single domain motion transfer approaches often produce notable artifacts for example, the synthesized image may fail to preserve the human shape of the source image (cf. Fig. 1 (a)). To address this issue, in the present work, we propose a Motion and Appearance Adaptation (MAA) approach for cross-domain motion transfer, in which we regularize the object in the synthesized image to capture the motion of the object in the driving frame, while still preserving the shape and appearance of the object in the source image.

664, TITLE: Layered Controllable Video Generation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4847_ECCV_2022_paper.php
AUTHORS: Jiahui Huang, Yuhe Jin, Kwang Moo Yi, Leonid Sigal
HIGHLIGHT: We introduce layered controllable video generation, where we, without any supervision, decompose the initial frame of a video into foreground and background layers, with which the user can control the video generation process by simply manipulating the foreground mask.

665, TITLE: Custom Structure Preservation in Face Aging
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4880_ECCV_2022_paper.php
AUTHORS: Guillermo Gomez-Trenado, St&eacute,phane Lathuili&egrave,re, Pablo Mesejo, &Oacute,scar Cord&oacute,n
HIGHLIGHT: In this work, we propose a novel architecture for face age editing that can produce structural modifications while maintaining relevant details present in the original image.

666, TITLE: Spatio-Temporal Deformable Attention Network for Video Deblurring
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4891_ECCV_2022_paper.php
AUTHORS: Huicong Zhang, Haozhe Xie, Hongxun Yao
HIGHLIGHT: Actually, not all the pixels in the video frames are sharp and beneficial for deblurring. To address this problem, we propose the spatio-temporal deformable attention network (STDANet) for video delurring, which extracts the information of sharp pixels by considering the pixel-wise blur levels of the video frames.

667, TITLE: NeuMesh: Learning Disentangled Neural Mesh-Based Implicit Field for Geometry and Texture Editing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4916_ECCV_2022_paper.php
AUTHORS: Bangbang Yang, Chong Bao, Junyi Zeng, Hujun Bao, Yinda Zhang, Zhaopeng Cui, Guofeng Zhang
HIGHLIGHT: In this paper, we present a novel mesh-based representation by encoding the neural implicit field with disentangled geometry and texture codes on mesh vertices, which facilitates a set of editing functionalities, including mesh-guided geometry editing, designated texture editing with texture swapping, filling and painting operations.

668, TITLE: NeRF for Outdoor Scene Relighting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4998_ECCV_2022_paper.php
AUTHORS: Viktor Rudnev, Mohamed Elgharib, William Smith, Lingjie Liu, Vladislav Golyanik, Christian Theobalt
HIGHLIGHT: We present NeRF-OSR, i.e., the first approach for outdoor scene relighting based on neural radiance fields.For evaluation, we collect a new benchmark dataset of several outdoor sites photographed from multiple viewpoints and at different times.

669, TITLE: CoGS: Controllable Generation and Search from Sketch and Style
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5160_ECCV_2022_paper.php
AUTHORS: Cusuh Ham, Gemma Canet Tarr&eacute,s, Tu Bui, James Hays, Zhe Lin, John Collomosse
HIGHLIGHT: We present CoGS, a novel method for the style-conditioned, sketch-driven synthesis of images.

670, TITLE: HairNet: Hairstyle Transfer with Pose Changes
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5227_ECCV_2022_paper.php
AUTHORS: Peihao Zhu, Rameen Abdal, John Femiani, Peter Wonka
HIGHLIGHT: We propose a novel algorithm for automatic hairstyle transfer, specifically targeting complicated inputs that do not match in pose.

671, TITLE: Unbiased Multi-Modality Guidance for Image Inpainting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5256_ECCV_2022_paper.php
AUTHORS: Yongsheng Yu, Dawei Du, Libo Zhang, Tiejian Luo
HIGHLIGHT: Besides, it is time-consuming for some methods to be implemented by multiple stages of complex neural networks. To solve this issue, we develop an end-to-end multi-modality guided transformer network, including one inpainting branch and two auxiliary branches for semantic segmentation and edge textures.

672, TITLE: Intelli-Paint: Towards Developing More Human-Intelligible Painting Agents
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5315_ECCV_2022_paper.php
AUTHORS: Jaskirat Singh, Cameron Smith, Jose Echevarria, Liang Zheng
HIGHLIGHT: In this work, we motivate the need to learn more human-intelligible painting sequences in order to facilitate the use of autonomous painting systems in a more interactive context (e.g. as a painting assistant tool for human users or for robotic painting applications).

673, TITLE: Motion Transformer for Unsupervised Image Animation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5396_ECCV_2022_paper.php
AUTHORS: Jiale Tao, Biao Wang, Tiezheng Ge, Yuning Jiang, Wen Li, Lixin Duan

HIGHLIGHT: More specifically, we introduce two types of tokens in our proposed method: i) image tokens formed from patch features and corresponding position encoding and ii) motion tokens encoded with motion information.

674, TITLE: N&UumlWA: Visual Synthesis Pre-training for Neural visUal World creAtion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5422_ECCV_2022_paper.php
AUTHORS: Chenfei Wu, Jian Liang, Lei Ji, Fan Yang, Yuejian Fang, Daxin Jiang, Nan Duan
HIGHLIGHT: This paper presents a unified multimodal pre-trained model called N&AtildeœWA that can generate new or manipulate existing visual data (i.e., image and video) for various visual synthesis tasks.

675, TITLE: EleGANt: Exquisite and Locally Editable GAN for Makeup Transfer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5430_ECCV_2022_paper.php
AUTHORS: Chenyu Yang, Wanrong He, Yingqing Xu, Yang Gao
HIGHLIGHT: To this end, we propose Exquisite and locally editable GAN for makeup transfer (EleGANt).

676, TITLE: Editing Out-of-Domain GAN Inversion via Differential Activations
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5504_ECCV_2022_paper.php
AUTHORS: Haorui Song, Yong Du, Tianyi Xiang, Junyu Dong, Jing Qin, Shengfeng He
HIGHLIGHT: In this paper, we propose a novel GAN prior based editing framework to tackle the out-of-domain inversion problem with a composition-decomposition paradigm.

677, TITLE: On the Robustness of Quality Measures for GANs
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5556_ECCV_2022_paper.php
AUTHORS: Motasem Alfarra, Juan C. P&eacute,rez, Anna Fr&uuml,hst&uuml,ck, Philip H. S. Torr, Peter Wonka, Bernard Ghanem
HIGHLIGHT: This work evaluates the robustness of quality measures of generative models such as Inception Score (IS) and Fr&eacutechet Inception Distance (FID).

678, TITLE: Sound-Guided Semantic Video Generation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5584_ECCV_2022_paper.php
AUTHORS: Seung Hyun Lee, Gyeongrok Oh, Wonmin Byeon, Chanyoung Kim, Won Jeong Ryoo, Sang Ho Yoon, Hyunjun Cho, Jihyun Bae, Jinkyu Kim, Sangpil Kim
HIGHLIGHT: In this paper, we propose a framework to generate realistic videos by leveraging multimodal (sound-image-text) embedding space.We provide the new high-resolution landscape video dataset (audio-visual pair) for the sound-guided video generation task.

679, TITLE: Inpainting at Modern Camera Resolution by Guided PatchMatch with Auto-Curation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5789_ECCV_2022_paper.php
AUTHORS: Lingzhi Zhang, Connelly Barnes, Kevin Wampler, Sohrab Amirghodsi, Eli Shechtman, Zhe Lin, Jianbo Shi
HIGHLIGHT: We contribute an inpainting benchmark dataset of photos at 4K and above representative of modern sensors.

680, TITLE: Controllable Video Generation through Global and Local Motion Dynamics
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5794_ECCV_2022_paper.php
AUTHORS: Aram Davtyan, Paolo Favaro
HIGHLIGHT: We present GLASS, a method for Global and Local Action-driven Sequence Synthesis.

681, TITLE: StyleHEAT: One-Shot High-Resolution Editable Talking Face Generation via Pre-trained StyleGAN
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5856_ECCV_2022_paper.php
AUTHORS: Fei Yin, Yong Zhang, Xiaodong Cun, Mingdeng Cao, Yanbo Fan, Xuan Wang, Qingyan Bai, Baoyuan Wu, Jue Wang, Yujiu Yang
HIGHLIGHT: In this work, we provide a solution from a novel perspective that differs from existing frameworks.

682, TITLE: Long Video Generation with Time-Agnostic VQGAN and Time-Sensitive Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5950_ECCV_2022_paper.php
AUTHORS: Songwei Ge, Thomas Hayes, Harry Yang, Xi Yin, Guan Pang, David Jacobs, Jia-Bin Huang, Devi Parikh
HIGHLIGHT: In this paper, we present a method that builds on 3D-VQGAN and transformers to generate videos with thousands of frames.

683, TITLE: Combining Internal and External Constraints for Unrolling Shutter in Videos
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5951_ECCV_2022_paper.php
AUTHORS: Eyal Naor, Itai Antebi, Shai Bagon, Michal Irani
HIGHLIGHT: In this paper we propose a space-time solution to the RS problem.

684, TITLE: WISE: Whitebox Image Stylization by Example-Based Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6063_ECCV_2022_paper.php
AUTHORS: Winfried L&ouml,tzsch, Max Reimann, Martin B&uuml,ssemeyer, Amir Semmo, J&uuml,rgen D&ouml,llner, Matthias Trapp
HIGHLIGHT: However, adapting or extending these techniques to produce new styles is often a tedious and error-prone task that requires expert knowledge. We propose a new paradigm to alleviate this problem: implementing algorithmic image filtering techniques as differentiable operations that can learn parametrizations aligned to certain reference styles.

685, TITLE: Neural Radiance Transfer Fields for Relightable Novel-View Synthesis with Global Illumination
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6143_ECCV_2022_paper.php
AUTHORS: Linjie Lyu, Ayush Tewari, Thomas Leimk&uuml,hler, Marc Habermann, Christian Theobalt
HIGHLIGHT: On the other hand, mature Computer Graphics tools allow modeling of complex photo-realistic light transport given all the scene parameters. Combining these approaches, we propose a method for scene relighting under novel views by learning a neural precomputed radiance transfer function, which implicitly handles global illumination effects using novel environment maps.

686, TITLE: Transformers As Meta-Learners for Implicit Neural Representations
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6220_ECCV_2022_paper.php
AUTHORS: Yinbo Chen, Xiaolong Wang
HIGHLIGHT: Motivated by a generalized formulation of gradient-based meta-learning, we propose a formulation that uses Transformers as hypernetworks for INRs, where it can directly build the whole set of INR weights with Transformers specialized as set-to-set mapping.

687, TITLE: Style Your Hair: Latent Optimization for Pose-Invariant Hairstyle Transfer via Local-Style-Aware Hair Alignment
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6395_ECCV_2022_paper.php
AUTHORS: Taewoo Kim, Chaeyeon Chung, Yoonseo Kim, Sunghyun Park, Kangyeol Kim, Jaegul Choo
HIGHLIGHT: HairFIT, a pose-invariant hairstyle transfer model, alleviates this limitation yet still shows unsatisfactory quality in preserving delicate hair textures. To solve these limitations, we propose a high-performing pose-invariant hairstyle transfer model equipped with latent optimization and a newly presented local-style-matching loss.

688, TITLE: High-Resolution Virtual Try-On with Misalignment and Occlusion-Handled Conditions
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6403_ECCV_2022_paper.php
AUTHORS: Sangyun Lee, Gyojung Gu, Sunghyun Park, Seunghwan Choi, Jaegul Choo
HIGHLIGHT: To settle the issues, we propose a novel try-on condition generator as a unified module of the two stages (i.e., warping and segmentation generation stages).

689, TITLE: A Codec Information Assisted Framework for Efficient Compressed Video Super-Resolution
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6420_ECCV_2022_paper.php
AUTHORS: Hengsheng Zhang, Xueyi Zou, Jiaming Guo, Youliang Yan, Rong Xie, Li Song
HIGHLIGHT: In this paper, considering the characteristics of compressed videos, we propose a Codec Information Assisted Framework (CIAF) to boost and accelerate recurrent VSR models for compressed videos.

690, TITLE: Injecting 3D Perception of Controllable NeRF-GAN into StyleGAN for Editable Portrait Image Synthesis
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6505_ECCV_2022_paper.php
AUTHORS: Jeong-gi Kwak, Yuanming Li, Dongsik Yoon, Donghyeon Kim, David Han, Hanseok Ko
HIGHLIGHT: The controllability and interpretability of 3D GANs have not been much explored. In this work, we propose two solutions to overcome these weaknesses of 2D GANs and 3D-aware GANs.

691, TITLE: AdaNeRF: Adaptive Sampling for Real-Time Rendering of Neural Radiance Fields
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6513_ECCV_2022_paper.php
AUTHORS: Andreas Kurz, Thomas Neff, Zhaoyang Lv, Michael Zollh&ouml,fer, Markus Steinberger
HIGHLIGHT: In this paper, we propose a novel dual-network architecture that takes an orthogonal direction by learning how to best reduce the number of required sample points.

692, TITLE: Improving the Perceptual Quality of 2D Animation Interpolation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6651_ECCV_2022_paper.php
AUTHORS: Shuhong Chen, Matthias Zwicker
HIGHLIGHT: In this work, we address challenges unexplored in previous animation interpolation systems, with a focus on improving perceptual quality.

693, TITLE: Selective TransHDR: Transformer-Based Selective HDR Imaging Using Ghost Region Mask
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6670_ECCV_2022_paper.php
AUTHORS: Jou Won Song, Ye-In Park, Kyeongbo Kong, Jaeho Kwak, Suk-Ju Kang
HIGHLIGHT: Therefore, the CNN-based methods specialized for local features extraction cannot obtain satisfactory results. To address this issue, we propose a transformer-based selective HDR image reconstruction network that uses a ghost region mask.

694, TITLE: Learning Series-Parallel Lookup Tables for Efficient Image Super-Resolution
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6698_ECCV_2022_paper.php
AUTHORS: Cheng Ma, Jingyi Zhang, Jie Zhou, Jiwen Lu
HIGHLIGHT: Besides, their frameworks of single-layer lookup tables limit the extension and generalization capacities of the model. In this paper, we propose a framework of series-parallel lookup tables (SPLUT) to alleviate the above issues and achieve efficient image super-resolution.

695, TITLE: GeoAug: Data Augmentation for Few-Shot NeRF with Geometry Constraints
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6720_ECCV_2022_paper.php
AUTHORS: Di Chen, Yu Liu, Lianghua Huang, Bin Wang, Pan Pan
HIGHLIGHT: We hereby present GeoAug: a data augmentation method for NeRF, which enriches training data based on multi-view geometric constraint.

696, TITLE: DoodleFormer: Creative Sketch Drawing with Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6722_ECCV_2022_paper.php
AUTHORS: Ankan Kumar Bhunia, Salman Khan, Hisham Cholakkal, Rao Muhammad Anwer, Fahad Shahbaz Khan, Jorma Laaksonen, Michael Felsberg
HIGHLIGHT: Here, we propose a novel coarse-to-fine two-stage framework, DoodleFormer, that decomposes the creative sketch generation problem into the creation of coarse sketch composition followed by the incorporation of fine-details in the sketch.

697, TITLE: Implicit Neural Representations for Variable Length Human Motion Generation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6727_ECCV_2022_paper.php
AUTHORS: Pablo Cervantes, Yusuke Sekikawa, Ikuro Sato, Koichi Shinoda
HIGHLIGHT: We propose an action-conditional human motion generation method using variational implicit neural representations (INR).

698, TITLE: Learning Object Placement via Dual-Path Graph Completion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6745_ECCV_2022_paper.php
AUTHORS: Siyuan Zhou, Liu Liu, Li Niu, Liqing Zhang
HIGHLIGHT: In this work, we treat object placement as a graph completion problem and propose a novel graph completion module (GCM).

699, TITLE: Expanded Adaptive Scaling Normalization for End to End Image Compression
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6817_ECCV_2022_paper.php
AUTHORS: Chajin Shin, Hyeongmin Lee, Hanbin Son, Sangjin Lee, Dogyoon Lee, Sangyoun Lee
HIGHLIGHT: To handle the limitations of GDN, we construct an expanded form of the adaptive scaling module, named Expanded Adaptive Scaling Normalization(EASN).

700, TITLE: Generator Knows What Discriminator Should Learn in Unconditional GANs
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6917_ECCV_2022_paper.php
AUTHORS: Gayoung Lee, Hyunsu Kim, Junho Kim, Seonghyeon Kim, Jung-Woo Ha, Yunjey Choi
HIGHLIGHT: From our empirical evidences, we propose a new generator-guided discriminator regularization (GGDR) in which the generator feature maps supervise the discriminator to have rich semantic representations in unconditional generation.

701, TITLE: Compositional Visual Generation with Composable Diffusion Models
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6940_ECCV_2022_paper.php
AUTHORS: Nan Liu, Shuang Li, Yilun Du, Antonio Torralba, Joshua B. Tenenbaum
HIGHLIGHT: In this paper, we propose an alternative structured approach for compositional generation using diffusion models.

702, TITLE: ManiFest: Manifold Deformation for Few-Shot Image Translation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6959_ECCV_2022_paper.php
AUTHORS: Fabio Pizzati, Jean-Fran&ccedil,ois Lalonde, Raoul de Charette
HIGHLIGHT: We instead propose ManiFest: a framework for few-shot image translation that learns a context-aware representation of a target domain from a few images only.

703, TITLE: Supervised Attribute Information Removal and Reconstruction for Image Manipulation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7027_ECCV_2022_paper.php
AUTHORS: Nannan Li, Bryan A. Plummer
HIGHLIGHT: In this paper, we propose an Attribute Information Removal and Reconstruction (AIRR) network that prevents such information hiding by learning how to remove the attribute information entirely, creating attribute excluded features, and then learns to directly inject the desired attributes in a reconstructed image.

704, TITLE: BLT: Bidirectional Layout Transformer for Controllable Layout Generation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7035_ECCV_2022_paper.php
AUTHORS: Xiang Kong, Lu Jiang, Huiwen Chang, Han Zhang, Yuan Hao, Haifeng Gong, Irfan Essa
HIGHLIGHT: To advance conditional layout generation, we introduce BLT, a bidirectional layout transformer.

705, TITLE: Diverse Generation from a Single Video Made Possible
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7122_ECCV_2022_paper.php
AUTHORS: Niv Haim, Ben Feinstein, Niv Granot, Assaf Shocher, Shai Bagon, Tali Dekel, Michal Irani
HIGHLIGHT: In this paper we question the necessity of a GAN for generation from a single video, and introduce a non-parametric baseline for a variety of generation and manipulation tasks.

706, TITLE: Rayleigh EigenDirections (REDs): Nonlinear GAN Latent Space Traversals for Multidimensional Features
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7277_ECCV_2022_paper.php
AUTHORS: Guha Balakrishnan, Raghudeep Gadde, Aleix Martinez, Pietro Perona
HIGHLIGHT: We present a method for finding paths in a deep generative model's latent space that can maximally vary one set of image features while holding others constant.

707, TITLE: Bridging the Domain Gap towards Generalization in Automatic Colorization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7304_ECCV_2022_paper.php

AUTHORS:　　　　Hyejin Lee, Daehee Kim, Daeun Lee, Jinkyu Kim, Jaekoo Lee
HIGHLIGHT:　　　　We propose a novel automatic colorization technique that learns domain-invariance across multiple source domains and is able to leverage such invariance to colorize grayscale images in unseen target domains.

708, TITLE:　　　　Generating Natural Images with Direct Patch Distributions Matching
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7543_ECCV_2022_paper.php
AUTHORS:　　　　Ariel Elnekave, Yair Weiss
HIGHLIGHT:　　　　In this paper we leverage the Sliced Wasserstein Distance to develop an algorithm that explicitly and efficiently minimizes the distance between patch distributions in two images.

709, TITLE:　　　　Context-Consistent Semantic Image Editing with Style-Preserved Modulation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7865_ECCV_2022_paper.php
AUTHORS:　　　　Wuyang Luo, Su Yang, Hong Wang, Bo Long, Weishan Zhang
HIGHLIGHT:　　　　We attribute this to the fact that SPADE only uses an image-independent local semantic layout but ignores the image-specific styles included in the known pixels. To address this issue, we propose a style-preserved modulation (SPM) comprising two modulations processes: The first modulation incorporates the contextual style and semantic layout, and then generates two fused modulation parameters.

710, TITLE:　　　　Eliminating Gradient Conflict in Reference-Based Line-Art Colorization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7935_ECCV_2022_paper.php
AUTHORS:　　　　Zekun Li, Zhengyang Geng, Zhao Kang, Wenyu Chen, Yibo Yang
HIGHLIGHT:　　　　This phenomenon motivates us to alleviate the gradient issue by preserving the dominant gradient branch while removing the conflict ones. We propose a novel attention mechanism using this training strategy, Stop-Gradient Attention (SGA), outperforming the attention baseline by a large margin with better training stability.

711, TITLE:　　　　Unsupervised Learning of Efficient Geometry-Aware Neural Articulated Representations
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/8026_ECCV_2022_paper.php
AUTHORS:　　　　Atsuhiro Noguchi, Xiao Sun, Stephen Lin, Tatsuya Harada
HIGHLIGHT:　　　　We propose an unsupervised method for 3D geometry-aware representation learning of articulated objects, in which no image-pose pairs or foreground masks are used for training.

712, TITLE:　　　　JPEG Artifacts Removal via Contrastive Representation Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/171_ECCV_2022_paper.php
AUTHORS:　　　　Xi Wang, Xueyang Fu, Yurui Zhu, Zheng-Jun Zha
HIGHLIGHT:　　　　However, they may fail to estimate unseen compression types, affecting the subsequent restoration performance. To remedy this issue, we propose an unsupervised compression quality representation learning strategy for the blind JPEG artifacts removal.

713, TITLE:　　　　Unpaired Deep Image Dehazing Using Contrastive Disentanglement Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/255_ECCV_2022_paper.php
AUTHORS:　　　　Xiang Chen, Zhentao Fan, Pengpeng Li, Longgang Dai, Caihua Kong, Zhuoran Zheng, Yufeng Huang, Yufeng Li
HIGHLIGHT:　　　　This paper provides a new perspective to treat image dehazing as a two-class separated factor disentanglement task, i.e, the task-relevant factor of clear image reconstruction and the task-irrelevant factor of haze-relevant distribution.

714, TITLE:　　　　Efficient Long-Range Attention Network for Image Super-Resolution
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/339_ECCV_2022_paper.php
AUTHORS:　　　　Xindong Zhang, Hui Zeng, Shi Guo, Lei Zhang
HIGHLIGHT:　　　　In this work, we propose an efficient long-range attention network (ELAN) for image SR.

715, TITLE:　　　　FlowFormer: A Transformer Architecture for Optical Flow
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/349_ECCV_2022_paper.php
AUTHORS:　　　　Zhaoyang Huang, Xiaoyu Shi, Chao Zhang, Qiang Wang, Ka Chun Cheung, Hongwei Qin, Jifeng Dai, Hongsheng Li
HIGHLIGHT:　　　　We introduce optical Flow transFormer, dubbed as FlowFormer, a transformer-based neural network architecture for learning optical flow.

716, TITLE:　　　　Coarse-to-Fine Sparse Transformer for Hyperspectral Image Reconstruction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/357_ECCV_2022_paper.php
AUTHORS:　　　　Yuanhao Cai, Jing Lin, Xiaowan Hu, Haoqian Wang, Xin Yuan, Yulun Zhang, Radu Timofte, Luc Van Gool
HIGHLIGHT:　　　　In this paper, we propose a novel Transformer-based method, coarse-to-fine sparse Transformer (CST), firstly embedding HSI sparsity into deep learning for HSI reconstruction.

717, TITLE:　　　　Learning Shadow Correspondence for Video Shadow Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/513_ECCV_2022_paper.php
AUTHORS:　　　　Xinpeng Ding, Jingwen Yang, Xiaowei Hu, Xiaomeng Li
HIGHLIGHT:　　　　In this paper, we present a novel Shadow-Consistent Correspondence method (SC-Cor) to enhance pixel-wise similarity of the specific shadow regions across frames for video shadow detection.

718, TITLE:　　　　Metric Learning Based Interactive Modulation for Real-World Super-Resolution

http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/968_ECCV_2022_paper.php
AUTHORS:          Chong Mou, Yanze Wu, Xintao Wang, Chao Dong, Jian Zhang, Ying Shan
HIGHLIGHT:          In this work, we present a Metric Learning based Interactive Modulation for Real-World \Super-Resolution (MM-RealSR).

719, TITLE:          Dynamic Dual Trainable Bounds for Ultra-Low Precision Super-Resolution Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/989_ECCV_2022_paper.php
AUTHORS:          Yunshan Zhong, Mingbao Lin, Xunchao Li, Ke Li, Yunhang Shen, Fei Chao, Yongjian Wu, Rongrong Ji
HIGHLIGHT:          In this paper, we identify that the performance drop comes from the contradiction between the layer-wise symmetric quantizer and the highly asymmetric activation distribution in SR models.

720, TITLE:          OSFormer: One-Stage Camouflaged Instance Segmentation with Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1317_ECCV_2022_paper.php
AUTHORS:          Jialun Pei, Tianyang Cheng, Deng-Ping Fan, He Tang, Chuanbo Chen, Luc Van Gool
HIGHLIGHT:          We present OSFormer, the first one-stage transformer framework for camouflaged instance segmentation (CIS).

721, TITLE:          Highly Accurate Dichotomous Image Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1321_ECCV_2022_paper.php
AUTHORS:          Xuebin Qin, Hang Dai, Xiaobin Hu, Deng-Ping Fan, Ling Shao, Luc Van Gool
HIGHLIGHT:          We present a systematic study on a new task called dichotomous image segmentation (DIS), which aims to segment highly accurate objects from natural images.

722, TITLE:          Boosting Supervised Dehazing Methods via Bi-Level Patch Reweighting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1346_ECCV_2022_paper.php
AUTHORS:          Xingyu Jiang, Hongkun Dou, Chengwei Fu, Bingquan Dai, Tianrun Xu, Yue Deng
HIGHLIGHT:          To this end, we propose a bi-level dehazing (BILD) framework by designing an internal loop for weighted supervised dehazing and an external loop for training patch reweighting.

723, TITLE:          Flow-Guided Transformer for Video Inpainting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1456_ECCV_2022_paper.php
AUTHORS:          Kaidong Zhang, Jingjing Fu, Dong Liu
HIGHLIGHT:          We propose a flow-guided transformer, which innovatively leverage the motion discrepancy exposed by optical flows to instruct the attention retrieval in transformer for high fidelity video inpainting.

724, TITLE:          Shift-tolerant Perceptual Similarity Metric
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1551_ECCV_2022_paper.php
AUTHORS:          Abhijay Ghildyal, Feng Liu
HIGHLIGHT:          This paper studies the effect of small misalignment, specifically a small shift between the input and reference image, on existing metrics, and accordingly develops a shift-tolerant similarity metric.

725, TITLE:          Perception-Distortion Balanced ADMM Optimization for Single-Image Super-Resolution
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1586_ECCV_2022_paper.php
AUTHORS:          Yuehan Zhang, Bo Ji, Jia Hao, Angela Yao
HIGHLIGHT:          In this paper, we propose a novel super-resolution model with a low-frequency constraint (LFc-SR), which balances the objective and perceptual quality through a single model and yields super-resolved images with high PSNR and perceptual scores.

726, TITLE:          VQFR: Blind Face Restoration with Vector-Quantized Dictionary and Parallel Decoder
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1617_ECCV_2022_paper.php
AUTHORS:          Yuchao Gu, Xintao Wang, Liangbin Xie, Chao Dong, Gen Li, Ying Shan, Ming-Ming Cheng
HIGHLIGHT:          Motivated by the classical dictionary-based methods and the recent vector quantization (VQ) technique, we propose a VQ-based face restoration method - VQFR.

727, TITLE:          Uncertainty Learning in Kernel Estimation for Multi-stage Blind Image Super-Resolution
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1649_ECCV_2022_paper.php
AUTHORS:          Zhenxuan Fang, Weisheng Dong, Xin Li, Jinjian Wu, Leida Li, Guangming Shi
HIGHLIGHT:          Such sequential approaches suffer from two fundamental weaknesses - i.e., the lack of robustness (the performance drops when the estimated degradation is inaccurate) and the lack of transparency (network architectures are heuristic without incorporating domain knowledge). To address these issues, we propose a joint Maximum a Posterior (MAP) approach for estimating the unknown kernel and high-resolution image simultaneously.

728, TITLE:          Learning Spatio-Temporal Downsampling for Effective Video Upscaling
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1697_ECCV_2022_paper.php
AUTHORS:          Xiaoyu Xiang, Yapeng Tian, Vijay Rengarajan, Lucas D. Young, Bo Zhu, Rakesh Ranjan
HIGHLIGHT:          In this paper, we aim to solve the space-time aliasing problem by learning a spatio-temporal downsampler.

729, TITLE:          Learning Local Implicit Fourier Representation for Image Warping
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1738_ECCV_2022_paper.php
AUTHORS:          Jaewon Lee, Kwang Pyo Choi, Kyong Hwan Jin

HIGHLIGHT:        In this paper, we propose a local texture estimator for image warping (LTEW) followed by an implicit neural representation to deform images into continuous shapes.

730, TITLE:        SepLUT: Separable Image-Adaptive Lookup Tables for Real-Time Image Enhancement
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1740_ECCV_2022_paper.php
AUTHORS:        Canqian Yang, Meiguang Jin, Yi Xu, Rui Zhang, Ying Chen, Huaida Liu
HIGHLIGHT:        On the other, the 3D LUTs present enhanced component-correlated transform capability but suffer from heavy memory footprint, high training difficulty, and limited cell utilization. Inspired by the conventional divide-and-conquer practice in the image signal processor, we present SepLUT (separable image-adaptive lookup table) to tackle the above limitations.

731, TITLE:        Blind Image Decomposition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1746_ECCV_2022_paper.php
AUTHORS:        Junlin Han, Weihao Li, Pengfei Fang, Chunyi Sun, Jie Hong, Mohammad Ali Armin, Lars Petersson, Hongdong Li
HIGHLIGHT:        We propose and study a novel task named Blind Image Decomposition (BID), which requires separating a superimposed image into constituent underlying images in a blind setting, that is, both the source components involved in mixing as well as the mixing mechanism are unknown.

732, TITLE:        MuLUT: Cooperating Multiple Look-Up Tables for Efficient Image Super-Resolution
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1756_ECCV_2022_paper.php
AUTHORS:        Jiacheng Li, Chang Chen, Zhen Cheng, Zhiwei Xiong
HIGHLIGHT:        Consequently, the receptive field of a single LUT is restricted, resulting in inferior performance. To address this issue, we extend SR-LUT by enabling the cooperation of Multiple LUTs, termed MuLUT.

733, TITLE:        Learning Spatiotemporal Frequency-Transformer for Compressed Video Super-Resolution
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1814_ECCV_2022_paper.php
AUTHORS:        Zhongwei Qiu, Huan Yang, Jianlong Fu, Dongmei Fu
HIGHLIGHT:        In this paper, we propose a novel Frequency-Transformer for compressed video super-resolution (FTVSR) that conducts self-attention over a joint space-time-frequency domain.

734, TITLE:        Spatial-Frequency Domain Information Integration for Pan-Sharpening
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1988_ECCV_2022_paper.php
AUTHORS:        Man Zhou, Jie Huang, Keyu Yan, Hu Yu, Xueyang Fu, Aiping Liu, Xian Wei, Feng Zhao
HIGHLIGHT:        In this paper, we first attempt to address pan-sharpening in both spatial-frequency domain and propose a Spatial-Frequency Information Integration Network, dubbed as SFIIN.

735, TITLE:        Adaptive Patch Exiting for Scalable Single Image Super-Resolution
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2021_ECCV_2022_paper.php
AUTHORS:        Shizun Wang, Jiaming Liu, Kaixin Chen, Xiaoqi Li, Ming Lu, Yandong Guo
HIGHLIGHT:        As image can be divided into patches, which have various restoration difficulties, we present a scalable method based on Adaptive Patch Exiting (APE) to achieve more practical speedup.

736, TITLE:        Efficient Meta-Tuning for Content-Aware Neural Video Delivery
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2031_ECCV_2022_paper.php
AUTHORS:        Xiaoqi Li, Jiaming Liu, Shizun Wang, Cheng Lyu, Ming Lu, Yurong Chen, Anbang Yao, Yandong Guo, Shanghang Zhang
HIGHLIGHT:        In this paper, we present a method named Efficient Meta-Tuning (EMT) to reduce the computational cost.

737, TITLE:        Reference-Based Image Super-Resolution with Deformable Attention Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2105_ECCV_2022_paper.php
AUTHORS:        Jiezhang Cao, Jingyun Liang, Kai Zhang, Yawei Li, Yulun Zhang, Wenguan Wang, Luc Van Gool
HIGHLIGHT:        However, addressing the RefSR problem has two critical challenges: (i) It is difficult to match the correspondence between LR and Ref images when they are significantly different (ii) How to transfer the relevant texture from Ref images to compensate the details for LR images is very challenging. To address these issues of RefSR, this paper proposes a deformable attention Transformer, namely DATSR, with multiple scales, each of which consists of a texture feature encoder (TFE) module, a reference-based deformable attention (RDA) module and a residual feature aggregation (RFA) module.

738, TITLE:        Local Color Distributions Prior for Image Enhancement
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2257_ECCV_2022_paper.php
AUTHORS:        Haoyuan Wang, Ke Xu, Rynson W.H. Lau
HIGHLIGHT:        Based on this observation, we propose in this paper to exploit these LCDs as a prior for locating and enhancing the two types of regions (i.e., over-/under-exposed regions).Third, we construct a new dataset to facilitate the learning process, by following the camera image signal processing (ISP) pipeline to render standard RGB images with both under-/over-exposures from raw data.

739, TITLE:        L-CoDer: Language-Based Colorization with Color-Object Decoupling Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2424_ECCV_2022_paper.php
AUTHORS:        Zheng Chang, Shuchen Weng, Yu Li, Si Li, Boxin Shi
HIGHLIGHT:        In this work, we introduce transformer into language-based colorization to tackle the aforementioned issues while keeping the language decoupling property.

740, TITLE: From Face to Natural Image: Learning Real Degradation for Blind Image Super-Resolution
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2925_ECCV_2022_paper.php
AUTHORS: Xiaoming Li, Chaofeng Chen, Xianhui Lin, Wangmeng Zuo, Lei Zhang
HIGHLIGHT: More importantly, our method provides a new way to handle the real-world complex scenarios by learning their degradation representations from the facial portions, which can be used to significantly improve the quality of non-facial areas.

741, TITLE: Towards Interpretable Video Super-Resolution via Alternating Optimization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3116_ECCV_2022_paper.php
AUTHORS: Jiezhang Cao, Jingyun Liang, Kai Zhang, Wenguan Wang, Qin Wang, Yulun Zhang, Hao Tang, Luc Van Gool
HIGHLIGHT: In this paper, we study a practical space-time video super-resolution (STVSR) problem which aims at generating a high-framerate high-resolution sharp video from a low-framerate low-resolution blurry video.

742, TITLE: Event-Based Fusion for Motion Deblurring with Cross-Modal Attention
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3239_ECCV_2022_paper.php
AUTHORS: Lei Sun, Christos Sakaridis, Jingyun Liang, Qi Jiang, Kailun Yang, Peng Sun, Yaozu Ye, Kaiwei Wang, Luc Van Gool
HIGHLIGHT: In this paper, we rethink the event-based image deblurring problem and unfold it into an end-to-end two-stage image restoration network.

743, TITLE: Fast and High Quality Image Denoising via Malleable Convolution
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3257_ECCV_2022_paper.php
AUTHORS: Yifan Jiang, Bartlomiej Wronski, Ben Mildenhall, Jonathan T. Barron, Zhangyang Wang, Tianfan Xue
HIGHLIGHT: In this work, we present \textbf{Malle}able \textbf{Conv}olution (\textbf{MalleConv}), which performs spatial-varying processing with minimal computational overhead.

744, TITLE: TAPE: Task-Agnostic Prior Embedding for Image Restoration
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3292_ECCV_2022_paper.php
AUTHORS: Lin Liu, Lingxi Xie, Xiaopeng Zhang, Shanxin Yuan, Xiangyu Chen, Wengang Zhou, Houqiang Li, Qi Tian
HIGHLIGHT: In this paper, we propose a novel approach that embeds a task-agnostic prior into a transformer.

745, TITLE: Uncertainty Inspired Underwater Image Enhancement
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3298_ECCV_2022_paper.php
AUTHORS: Zhenqi Fu, Wu Wang, Yue Huang, Xinghao Ding, Kai-Kuang Ma
HIGHLIGHT: In this paper, we resolve UIE into distribution estimation and consensus process.

746, TITLE: Hourglass Attention Network for Image Inpainting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3369_ECCV_2022_paper.php
AUTHORS: Ye Deng, Siqi Hui, Rongye Meng, Sanping Zhou, Jinjun Wang
HIGHLIGHT: Compared to convolution, attention has a lower inductive bias, and the output is highly correlated with the input, making it more suitable for processing images with various breakage. Inspired by this, in this paper we propose a novel attention-based network (transformer), called hourglass attention network (HAN) for image inpainting, which builds an hourglass-shaped attention structure to generate appropriate features for complemented images.

747, TITLE: Unfolded Deep Kernel Estimation for Blind Image Super-Resolution
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3484_ECCV_2022_paper.php
AUTHORS: Hongyi Zheng, Hongwei Yong, Lei Zhang
HIGHLIGHT: In this work, we propose a novel unfolded deep kernel estimation (UDKE) method, which, for the first time to our best knowledge, explicitly solves the data term with high efficiency.

748, TITLE: Event-Guided Deblurring of Unknown Exposure Time Videos
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3601_ECCV_2022_paper.php
AUTHORS: Taewoo Kim, Jeongmin Lee, Lin Wang, Kuk-Jin Yoon
HIGHLIGHT: In this paper, we address the event-guided motion deblurring assuming dynamically variable unknown exposure time of the frame-based camera.

749, TITLE: ReCoNet: Recurrent Correction Network for Fast and Efficient Multi-Modality Image Fusion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3864_ECCV_2022_paper.php
AUTHORS: Zhanbo Huang, Jinyuan Liu, Xin Fan, Risheng Liu, Wei Zhong, Zhongxuan Luo
HIGHLIGHT: Concretely, we design a deformation module to explicitly compensate geometrical distortions and an attention mechanism to mitigate ghosting-like artifacts, respectively.

750, TITLE: Content Adaptive Latents and Decoder for Neural Image Compression
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4016_ECCV_2022_paper.php
AUTHORS: Guanbo Pan, Guo Lu, Zhihao Hu, Dong Xu
HIGHLIGHT: In this work, we propose a new NIC framework that improves the content adaptability on both latents and the decoder.

751, TITLE: Efficient and Degradation-Adaptive Network for Real-World Image Super-Resolution
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4023_ECCV_2022_paper.php

AUTHORS: Jie Liang, Hui Zeng, Lei Zhang
HIGHLIGHT: In this paper, we propose an efficient and effective degradation-adaptive super-resolution (DASR) network, whose parameters are adaptively specified by estimating the degradation of each input image.

752, TITLE: Unidirectional Video Denoising by Mimicking Backward Recurrent Modules with Look-Ahead Forward Ones
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4024_ECCV_2022_paper.php
AUTHORS: Junyi Li, Xiaohe Wu, Zhenxing Niu, Wangmeng Zuo
HIGHLIGHT: To address the offline issue of BiRNN, we present a novel recurrent network consisting of forward and look-ahead recurrent modules for unidirectional video denoising.

753, TITLE: Self-Supervised Learning for Real-World Super-Resolution from Dual Zoomed Observations
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4057_ECCV_2022_paper.php
AUTHORS: Zhilu Zhang, Ruohao Wang, Hongzhi Zhang, Yunjin Chen, Wangmeng Zuo
HIGHLIGHT: In this paper, we consider two challenging issues in reference-based super-resolution (RefSR), (i) how to choose a proper reference image, and (ii) how to learn real-world RefSR in a self-supervised manner.

754, TITLE: Secrets of Event-Based Optical Flow
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4067_ECCV_2022_paper.php
AUTHORS: Shintaro Shiba, Yoshimitsu Aoki, Guillermo Gallego
HIGHLIGHT: We develop a principled method to extend the Contrast Maximization framework to estimate optical flow from events alone.

755, TITLE: Towards Efficient and Scale-Robust Ultra-High-Definition Image Demoir&eacuteing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4080_ECCV_2022_paper.php
AUTHORS: Xin Yu, Peng Dai, Wenbo Li, Lan Ma, Jiajun Shen, Jia Li, Xiaojuan Qi
HIGHLIGHT: In this paper, we explore moir&eacute pattern removal for ultra-high-definition images.

756, TITLE: ERDN: Equivalent Receptive Field Deformable Network for Video Deblurring
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4085_ECCV_2022_paper.php
AUTHORS: Bangrui Jiang, Zhihuai Xie, Zhen Xia, Songnan Li, Shan Liu
HIGHLIGHT: In this work, we propose an equivalent receptive field deformable network (ERDN) to perform alignment at the feature level without estimating optical flow.

757, TITLE: Rethinking Generic Camera Models for Deep Single Image Camera Calibration to Recover Rotation and Fisheye Distortion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4185_ECCV_2022_paper.php
AUTHORS: Nobuhiko Wakai, Satoshi Sato, Yasunori Ishii, Takayoshi Yamashita
HIGHLIGHT: This degradation is caused by mismatching between the actual projection and expected projection. To address this problem, we propose a generic camera model that has the potential to address various types of distortion.

758, TITLE: ART-SS: An Adaptive Rejection Technique for Semi-Supervised Restoration for Adverse Weather-Affected Images
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4237_ECCV_2022_paper.php
AUTHORS: Rajeev Yasarla, Carey E. Priebe, Vishal M. Patel
HIGHLIGHT: Although various weather degradation synthesis methods exist in the literature, the use of synthetically generated weather degraded images often results in sub-optimal performance on the real weatherdegraded images due to the domain gap between synthetic and real world images. To deal with this problem, various semi-supervised restoration (SSR) methods have been proposed for deraining or dehazing which learn to restore clean image using synthetically generated datasets while generalizing better using unlabeled real-world images.

759, TITLE: Fusion from Decomposition: A Self-Supervised Decomposition Approach for Image Fusion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4260_ECCV_2022_paper.php
AUTHORS: Pengwei Liang, Junjun Jiang, Xianming Liu, Jiayi Ma
HIGHLIGHT: In this paper, we propose a powerful image decomposition model for fusion task via the self-supervised representation learning, dubbed Decomposition for Fusion (DeFusion).

760, TITLE: Learning Degradation Representations for Image Deblurring
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4261_ECCV_2022_paper.php
AUTHORS: Dasong Li, Yi Zhang, Ka Chun Cheung, Xiaogang Wang, Hongwei Qin, Hongsheng Li
HIGHLIGHT: In this paper, we propose a framework to learn spatially adaptive degradation representations of blurry images.

761, TITLE: Learning Mutual Modulation for Self-Supervised Cross-Modal Super-Resolution
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4336_ECCV_2022_paper.php
AUTHORS: Xiaoyu Dong, Naoto Yokoya, Longguang Wang, Tatsumi Uezato
HIGHLIGHT: Existing methods utilize pseudo or weak supervision in LR space and thus deliver results that are blurry or not faithful to the source modality. To address this issue, we present a mutual modulation SR (MMSR) model, which tackles the task by a mutual modulation strategy, including a source-to-guide modulation and a guide-to-source modulation.

762, TITLE: Spectrum-Aware and Transferable Architecture Search for Hyperspectral Image Restoration
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4367_ECCV_2022_paper.php

AUTHORS:        Wei He, Quanming Yao, Naoto Yokoya, Tatsumi Uezato, Hongyan Zhang, Liangpei Zhang
HIGHLIGHT:        In this work, we disentangle the 3D convolution into lightweight 2D spatial and spectral convolutions, and build a spectrum-aware search space for HSI restoration.

763, TITLE:        Neural Color Operators for Sequential Image Retouching
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4401_ECCV_2022_paper.php
AUTHORS:        Yili Wang, Xin Li, Kun Xu, Dongliang He, Qi Zhang, Fu Li, Errui Ding
HIGHLIGHT:        We propose a novel image retouching method by modeling the retouching process as performing a sequence of newly introduced trainable neural color operators.

764, TITLE:        Optimizing Image Compression via Joint Learning with Denoising
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4402_ECCV_2022_paper.php
AUTHORS:        Ka Leong Cheng, Yueqi Xie, Qifeng Chen
HIGHLIGHT:        Specifically, we propose a novel two-branch, weight-sharing architecture with plug-in feature denoisers to allow a simple and effective realization of the goal with little computational cost.

765, TITLE:        Restore Globally, Refine Locally: A Mask-Guided Scheme to Accelerate Super-Resolution Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4417_ECCV_2022_paper.php
AUTHORS:        Xiaotao Hu, Jun Xu, Shuhang Gu, Ming-Ming Cheng, Li Liu
HIGHLIGHT:        The different areas in an image often require different SR intensities by networks with different complexity. Motivated by this, in this paper, we propose a Mask Guided Acceleration (MGA) scheme to reduce the computational costs of existing SR networks while maintaining their SR capability.

766, TITLE:        Compiler-Aware Neural Architecture Search for On-Mobile Real-Time Super-Resolution
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4478_ECCV_2022_paper.php
AUTHORS:        Yushu Wu, Yifan Gong, Pu Zhao, Yanyu Li, Zheng Zhan, Wei Niu, Hao Tang, Minghai Qin, Bin Ren, Yanzhi Wang
HIGHLIGHT:        However, prior methods typically suffer from large amounts of computations and huge power consumption, causing difficulties for real-time inference, especially on resourcelimited platforms such as mobile devices. To mitigate this, we propose a compiler-aware SR neural architecture search (NAS) framework that conducts depth search and per-layer width search with adaptive SR blocks.

767, TITLE:        Modeling Mask Uncertainty in Hyperspectral Image Reconstruction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4507_ECCV_2022_paper.php
AUTHORS:        Jiamian Wang, Yulun Zhang, Xin Yuan, Ziyi Meng, Zhiqiang Tao
HIGHLIGHT:        This mask-specific training style will lead to a hardware miscalibration issue, which sets up barriers to deploying deep HSI models among different hardware and noisy environments. To address this challenge, we introduce mask uncertainty for HSI with a complete variational Bayesian learning treatment and explicitly model it through a mask decomposition inspired by real hardware.

768, TITLE:        Perceiving and Modeling Density for Image Dehazing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4508_ECCV_2022_paper.php
AUTHORS:        Tian Ye, Yunchen Zhang, Mingchao Jiang, Liang Chen, Yun Liu, Sixiang Chen, Erkang Chen
HIGHLIGHT:        To address the problem of modeling real-world haze degradation, we propose a novel Separable Hybrid Attention (SHA) module to perceive haze density by capturing positional-sensitive features in the orthogonal directions to achieve this goal.

769, TITLE:        Stripformer: Strip Transformer for Fast Image Deblurring
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4651_ECCV_2022_paper.php
AUTHORS:        Fu-Jen Tsai, Yan-Tsung Peng, Yen-Yu Lin, Chung-Chi Tsai, Chia-Wen Lin
HIGHLIGHT:        Inspired by the current success of transformers on computer vision and image processing tasks, we develop, Stripformer, a transformer-based architecture that constructs intra- and inter-strip tokens to reweight image features in the horizontal and vertical directions to catch blurred patterns with different orientations.

770, TITLE:        Deep Fourier-Based Exposure Correction Network with Spatial-Frequency Interaction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4678_ECCV_2022_paper.php
AUTHORS:        Jie Huang, Yajing Liu, Feng Zhao, Keyu Yan, Jinghao Zhang, Yukun Huang, Man Zhou, Zhiwei Xiong
HIGHLIGHT:        In this paper, we present a new perspective for exposure correction with spatial-frequency interaction.

771, TITLE:        Frequency and Spatial Dual Guidance for Image Dehazing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4734_ECCV_2022_paper.php
AUTHORS:        Hu Yu, Naishan Zheng, Man Zhou, Jie Huang, Zeyu Xiao, Feng Zhao
HIGHLIGHT:        In this paper, we propose a novel image dehazing framework with frequency and spatial dual guidance.

772, TITLE:        Towards Real-World HDRTV Reconstruction: A Data Synthesis-Based Approach
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4873_ECCV_2022_paper.php
AUTHORS:        Zhen Cheng, Tao Wang, Yong Li, Fenglong Song, Chang Chen, Zhiwei Xiong
HIGHLIGHT:        In this paper, we argue that, although traditional TMOs exploit efficient dynamic range compression priors, they have several drawbacks on modeling the realistic degradation: information over-preservation, color bias and possible artifacts, making the trained reconstruction networks hard to generalize well to real-world cases.

773, TITLE:	Learning Discriminative Shrinkage Deep Networks for Image Deconvolution
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4902_ECCV_2022_paper.php
AUTHORS:	Pin-Hung Kuo, Jinshan Pan, Shao-Yi Chien, Ming-Hsuan Yang
HIGHLIGHT:	However, explicitly designing these two terms is quite challenging and usually leads to complex optimization problems which are difficult to solve. This paper proposes an effective non-blind deconvolution approach by learning discriminative shrinkage functions to model these terms implicitly.

774, TITLE:	KXNet: A Model-Driven Deep Neural Network for Blind Super-Resolution
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4919_ECCV_2022_paper.php
AUTHORS:	Jiahong Fu, Hong Wang, Qi Xie, Qian Zhao, Deyu Meng, Zongben Xu
HIGHLIGHT:	Specifically, to solve the classical SISR model, we propose a simple-yet-effective iterative algorithm.

775, TITLE:	ARM: Any-Time Super-Resolution Method
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4931_ECCV_2022_paper.php
AUTHORS:	Bohong Chen, Mingbao Lin, Kekai Sheng, Mengdan Zhang, Peixian Chen, Ke Li, Liujuan Cao, Rongrong Ji
HIGHLIGHT:	This paper proposes an Any-time super-Resolution Method (ARM) to tackle the over-parameterized single image super-resolution (SISR) models.

776, TITLE:	Attention-Aware Learning for Hyperparameter Prediction in Image Processing Pipelines
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4948_ECCV_2022_paper.php
AUTHORS:	Haina Qin, Longfei Han, Juan Wang, Congxuan Zhang, Yanwei Li, Bing Li, Weiming Hu
HIGHLIGHT:	To this end, we propose an attention-aware learning method that integrates the parameter prediction network into ISP tuning and utilizes the multi-attention mechanism to generate the attentive mapping between the input RAW image and the parameter space.

777, TITLE:	RealFlow: EM-Based Realistic Optical Flow Dataset Generation from Videos
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4989_ECCV_2022_paper.php
AUTHORS:	Yunhui Han, Kunming Luo, Ao Luo, Jiangyu Liu, Haoqiang Fan, Guiming Luo, Shuaicheng Liu
HIGHLIGHT:	Besides, existing approaches try to adapt the trained model on synthetic datasets to authentic videos, which inevitably suffers from domain discrepancy and hinders the performance for real-world applications. To solve these problems, we propose RealFlow, an Expectation-Maximization based framework that can create large-scale optical flow datasets directly from any unlabeled realistic videos.

778, TITLE:	Memory-Augmented Model-Driven Network for Pansharpening
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5069_ECCV_2022_paper.php
AUTHORS:	Keyu Yan, Man Zhou, Li Zhang, Chengjun Xie
HIGHLIGHT:	In this paper, we propose a novel memory-augmented model-driven deep unfolding network for pan-sharpening.

779, TITLE:	All You Need Is RAW: Defending against Adversarial Attacks with Camera Image Pipelines
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5361_ECCV_2022_paper.php
AUTHORS:	Yuxuan Zhang, Bo Dong, Felix Heide
HIGHLIGHT:	Specifically, we proposed a model-agnostic adversarial defensive method, which maps the input RGB images to Bayer RAW space and back to output RGB using a learned camera image signal processing (ISP) pipeline to eliminate potential adversarial patterns.

780, TITLE:	Ghost-Free High Dynamic Range Imaging with Context-Aware Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5392_ECCV_2022_paper.php
AUTHORS:	Zhen Liu, Yinglong Wang, Bing Zeng, Shuaicheng Liu
HIGHLIGHT:	In this paper, we propose a novel Context-aware Vision Transformer (CA-ViT) for ghost-free high dynamic range imaging.

781, TITLE:	Style-Guided Shadow Removal
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5580_ECCV_2022_paper.php
AUTHORS:	Jin Wan, Hui Yin, Zhenyao Wu, Xinyi Wu, Yanting Liu, Song Wang
HIGHLIGHT:	After shadow removal, the shadow and non-shadow regions may exhibit inconsistent appearance, leading to a visually disharmonious image. To address this problem, we propose a style-guided shadow removal network (SG-ShadowNet) for better image style consistency after shadow removal.

782, TITLE:	D2C-SR: A Divergence to Convergence Approach for Real-World Image Super-Resolution
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5599_ECCV_2022_paper.php
AUTHORS:	Youwei Li, Haibin Huang, Lanpeng Jia, Haoqiang Fan, Shuaicheng Liu
HIGHLIGHT:	In this paper, we present D2C-SR, a novel framework for the task of real-world image super-resolution.

783, TITLE:	GRIT-VLP: Grouped Mini-Batch Sampling for Efficient Vision and Language Pre-training
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5643_ECCV_2022_paper.php
AUTHORS:	Jaeseok Byun, Taebaek Hwang, Jianlong Fu, Taesup Moon

HIGHLIGHT: In contrast to the mainstream VLP methods, we highlight that two routinely applied steps during pre-training have crucial impact on the performance of the pre-trained model: in-batch hard negative sampling for image-text matching (ITM) and assigning the large masking probability for the masked language modeling (MLM).

784, TITLE: Efficient Video Deblurring Guided by Motion Magnitude
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5697_ECCV_2022_paper.php
AUTHORS: Yusheng Wang, Yunfan Lu, Ye Gao, Lin Wang, Zhihang Zhong, Yinqiang Zheng, Atsushi Yamashita
HIGHLIGHT: To this end, we propose a novel framework that utilizes the motion magnitude prior (MMP) as guidance for efficient deep video deblurring.We then build a dataset including the blurry frame and MMP pairs.

785, TITLE: Single Frame Atmospheric Turbulence Mitigation: A Benchmark Study and a New Physics-Inspired Transformer Model
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5775_ECCV_2022_paper.php
AUTHORS: Zhiyuan Mao, Ajay Jaiswal, Zhangyang Wang, Stanley H. Chan
HIGHLIGHT: To address this problem, in this paper, we propose a physics-inspired transformer model for imaging through atmospheric turbulence.

786, TITLE: Contextformer: A Transformer with Spatio-Channel Attention for Context Modeling in Learned Image Compression
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6046_ECCV_2022_paper.php
AUTHORS: A. Burakhan Koyuncu, Han Gao, Atanas Boev, Georgii Gaikov, Elena Alshina, Eckehard Steinbach
HIGHLIGHT: Inspired by the adaptive characteristics of the transformers, we propose a transformer-based context model, named Contextformer, which generalizes the de facto standard attention mechanism to spatio-channel attention.

787, TITLE: Image Super-Resolution with Deep Dictionary
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6048_ECCV_2022_paper.php
AUTHORS: Shunta Maeda
HIGHLIGHT: We propose an end-to-end super-resolution network with a deep dictionary (SRDD), where a high-resolution dictionary is explicitly learned without sacrificing the advantages of deep learning.

788, TITLE: TempFormer: Temporally Consistent Transformer for Video Denoising
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6092_ECCV_2022_paper.php
AUTHORS: Mingyang Song, Yang Zhang, Tun&ccedil, O. Ayd?n
HIGHLIGHT: In this paper, we propose a modified ViT architecture for video processing tasks, introducing a new training strategy and loss function to enhance temporal consistency without compromising spatial quality.

789, TITLE: RAWtoBit: A Fully End-to-End Camera ISP Network
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6222_ECCV_2022_paper.php
AUTHORS: Wooseok Jeong, Seung-Won Jung
HIGHLIGHT: In this paper, we investigate the designing of a fully end-to-end optimized camera ISP incorporating image compression.

790, TITLE: DRCNet: Dynamic Image Restoration Contrastive Network
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6389_ECCV_2022_paper.php
AUTHORS: Fei Li, Lingfeng Shen, Yang Mi, Zhenbo Li
HIGHLIGHT: Most existing image-restoration models employed static CNN-based models, where the fixed learned filters cannot fit the diverse degradation well. To address this, in this paper, we propose a novel Dynamic Image Restoration Contrastive Network (DRCNet).

791, TITLE: Zero-Shot Learning for Reflection Removal of Single 360-Degree Image
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6418_ECCV_2022_paper.php
AUTHORS: Byeong-Ju Han, Jae-Young Sim
HIGHLIGHT: However, in many cases, real reflection artifacts are sharp and intensive enough such that even humans cannot completely distinguish between the transmitted and reflected scenes. In this paper, we attempt to remove such challenging reflection artifacts using 360-degree images.

792, TITLE: Transformer with Implicit Edges for Particle-Based Physics Simulation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6639_ECCV_2022_paper.php
AUTHORS: Yidi Shao, Chen Change Loy, Bo Dai
HIGHLIGHT: Consequently, in this paper we propose a novel Transformer-based method, dubbed as Transformer with Implicit Edges (TIE), to capture the rich semantics of particle interactions in an edge-free manner.

793, TITLE: Rethinking Video Rain Streak Removal: A New Synthesis Model and a Deraining Network with Video Rain Prior
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6798_ECCV_2022_paper.php
AUTHORS: Shuai Wang, Lei Zhu, Huazhu Fu, Jing Qin, Carola-Bibiane Sch&ouml,nlieb, Wei Feng, Song Wang
HIGHLIGHT: Existing video synthetic models and deraining methods are mostly built on a simplified video rain model assuming that rain streak layers of different video frames are uncorrelated, thereby producing degraded performance on real-world rainy videos. To address this problem, we devise a new video rain synthesis model with the concept of rain streak motions to enforce a

consistency of rain layers between video frames, thereby generating more realistic rainy video data for network training, and then develop a recurrent disentangled deraining network (RDD-Net) based on our video rain model for boosting video deraining.

794, TITLE: Super-Resolution by Predicting Offsets: An Ultra-Efficient Super-Resolution Network for Rasterized Images
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7199_ECCV_2022_paper.php
AUTHORS: Jinjin Gu, Haoming Cai, Chenyu Dong, Ruofan Zhang, Yulun Zhang, Wenming Yang, Chun Yuan
HIGHLIGHT: We present a new method for real-time SR for computer graphics, namely Super-Resolution by Predicting Offsets (SRPO).

795, TITLE: Animation from Blur: Multi-modal Blur Decomposition with Motion Guidance
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7210_ECCV_2022_paper.php
AUTHORS: Zhihang Zhong, Xiao Sun, Zhirong Wu, Yinqiang Zheng, Stephen Lin, Imari Sato
HIGHLIGHT: Therefore, the results tend to converge to the mean of the multi-modal possibilities. In this paper, we explicitly account for such motion ambiguity, allowing us to generate multiple plausible solutions all in sharp detail.

796, TITLE: AlphaVC: High-Performance and Efficient Learned Video Compression
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7541_ECCV_2022_paper.php
AUTHORS: Yibo Shi, Yunying Ge, Jing Wang, Jue Mao
HIGHLIGHT: In this paper, we propose several techniques to effectively improve the performance.

797, TITLE: Content-Oriented Learned Image Compression
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7542_ECCV_2022_paper.php
AUTHORS: Meng Li, Shangyin Gao, Yihui Feng, Yibo Shi, Jing Wang
HIGHLIGHT: In this paper, we propose a content-oriented image compression method, which handles different kinds of image contents with different strategies.

798, TITLE: RRSR:Reciprocal Reference-Based Image Super-Resolution with Progressive Feature Alignment and Selection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7808_ECCV_2022_paper.php
AUTHORS: Lin Zhang, Xin Li, Dongliang He, Fu Li, Yili Wang, Zhaoxiang Zhang
HIGHLIGHT: While previous state-of-the-art RefSR methods mainly focus on improving the efficacy and robustness of reference feature transfer, it is generally overlooked that a well reconstructed SR image should enable better SR reconstruction for its similar LR images when it is referred to as. Therefore, in this work, we propose a reciprocal learning framework that can appropriately leverage such a fact to reinforce the learning of a RefSR network.

799, TITLE: Contrastive Prototypical Network with Wasserstein Confidence Penalty
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/121_ECCV_2022_paper.php
AUTHORS: Haoqing Wang, Zhi-Hong Deng
HIGHLIGHT: To this end, we propose Wasserstein Confidence Penalty which can impose appropriate penalty on overconfident predictions based on the semantic relationships among pseudo classes.

800, TITLE: Learn-to-Decompose: Cascaded Decomposition Network for Cross-Domain Few-Shot Facial Expression Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/790_ECCV_2022_paper.php
AUTHORS: Xinyi Zou, Yan Yan, Jing-Hao Xue, Si Chen, Hanzi Wang
HIGHLIGHT: In this paper, we address the compound FER task in the cross-domain few-shot learning (FSL) setting, which requires only a few samples of compound expressions in the target domain.

801, TITLE: Self-Support Few-Shot Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1866_ECCV_2022_paper.php
AUTHORS: Qi Fan, Wenjie Pei, Yu-Wing Tai, Chi-Keung Tang
HIGHLIGHT: Motivated by the simple Gestalt principle that pixels belonging to the same object are more similar than those to different objects of same class, we propose a novel self-support matching idea to alleviate this problem.

802, TITLE: Few-Shot Object Detection with Model Calibration
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1868_ECCV_2022_paper.php
AUTHORS: Qi Fan, Chi-Keung Tang, Yu-Wing Tai
HIGHLIGHT: In this paper, we pinpoint and comprehensively investigate the model bias problem in FSOD models and propose a simple yet effective method to address the model bias problem with the facilitation of model calibrations in three levels: 1) Backbone calibration to preserve the well-learned prior knowledge and relieve the model bias toward base classes, 2) RPN calibration to rescue unlabeled objects of novel classes and, 3) Detector calibration to prevent the model bias toward a few training samples for novel classes.

803, TITLE: Self-Supervision Can Be a Good Few-Shot Learner
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1882_ECCV_2022_paper.php
AUTHORS: Yuning Lu, Liangjian Wen, Jianzhuang Liu, Yajing Liu, Xinmei Tian
HIGHLIGHT: From an information-theoretic perspective, we propose an effective unsupervised FSL method, learning representations with self-supervision.

804, TITLE: tSF: Transformer-Based Semantic Filter for Few-Shot Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2494_ECCV_2022_paper.php

AUTHORS: Jinxiang Lai, Siqian Yang, Wenlong Liu, Yi Zeng, Zhongyi Huang, Wenlong Wu, Jun Liu, Bin-Bin Gao, Chengjie Wang
HIGHLIGHT: To this end, we propose a light and universal module named transformer-based Semantic Filter (tSF), which can be applied for different FSL tasks.

805, TITLE: Adversarial Feature Augmentation for Cross-Domain Few-Shot Classification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2507_ECCV_2022_paper.php
AUTHORS: Yanxu Hu, Andy J. Ma
HIGHLIGHT: However, most existing works may fail to generalize to novel classes due to the probably large domain discrepancy across domains. To address this issue, we propose a novel adversarial feature augmentation (AFA) method to bridge the domain gap in few-shot learning.

806, TITLE: Constructing Balance from Imbalance for Long-Tailed Image Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2512_ECCV_2022_paper.php
AUTHORS: Yue Xu, Yong-Lu Li, Jiefeng Li, Cewu Lu
HIGHLIGHT: To alleviate the head-to-tail bias, we propose a concise paradigm by progressively adjusting label space and dividing the head classes and tail classes, dynamically constructing balance from imbalance to facilitate the classification.

807, TITLE: On Multi-Domain Long-Tailed Recognition, Imbalanced Domain Generalization and Beyond
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2583_ECCV_2022_paper.php
AUTHORS: Yuzhe Yang, Hao Wang, Dina Katabi
HIGHLIGHT: We formalize the task of Multi-Domain Long-Tailed Recognition (MDLT), which learns from multi-domain imbalanced data, addresses label imbalance, domain shift, and divergent label distributions across domains, and generalizes to all domain-class pairs.

808, TITLE: Few-Shot Video Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2666_ECCV_2022_paper.php
AUTHORS: Qi Fan, Chi-Keung Tang, Yu-Wing Tai
HIGHLIGHT: We introduce Few-Shot Video Object Detection (FSVOD) with three contributions to visual learning in our highly diverse and dynamic world: 1) a large-scale video dataset FSVOD-500 comprising of 500 classes with class-balanced videos in each category for few-shot learning 2) a novel Tube Proposal Network (TPN) to generate high-quality video tube proposals for aggregating feature representation for the target video object which can be highly dynamic 3) a strategically improved Temporal Matching Network (TMN+) for matching representative query tube features with better discriminative ability thus achieving higher diversity.

809, TITLE: Worst Case Matters for Few-Shot Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3005_ECCV_2022_paper.php
AUTHORS: Minghao Fu, Yun-Hao Cao, Jianxin Wu
HIGHLIGHT: Since this objective is not accessible, we propose to reduce the standard deviation and increase the average accuracy simultaneously.

810, TITLE: Exploring Hierarchical Graph Representation for Large-Scale Zero-Shot Image Classification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3060_ECCV_2022_paper.php
AUTHORS: Kai Yi, Xiaoqian Shen, Yunhao Gou, Mohamed Elhoseiny
HIGHLIGHT: We propose a Hierarchical Graphical knowledge Representation framework for the confidence-based classification method, dubbed as HGR-Net.

811, TITLE: Doubly Deformable Aggregation of Covariance Matrices for Few-Shot Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3080_ECCV_2022_paper.php
AUTHORS: Zhitong Xiong, Haopeng Li, Xiao Xiang Zhu
HIGHLIGHT: For the few-shot segmentation task, the main challenge is how to accurately measure the semantic correspondence between the support and query samples with limited training data. To address this problem, we propose to aggregate the learnable covariance matrices with a deformable 4D Transformer to effectively predict the segmentation map.

812, TITLE: Dense Cross-Query-and-Support Attention Weighted Mask Aggregation for Few-Shot Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3179_ECCV_2022_paper.php
AUTHORS: Xinyu Shi, Dong Wei, Yu Zhang, Donghuan Lu, Munan Ning, Jiashun Chen, Kai Ma, Yefeng Zheng
HIGHLIGHT: In this paper, we propose Dense pixel-wise Cross-query-and-support Attention weighted Mask Aggregation (DCAMA), where both foreground and background support information are fully exploited via multi-level pixel-wise correlations between paired query and support features.

813, TITLE: Rethinking Clustering-Based Pseudo-Labeling for Unsupervised Meta-Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3487_ECCV_2022_paper.php
AUTHORS: Xingping Dong, Jianbing Shen, Ling Shao
HIGHLIGHT: However, it often suffers from label inconsistency and limited diversity, which leads to poor performance. In this work, we prove that the core reason for this comes from the lack of a clustering-friendly property in the embedding space.

814, TITLE: CLASTER: Clustering with Reinforcement Learning for Zero-Shot Action Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3591_ECCV_2022_paper.php
AUTHORS: Shreyank N Gowda, Laura Sevilla-Lara, Frank Keller, Marcus Rohrbach

HIGHLIGHT: We propose a novel cluster-based representation, which regularizes the learning process, yielding a representation that generalizes well to instances from unseen classes.

815, TITLE: Few-Shot Class-Incremental Learning for 3D Point Cloud Objects
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3641_ECCV_2022_paper.php
AUTHORS: Townim Chowdhury, Ali Cheraghian, Sameera Ramasinghe, Sahar Ahmadi, Morteza Saberi, Shafin Rahman
HIGHLIGHT: In this paper, we address FSCIL in the 3D domain.

816, TITLE: Meta-Learning with Less Forgetting on Large-Scale Non-stationary Task Distributions
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3645_ECCV_2022_paper.php
AUTHORS: Zhenyi Wang, Li Shen, Le Fang, Qiuling Suo, Donglin Zhan, Tiehang Duan, Mingchen Gao
HIGHLIGHT: Two key challenges arise in this more realistic setting: (i) how to use unlabeled data in the presence of a large amount of unlabeled out-of-distribution (OOD) data and (ii) how to prevent catastrophic forgetting on previously learned task distributions due to the task distribution shift. We propose an OOD Robust and knowleDge presErved semi-supeRvised meta-learning approach (ORDER) we use ORDER to denote the task distributions sequentially arrive with some ORDER, to tackle these two major challenges.

817, TITLE: DNA: Improving Few-Shot Transfer Learning with Low-Rank Decomposition and Alignment
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4282_ECCV_2022_paper.php
AUTHORS: Ziyu Jiang, Tianlong Chen, Xuxi Chen, Yu Cheng, Luowei Zhou, Lu Yuan, Ahmed Awadallah, Zhangyang Wang
HIGHLIGHT: In this paper, we proposed to boost the transferability of the self-supervised pre-trained models on cross-domain tasks via a novel self-supervised alignment step on the target domain using only unlabeled data before conducting the downstream supervised fine-tuning.

818, TITLE: Learning Instance and Task-Aware Dynamic Kernels for Few-Shot Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4343_ECCV_2022_paper.php
AUTHORS: Rongkai Ma, Pengfei Fang, Gil Avraham, Yan Zuo, Tianyu Zhu, Tom Drummond, Mehrtash Harandi
HIGHLIGHT: In this paper, we propose to learn the dynamic kernels of a convolution network as a function of the task at hand, enabling faster generalization.

819, TITLE: Open-World Semantic Segmentation via Contrasting and Clustering Vision-Language Embedding
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4879_ECCV_2022_paper.php
AUTHORS: Quande Liu, Youpeng Wen, Jianhua Han, Chunjing Xu, Hang Xu, Xiaodan Liang
HIGHLIGHT: In this paper, we propose a new open-world semantic segmentation pipeline that makes the first attempt to learn to segment semantic objects of various open-world categories without any efforts on dense annotations, by purely exploiting the image-caption data that naturally exist on the Internet.

820, TITLE: Few-Shot Classification with Contrastive Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4929_ECCV_2022_paper.php
AUTHORS: Zhanyuan Yang, Jinghua Wang, Yingying Zhu
HIGHLIGHT: In this paper, we propose a novel contrastive learning-based framework that seamlessly integrates contrastive learning into both stages to improve the performance of few-shot classification.

821, TITLE: Time-rEversed diffusioN tEnsor Transformer: A New TENET of Few-Shot Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5009_ECCV_2022_paper.php
AUTHORS: Shan Zhang, Naila Murray, Lei Wang, Piotr Koniusz
HIGHLIGHT: In this paper, we tackle the challenging problem of Few-shot Object Detection.

822, TITLE: Self-Promoted Supervision for Few-Shot Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5119_ECCV_2022_paper.php
AUTHORS: Bowen Dong, Pan Zhou, Shuicheng Yan, Wangmeng Zuo
HIGHLIGHT: In this work, we empirically find that with the same few-shot learning frameworks, replacing the widely used CNN feature extractor with a ViT model often severely impairs few-shot classification performance.

823, TITLE: Few-Shot Object Counting and Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5138_ECCV_2022_paper.php
AUTHORS: Thanh Nguyen, Chau Pham, Khoi Nguyen, Minh Hoai
HIGHLIGHT: Given a few exemplar bounding boxes of a target object class, we seek to count and detect all the objects of the target class.

824, TITLE: Rethinking Few-Shot Object Detection on a Multi-Domain Benchmark
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5317_ECCV_2022_paper.php
AUTHORS: Kibok Lee, Hao Yang, Satyaki Chakraborty, Zhaowei Cai, Gurumurthy Swaminathan, Avinash Ravichandran, Onkar Dabeer
HIGHLIGHT: We propose a Multi-dOmain Few-Shot Object Detection (MoFSOD) benchmark consisting of 10 datasets from a wide range of domains to evaluate FSOD algorithms.

825, TITLE: Cross-Domain Cross-Set Few-Shot Learning via Learning Compact and Aligned Representations
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5393_ECCV_2022_paper.php

AUTHORS: Wentao Chen, Zhang Zhang, Wei Wang, Liang Wang, Zilei Wang, Tieniu Tan
HIGHLIGHT: In this paper, we consider the domain shift problem in FSL and aim to address the domain gap between the support set and the query set.

826, TITLE: Mutually Reinforcing Structure with Proposal Contrastive Consistency for Few-Shot Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5518_ECCV_2022_paper.php
AUTHORS: Tianxue Ma, Mingwei Bi, Jian Zhang, Wang Yuan, Zhizhong Zhang, Yuan Xie, Shouhong Ding, Lizhuang Ma
HIGHLIGHT: The majority of former solutions are mainly based on meta-learning or transfer-learning, neglecting the fact that images from the base set might contain unlabeled novel-class objects, which easily leads to performance degradation and poor plasticity since those novel objects are served as the background. Based on the above phenomena, we propose a Mutually Reinforcing Structure Network (MRSN) to make rational use of unlabeled novel class instances in the base set.

827, TITLE: Dual Contrastive Learning with Anatomical Auxiliary Supervision for Few-Shot Medical Image Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5543_ECCV_2022_paper.php
AUTHORS: Huisi Wu, Fangyan Xiao, Chongxin Liang
HIGHLIGHT: In this paper, we present a few-shot segmentation model that employs anatomical auxiliary information from medical images without target classes for dual contrastive learning.

828, TITLE: Improving Few-Shot Learning through Multi-task Representation Learning Theory
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6144_ECCV_2022_paper.php
AUTHORS: Quentin Bouniot, Ievgen Redko, Romaric Audigier, Ang&eacute;lique Loesch, Amaury Habrard
HIGHLIGHT: In this paper, we consider the framework of multi-task representation (MTR) learning where the goal is to use source tasks to learn a representation that reduces the sample complexity of solving a target task.

829, TITLE: Tree Structure-Aware Few-Shot Image Classification via Hierarchical Aggregation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6519_ECCV_2022_paper.php
AUTHORS: Min Zhang, Siteng Huang, Wenbin Li, Donglin Wang
HIGHLIGHT: In this paper, we mainly focus on the problem of how to learn additional feature representations for few-shot image classification through pretext tasks (e.g., rotation or color permutation and so on).

830, TITLE: Inductive and Transductive Few-Shot Video Classification via Appearance and Temporal Alignments
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6592_ECCV_2022_paper.php
AUTHORS: Khoi D. Nguyen, Quoc-Huy Tran, Khoi Nguyen, Binh-Son Hua, Rang Nguyen
HIGHLIGHT: We present a novel method for few-shot video classification, which performs appearance and temporal alignments.

831, TITLE: Temporal and Cross-Modal Attention for Audio-Visual Zero-Shot Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6942_ECCV_2022_paper.php
AUTHORS: Otniel-Bogdan Mercea, Thomas Hummel, A. Sophia Koepke, Zeynep Akata
HIGHLIGHT: We propose a multi-modal and Temporal Cross-attention Framework for audio-visual generalised zero-shot learning.

832, TITLE: HM: Hybrid Masking for Few-Shot Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7077_ECCV_2022_paper.php
AUTHORS: Seonghyeon Moon, Samuel S. Sohn, Honglu Zhou, Sejong Yoon, Vladimir Pavlovic, Muhammad Haris Khan, Mubbasir Kapadia
HIGHLIGHT: In this paper, we develop a simple, effective, and efficient approach to enhance feature masking (FM).

833, TITLE: TransVLAD: Focusing on Locally Aggregated Descriptors for Few-Shot Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7722_ECCV_2022_paper.php
AUTHORS: Haoquan Li, Laoming Zhang, Daoan Zhang, Lang Fu, Peng Yang, Jianguo Zhang
HIGHLIGHT: This paper presents a transformer framework for few-shot learning, termed TransVLAD, with one focus showing the power of locally aggregated descriptors for few-shot learning.

834, TITLE: Kernel Relative-Prototype Spectral Filtering for Few-Shot Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/8003_ECCV_2022_paper.php
AUTHORS: Tao Zhang, Wu Huang
HIGHLIGHT: In this paper, we propose a framework of spectral filtering (shrinkage) for measuring the difference between query samples and prototypes, or namely the relative prototypes, in a reproducing kernel Hilbert space (RKHS).

835, TITLE: "This Is My Unicorn, Fluffy": Personalizing Frozen Vision-Language Representations
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/8098_ECCV_2022_paper.php
AUTHORS: Niv Cohen, Rinon Gal, Eli A. Meirom, Gal Chechik, Yuval Atzmon
HIGHLIGHT: We introduce a new learning setup called Personalized Vision &amp Language (PerVL) with two new benchmark datasets for retrieving and segmenting user-specific (personalized) concepts "in the wild.

836, TITLE: CLOSE: Curriculum Learning on the Sharing Extent towards Better One-Shot NAS
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/728_ECCV_2022_paper.php
AUTHORS: Zixuan Zhou, Xuefei Ning, Yi Cai, Jiashu Han, Yiping Deng, Yuhan Dong, Huazhong Yang, Yu Wang

HIGHLIGHT: But these improved methods introduce a large number of extra parameters and thus cause an undesirable trade-off between the training costs and the ranking quality. To alleviate the above issues, we propose to apply Curriculum Learning On Sharing Extent (CLOSE) to train the supernet both efficiently and effectively.

837, TITLE: Streamable Neural Fields
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/744_ECCV_2022_paper.php
AUTHORS: Junwoo Cho, Seungtae Nam, Daniel Rho, Jong Hwan Ko, Eunbyung Park
HIGHLIGHT: We propose streamable neural fields, a single model that consists of executable sub-networks of various widths.

838, TITLE: Gradient-Based Uncertainty for Monocular Depth Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1455_ECCV_2022_paper.php
AUTHORS: Julia Hornauer, Vasileios Belagiannis
HIGHLIGHT: We propose a post hoc uncertainty estimation approach for an already trained and thus fixed depth estimation model, represented by a deep neural network.

839, TITLE: Online Continual Learning with Contrastive Vision Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1940_ECCV_2022_paper.php
AUTHORS: Zhen Wang, Liu Liu, Yajing Kong, Jiaxian Guo, Dacheng Tao
HIGHLIGHT: This paper proposes a framework Contrastive Vision Transformer (CVT), which designs a focal contrastive learning strategy based on a transformer architecture, to achieve a better stability-plasticity trade-off for online CL.

840, TITLE: CPrune: Compiler-Informed Model Pruning for Efficient Target-Aware DNN Execution
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2171_ECCV_2022_paper.php
AUTHORS: Taeho Kim, Yongin Kwon, Jemin Lee, Taeho Kim, Sangtae Ha
HIGHLIGHT: We propose CPrune, a compiler-informed model pruning for efficient target-aware DNN execution to support an application with a required target accuracy.

841, TITLE: EAutoDet: Efficient Architecture Search for Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2483_ECCV_2022_paper.php
AUTHORS: Xiaoxing Wang, Jiale Lin, Juanping Zhao, Xiaokang Yang, Junchi Yan
HIGHLIGHT: In contrast, this paper introduces an efficient framework, named EAutoDet, that can discover practical backbone and FPN architectures for object detection in 1.4 GPU-days.

842, TITLE: A Max-Flow Based Approach for Neural Architecture Search
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2485_ECCV_2022_paper.php
AUTHORS: Chao Xue, Xiaoxing Wang, Junchi Yan, Chun-Guang Li
HIGHLIGHT: Unlike previous NAS strategies based on reinforcement learning, genetic algorithm, Bayesian optimization, and differential programming method, we formulate the NAS task as a Max-Flow problem on search space consisting of Directed Acyclic Graph (DAG) and thus propose a novel NAS approach, called MF-NAS, which defines the search space and designs the search strategy in a fully graphic manner.

843, TITLE: OccamNets: Mitigating Dataset Bias by Favoring Simpler Hypotheses
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2808_ECCV_2022_paper.php
AUTHORS: Robik Shrestha, Kushal Kafle, Christopher Kanan
HIGHLIGHT: We propose a new direction: modifying the network architecture to impose inductive biases that make the network robust to dataset bias.

844, TITLE: ERA: Enhanced Rational Activations
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3515_ECCV_2022_paper.php
AUTHORS: Martin Trimmel, Mihai Zanfir, Richard Hartley, Cristian Sminchisescu
HIGHLIGHT: Despite their apparent potential, prior formulations are either not safe, not smooth or not true rational functions, and they only work with careful initialisation. Aiming to mitigate these issues, we propose a novel, enhanced rational function, ERA, and investigate how to better accommodate the specific needs of these activations, to both network components and training regime.

845, TITLE: Convolutional Embedding Makes Hierarchical Vision Transformer Stronger
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3627_ECCV_2022_paper.php
AUTHORS: Cong Wang, Hongmin Xu, Xiong Zhang, Li Wang, Zhitong Zheng, Haifeng Liu
HIGHLIGHT: In this paper, we investigate the problem by profoundly exploring how the macro architecture of the hybrid CNNs/ViTs enhances the performances of hierarchical ViTs.

846, TITLE: Active Label Correction Using Robust Parameter Update and Entropy Propagation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3670_ECCV_2022_paper.php
AUTHORS: Kwang In Kim
HIGHLIGHT: Also, naively selecting a batch of low confidence examples can result in redundant labeling of spatially adjacent examples. We present a new ALC algorithm that addresses these challenges.

847, TITLE: Unpaired Image Translation via Vector Symbolic Architectures
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3757_ECCV_2022_paper.php
AUTHORS: Justin Theiss, Jay Leverett, Daeil Kim, Aayush Prakash

HIGHLIGHT: However, if the source and target domains have a large semantic mismatch, existing techniques often suffer from source content corruption aka semantic flipping. To address this problem, we propose a new paradigm for image-to-image translation using Vector Symbolic Architectures (VSA), a theoretical framework which defines algebraic operations in a high-dimensional vector (hypervector) space.

848, TITLE: UniNet: Unified Architecture Search with Convolution, Transformer, and MLP
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4429_ECCV_2022_paper.php
AUTHORS: Jihao Liu, Xin Huang, Guanglu Song, Hongsheng Li, Yu Liu
HIGHLIGHT: In this work, we study the learnable combination of convolution, transformer, and MLP by proposing a novel unified architecture search approach.

849, TITLE: AMixer: Adaptive Weight Mixing for Self-Attention Free Vision Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4464_ECCV_2022_paper.php
AUTHORS: Yongming Rao, Wenliang Zhao, Jie Zhou, Jiwen Lu
HIGHLIGHT: In this paper, we thoroughly investigate the key differences between vision Transformers and recent all-MLP models.

850, TITLE: TinyViT: Fast Pretraining Distillation for Small Vision Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4537_ECCV_2022_paper.php
AUTHORS: Kan Wu, Jinnian Zhang, Houwen Peng, Mengchen Liu, Bin Xiao, Jianlong Fu, Lu Yuan
HIGHLIGHT: However, most prevailing ViT models suffer from huge number of parameters, restricting their applicability on devices with limited resources. To alleviate this issue, we propose TinyViT, a new family of tiny and efficient small vision transformers pretrained on large-scale datasets with our proposed fast distillation framework.

851, TITLE: Equivariant Hypergraph Neural Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4633_ECCV_2022_paper.php
AUTHORS: Jinwoo Kim, Saeyoon Oh, Sungjun Cho, Seunghoon Hong
HIGHLIGHT: On the other hand, tensor-based equivariant neural networks enjoy maximal expressiveness, but their application has been limited in hypergraphs due to heavy computation and strict assumptions on fixed-order hyperedges. We resolve these problems and present Equivariant Hypergraph Neural Network (EHNN), the first attempt to realize maximally expressive equivariant layers for general hypergraph learning.

852, TITLE: ScaleNet: Searching for the Model to Scale
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4681_ECCV_2022_paper.php
AUTHORS: Jiyang Xie, Xiu Su, Shan You, Zhanyu Ma, Fei Wang, Chen Qian
HIGHLIGHT: In this paper, we bridge both two components and propose ScaleNet to jointly search base model and scaling strategy so that the scaled large model can have more promising performance.

853, TITLE: Complementing Brightness Constancy with Deep Networks for Optical Flow Prediction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4899_ECCV_2022_paper.php
AUTHORS: Vincent Le Guen, Cl&eacute;ment Rambour, Nicolas Thome
HIGHLIGHT: Since BC is an approximate physical model violated in several situations, we propose to train a physically-constrained network complemented with a data-driven network.

854, TITLE: ViTAS: Vision Transformer Architecture Search
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4966_ECCV_2022_paper.php
AUTHORS: Xiu Su, Shan You, Jiyang Xie, Mingkai Zheng, Fei Wang, Chen Qian, Changshui Zhang, Xiaogang Wang, Chang Xu
HIGHLIGHT: In this paper, we argue that since ViTs mainly operate on token embeddings with little inductive bias, imbalance of channels for different architectures would worsen the weight-sharing assumption and cause the training instability as a result.

855, TITLE: LidarNAS: Unifying and Searching Neural Architectures for 3D Point Clouds
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5318_ECCV_2022_paper.php
AUTHORS: Chenxi Liu, Zhaoqi Leng, Pei Sun, Shuyang Cheng, Charles R. Qi, Yin Zhou, Mingxing Tan, Dragomir Anguelov
HIGHLIGHT: In this paper, we begin by proposing a unified framework of such, with the key idea being factorizing the neural networks into a series of view transforms and neural layers.

856, TITLE: Uncertainty-DTW for Time Series and Sequences
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5350_ECCV_2022_paper.php
AUTHORS: Lei Wang, Piotr Koniusz
HIGHLIGHT: Thus, in this paper, we propose to model the so-called aleatoric uncertainty of a differentiable (soft) version of DTW.

857, TITLE: Black-Box Few-Shot Knowledge Distillation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5384_ECCV_2022_paper.php
AUTHORS: Dang Nguyen, Sunil Gupta, Kien Do, Svetha Venkatesh

HIGHLIGHT: The distillation process often happens at an external party side where we do not have access to much data, and the teacher does not disclose its parameters due to security and privacy concerns. To overcome these challenges, we propose a black-box few-shot KD method to train the student with few unlabeled training samples and a black-box teacher.

858, TITLE: Revisiting Batch Norm Initialization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6138_ECCV_2022_paper.php
AUTHORS: Jim Davis, Logan Frank
HIGHLIGHT: We revisit the BN formulation and present a new initialization method and update approach for BN to address the aforementioned issues.

859, TITLE: SSBNet: Improving Visual Recognition Efficiency by Adaptive Sampling
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6178_ECCV_2022_paper.php
AUTHORS: Ho Man Kwan, Shenghui Song
HIGHLIGHT: In this paper, we show that using adaptive sampling as the main component in a deep neural network can improve network efficiency.

860, TITLE: Filter Pruning via Feature Discrimination in Deep Neural Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6835_ECCV_2022_paper.php
AUTHORS: Zhiqiang He, Yaguan Qian, Yuqi Wang, Bin Wang, Xiaohui Guan, Zhaoquan Gu, Xiang Ling, Shaoning Zeng, Haijiang Wang, Wujie Zhou
HIGHLIGHT: Hence, we propose Distinguishing Layer Pruning based on RFC (DLRFC), i.e., discriminately prune the filters in different layers, which avoids measuring filters between different layers directly against filter criteria.

861, TITLE: LA3: Efficient Label-Aware AutoAugment
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6978_ECCV_2022_paper.php
AUTHORS: Mingjun Zhao, Shan Lu, Zixuan Wang, Xiaoli Wang, Di Niu
HIGHLIGHT: In this paper, we propose a novel two-stage data augmentation algorithm, named Label-Aware AutoAugment (LA3), which takes advantage of the label information, and learns augmentation policies separately for samples of different labels.

862, TITLE: Interpretations Steered Network Pruning via Amortized Inferred Saliency Maps
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7153_ECCV_2022_paper.php
AUTHORS: Alireza Ganjdanesh, Shangqian Gao, Heng Huang
HIGHLIGHT: However, these metrics mainly focus on the model's 'outputs' or 'weights' and neglect its 'interpretations' information. To fill in this gap, we propose to address the channel pruning problem from a novel perspective by leveraging the interpretations of a model to steer the pruning process, thereby utilizing information from both inputs and outputs of the model.

863, TITLE: BA-Net: Bridge Attention for Deep Convolutional Neural Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7186_ECCV_2022_paper.php
AUTHORS: Yue Zhao, Junzhou Chen, Zirui Zhang, Ronghui Zhang
HIGHLIGHT: In attention mechanism research, most existing methods are hard to utilize well the information of the neural network with high computing efficiency due to heavy feature compression in the attention layer. This paper proposes a simple and general approach named Bridge Attention to address this issue.

864, TITLE: SAU: Smooth Activation Function Using Convolution with Approximate Identities
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7555_ECCV_2022_paper.php
AUTHORS: Koushik Biswas, Sandeep Kumar, Shilpak Banerjee, Ashish Kumar Pandey
HIGHLIGHT: We propose new smooth approximations of a non-differentiable activation function by convolving it with approximate identities.

865, TITLE: Multi-Exit Semantic Segmentation Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7964_ECCV_2022_paper.php
AUTHORS: Alexandros Kouris, Stylianos I. Venieris, Stefanos Laskaridis, Nicholas Lane
HIGHLIGHT: To this end, we propose a framework for converting state-of-the-art segmentation CNNs to Multi-Exit Semantic Segmentation (MESS) networks: specially trained models that employ parametrised early exits along their depth to i) dynamically save computation during inference on easier samples and ii) save training and maintenance cost by offering a post-training customisable speed-accuracy trade-off.

866, TITLE: Almost-Orthogonal Layers for Efficient General-Purpose Lipschitz Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7968_ECCV_2022_paper.php
AUTHORS: Bernd Prach, Christoph H. Lampert
HIGHLIGHT: In this work, we propose a new technique for constructing such Lipschitz networks that has a number of desirable properties: it can be applied to any linear network layer (fully-connected or convolutional), it provides formal guarantees on the Lipschitz constant, it is easy to implement and efficient to run, and it can be combined with any training objective and optimization method.

867, TITLE: \texttt{\textbf{PointScatter}}: Point Set Representation for Tubular Structure Extraction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/213_ECCV_2022_paper.php
AUTHORS: Dong Wang, Zhao Zhang, Ziwei Zhao, Yuhang Liu, Yihong Chen, Liwei Wang

HIGHLIGHT: Compared with the traditional mask representation, the point set representation enjoys its flexibility and representation ability, which would not be restricted by the fixed grid as the mask. Inspired by this, we propose PointScatter, an alternative to the segmentation models for the tubular structure extraction task.

868, TITLE: Check and Link: Pairwise Lesion Correspondence Guides Mammogram Mass Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/263_ECCV_2022_paper.php
AUTHORS: Ziwei Zhao, Dong Wang, Yihong Chen, Ziteng Wang, Liwei Wang
HIGHLIGHT: In this paper, we propose a new transformer-based framework CL-Net to learn lesion detection and pairwise correspondence in an end-to-end manner.

869, TITLE: Graph-Constrained Contrastive Regularization for Semi-Weakly Volumetric Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/399_ECCV_2022_paper.php
AUTHORS: Simon Rei&szlig,, Constantin Seibold, Alexander Freytag, Erik Rodner, Rainer Stiefelhagen
HIGHLIGHT: In this work, we investigate how models can be trained from sparsely annotated volumes, i.e. volumes with only individual slices annotated.

870, TITLE: Generalizable Medical Image Segmentation via Random Amplitude Mixup and Domain-Specific Image Restoration
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/482_ECCV_2022_paper.php
AUTHORS: Ziqi Zhou, Lei Qi, Yinghuan Shi
HIGHLIGHT: To this end, we present a novel generalizable medical image segmentation method.

871, TITLE: Auto-FedRL: Federated Hyperparameter Optimization for Multi-Institutional Medical Image Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1129_ECCV_2022_paper.php
AUTHORS: Pengfei Guo, Dong Yang, Ali Hatamizadeh, An Xu, Ziyue Xu, Wenqi Li, Can Zhao, Daguang Xu, Stephanie Harmon, Evrim Turkbey, Baris Turkbey, Bradford Wood, Francesca Patella, Elvira Stellato, Gianpaolo Carrafiello, Vishal M. Patel, Holger R. Roth
HIGHLIGHT: In this work, we propose an efficient reinforcement learning (RL)-based federated hyperparameter optimization algorithm, termed Auto-FedRL, in which an online RL agent can dynamically adjust hyperparameters of each client based on the current training progress.

872, TITLE: Personalizing Federated Medical Image Segmentation via Local Calibration
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1626_ECCV_2022_paper.php
AUTHORS: Jiacheng Wang, Yueming Jin, Liansheng Wang
HIGHLIGHT: In this paper, we propose a personalized federated framework with Local Calibration (LC-Fed), to leverage the inter-site in-consistencies in both feature- and prediction- levels to boost the segmentation.

873, TITLE: One-Shot Medical Landmark Localization by Edge-Guided Transform and Noisy Landmark Refinement
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1712_ECCV_2022_paper.php
AUTHORS: Zihao Yin, Ping Gong, Chunyu Wang, Yizhou Yu, Yizhou Wang
HIGHLIGHT: To handle the significant structure variations, we learn an end-to-end cascade of global alignment and local deformations, under the guidance of novel loss functions which incorporate edge information.

874, TITLE: Ultra-High-Resolution Unpaired Stain Transformation via Kernelized Instance Normalization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2310_ECCV_2022_paper.php
AUTHORS: Ming-Yang Ho, Min-Sheng Wu, Che-Ming Wu
HIGHLIGHT: Hence, we proposed a strategy for ultra-high-resolution unpaired image-to-image translation: Kernelized Instance Normalization (KIN), which preserves local information and successfully achieves seamless stain transformation with constant GPU memory usage.

875, TITLE: Med-DANet: Dynamic Architecture Network for Efficient Medical Volumetric Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2953_ECCV_2022_paper.php
AUTHORS: Wenxuan Wang, Chen Chen, Jing Wang, Sen Zha, Yan Zhang, Jiangyun Li
HIGHLIGHT: In this paper, we focus on multi-modal 3D MRI brain tumor segmentation and propose a dynamic architecture network named Med-DANet based on adaptive model selection to achieve effective accuracy and efficiency trade-off.

876, TITLE: ConCL: Concept Contrastive Learning for Dense Prediction Pre-training in Pathology Images
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3250_ECCV_2022_paper.php
AUTHORS: Jiawei Yang, Hanbo Chen, Yuan Liang, Junzhou Huang, Lei He, Jianhua Yao
HIGHLIGHT: Despite the extensive benchmarks in natural images for dense tasks, such studies are, unfortunately, absent in current works for pathology. Our paper in- tends to narrow this gap.

877, TITLE: CryoAI: Amortized Inference of Poses for Ab Initio Reconstruction of 3D Molecular Volumes from Real Cryo-EM Images
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3418_ECCV_2022_paper.php
AUTHORS: Axel Levy, Fr&eacute,d&eacute,ric Poitevin, Julien Martel, Youssef Nashed, Ariana Peck, Nina Miolane, Daniel Ratner, Mike Dunne, Gordon Wetzstein
HIGHLIGHT: We introduce cryoAI, an ab initio reconstruction algorithm for homogeneous conformations that uses direct gradient-based optimization of particle poses and the electron scattering potential from single-particle cryo-EM data.

878, TITLE: UniMiSS: Universal Medical Self-Supervised Learning via Breaking Dimensionality Barrier
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4059_ECCV_2022_paper.php
AUTHORS: Yutong Xie, Jianpeng Zhang, Yong Xia, Qi Wu
HIGHLIGHT: In this paper, we advocate bringing a wealth of 2D images like chest X-rays as compensation for the lack of 3D data, aiming to build a universal medical self-supervised representation learning framework, called UniMiSS.

879, TITLE: DLME: Deep Local-Flatness Manifold Embedding
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4800_ECCV_2022_paper.php
AUTHORS: Zelin Zang, Siyuan Li, Di Wu, Ge Wang, Kai Wang, Lei Shang, Baigui Sun, Hao Li, Stan Z. Li
HIGHLIGHT: The poor local connectivity of under-sampling data in the former step and inappropriate optimization objectives in the latter step leads to two problems: structural distortion and underconstrained embedding. This paper proposes a novel ML framework named Deep Local-flatness Manifold Embedding (DLME) to solve these problems.

880, TITLE: Semi-Supervised Keypoint Detector and Descriptor for Retinal Image Matching
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5066_ECCV_2022_paper.php
AUTHORS: Jiazhen Liu, Xirong Li, Qijie Wei, Jie Xu, Dayong Ding
HIGHLIGHT: For retinal image matching (RIM), we propose SuperRetina, the first end-to-end method with jointly trainable keypoint detector and descriptor.

881, TITLE: Graph Neural Network for Cell Tracking in Microscopy Videos
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5297_ECCV_2022_paper.php
AUTHORS: Tal Ben-Haim, Tammy Riklin Raviv
HIGHLIGHT: We present a novel graph neural network (GNN) approach for cell tracking in high-throughput microscopy videos.

882, TITLE: CXR Segmentation by AdaIN-Based Domain Adaptation and Knowledge Distillation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6338_ECCV_2022_paper.php
AUTHORS: Yujin Oh, Jong Chul Ye
HIGHLIGHT: Inspired by recent multi-domain image translation approaches, here we propose a novel segmentation framework using adap- tive instance normalization (AdaIN), so that a single generator is trained to perform both domain adaptation and semi-supervised segmentation tasks via knowledge distillation by simply changing task-specific AdaIN codes.

883, TITLE: Accurate Detection of Proteins in Cryo-Electron Tomograms from Sparse Labels
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6567_ECCV_2022_paper.php
AUTHORS: Qinwen Huang, Ye Zhou, Hsuan-Fu Liu, Alberto Bartesaghi
HIGHLIGHT: Classical template-based methods have high false-positive rates due to the very low signal-to-noise ratios (SNR) typical of CET volumes, while more recent neural-network based detection algorithms require extensive labeling, are very slow to train and can take days to run. To address these issues, we propose a novel particle detection framework that uses positive-unlabeled learning and exploits the unique properties of 3D tomograms to improve detection performance.

884, TITLE: K-SALSA: K-Anonymous Synthetic Averaging of Retinal Images via Local Style Alignment
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6974_ECCV_2022_paper.php
AUTHORS: Minkyu Jeon, Hyeonjin Park, Hyunwoo J. Kim, Michael Morley, Hyunghoon Cho
HIGHLIGHT: While prior works have explored image de-identification strategies based on synthetic averaging of images in other domains (e.g. facial images), existing techniques face difficulty in preserving both privacy and clinical utility in retinal images, as we demonstrate in our work. We therefore introduce k-SALSA, a generative adversarial network (GAN)-based framework for synthesizing retinal fundus images that summarize a given private dataset while satisfying the privacy notion of k-anonymity.

885, TITLE: RadioTransformer: A Cascaded Global-Focal Transformer for Visual Attention-Guided Disease Classification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7045_ECCV_2022_paper.php
AUTHORS: Moinak Bhattacharya, Shubham Jain, Prateek Prasanna
HIGHLIGHT: In this work, we present RadioTransformer, a novel visual attention-driven transformer framework, that leverages radiologists' gaze patterns and models their visuo-cognitive behavior for disease diagnosis on chest radiographs.

886, TITLE: Differentiable Zooming for Multiple Instance Learning on Whole-Slide Images
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/8070_ECCV_2022_paper.php
AUTHORS: Kevin Thandiackal, Boqi Chen, Pushpak Pati, Guillaume Jaume, Drew F. K. Williamson, Maria Gabrani, Orcun Goksel
HIGHLIGHT: In this paper, inspired by the pathological diagnostic process, we propose ZoomMIL, a method that learns to perform multi-level zooming in an end-to-end manner.

887, TITLE: Learning Uncoupled-Modulation CVAE for 3D Action-Conditioned Human Motion Synthesis
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/8_ECCV_2022_paper.php
AUTHORS: Chongyang Zhong, Lei Hu, Zihao Zhang, Shihong Xia
HIGHLIGHT: In this paper, we propose the Uncoupled-Modulation Conditional Variational AutoEncoder(UM-CVAE) to generate action-conditioned motions from scratch in an uncoupled manner.

888, TITLE: Towards Grand Unification of Object Tracking
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/116_ECCV_2022_paper.php
AUTHORS: Bin Yan, Yi Jiang, Peize Sun, Dong Wang, Zehuan Yuan, Ping Luo, Huchuan Lu

HIGHLIGHT: We present a unified method, termed Unicorn, that can simultaneously solve four tracking problems (SOT, MOT, VOS, MOTS) with a single network using the same model parameters.

889, TITLE: ByteTrack: Multi-Object Tracking by Associating Every Detection Box
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/315_ECCV_2022_paper.php
AUTHORS: Yifu Zhang, Peize Sun, Yi Jiang, Dongdong Yu, Fucheng Weng, Zehuan Yuan, Ping Luo, Wenyu Liu, Xinggang Wang
HIGHLIGHT: The objects with low detection scores, e.g. occluded objects, are simply thrown away, which brings non-negligible true object missing and fragmented trajectories. To solve this problem, we present a simple, effective and generic association method, tracking by associating almost every detection box instead of only the high score ones.

890, TITLE: Robust Multi-Object Tracking by Marginal Inference
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/317_ECCV_2022_paper.php
AUTHORS: Yifu Zhang, Chunyu Wang, Xinggang Wang, Wenjun Zeng, Wenyu Liu
HIGHLIGHT: To address the problem, we present an efficient approach to compute a marginal probability for each pair of objects in real time.

891, TITLE: PolarMOT: How Far Can Geometric Relations Take Us in 3D Multi-Object Tracking?
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/514_ECCV_2022_paper.php
AUTHORS: Aleksandr Kim, Guillem Brasó, Aljoša Ošep, Laura Leal-Taixé,
HIGHLIGHT: Most (3D) multi-object tracking methods rely on appearance-based cues for data association. By contrast, we investigate how far we can get by only encoding geometric relationships between objects in 3D space as cues for data-driven data association.

892, TITLE: Particle Video Revisited: Tracking through Occlusions Using Point Trajectories
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/561_ECCV_2022_paper.php
AUTHORS: Adam W. Harley, Zhaoyuan Fang, Katerina Fragkiadaki
HIGHLIGHT: In this paper, we revisit Sand and Teller's particle video approach, and study pixel tracking as a long-range motion estimation problem, where every pixel is described with a trajectory that locates it in multiple future frames.

893, TITLE: Tracking Objects As Pixel-Wise Distributions
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1185_ECCV_2022_paper.php
AUTHORS: Zelin Zhao, Ze Wu, Yueqing Zhuang, Boxun Li, Jiaya Jia
HIGHLIGHT: Unlike tracking via detected bounding boxes or center points, we propose tracking objects as pixel-wise distributions.

894, TITLE: CMT: Context-Matching-Guided Transformer for 3D Tracking in Point Clouds
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1253_ECCV_2022_paper.php
AUTHORS: Zhiyang Guo, Yunyao Mao, Wengang Zhou, Min Wang, Houqiang Li
HIGHLIGHT: To this end, we propose Context-Matching-Guided Transformer (CMT), a Siamese tracking paradigm for 3D single object tracking.

895, TITLE: Towards Generic 3D Tracking in RGBD Videos: Benchmark and Baseline
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1358_ECCV_2022_paper.php
AUTHORS: Jinyu Yang, Zhongqun Zhang, Zhe Li, Hyung Jin Chang, Aleš Leonardis, Feng Zheng
HIGHLIGHT: Thus, in this paper, we investigate a novel problem: is it possible to track a generic (class-agnostic) 3D object in RGBD videos and predict 3D bounding boxes of the object of interest?

896, TITLE: Hierarchical Latent Structure for Multi-modal Vehicle Trajectory Forecasting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1846_ECCV_2022_paper.php
AUTHORS: Dooseop Choi, KyoungWook Min
HIGHLIGHT: We observe that a similar problem, in which the generated trajectory is located between adjacent lanes, often arises in VAE-based trajectory forecasting models. To mitigate this problem, we introduce a hierarchical latent structure into the VAE-based forecasting model.

897, TITLE: AiATrack: Attention in Attention for Transformer Visual Tracking
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1951_ECCV_2022_paper.php
AUTHORS: Shenyuan Gao, Chunluan Zhou, Chao Ma, Xinggang Wang, Junsong Yuan
HIGHLIGHT: However, the independent correlation computation in the attention mechanism could result in noisy and ambiguous attention weights, which inhibits further performance improvement. To address this issue, we propose an attention in attention (AiA) module, which enhances appropriate correlations and suppresses erroneous ones by seeking consensus among all correlation vectors.

898, TITLE: Disentangling Architecture and Training for Optical Flow
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2206_ECCV_2022_paper.php
AUTHORS: Deqing Sun, Charles Herrmann, Fitsum Reda, Michael Rubinstein, David J. Fleet, William T. Freeman
HIGHLIGHT: To explore these questions, rather than develop a new model, we revisit three prominent models, PWC-Net, IRR-PWC and RAFT, with a common set of modern training techniques, and observe significantly better performance, demonstrating the importance and generality of these training details.

899, TITLE:	A Perturbation-Constrained Adversarial Attack for Evaluating the Robustness of Optical Flow
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2385_ECCV_2022_paper.php
AUTHORS:	Jenny Schmalfuss, Philipp Scholze, Andr&eacute;s Bruhn
HIGHLIGHT:	Hence, in this work, we propose a novel adversarial attack - the Perturbation-Constrained Flow Attack (PCFA) - that emphasizes destructivity over applicability as a real-world attack.

900, TITLE:	Robust Landmark-Based Stent Tracking in X-Ray Fluoroscopy
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2596_ECCV_2022_paper.php
AUTHORS:	Luojie Huang, Yikang Liu, Li Chen, Eric Z. Chen, Xiao Chen, Shanhui Sun
HIGHLIGHT:	In this paper, we propose an end-to-end deep learning framework for single stent tracking, which consists of three hierarchical modules: a U-Net for landmark detection, a ResNet for stent proposal and feature extraction, and a graph convolutional neural network for stent tracking that temporally aggregates both spatial information and appearance features.

901, TITLE:	Social ODE: Multi-agent Trajectory Forecasting with Neural Ordinary Differential Equations
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2620_ECCV_2022_paper.php
AUTHORS:	Song Wen, Hao Wang, Dimitris N. Metaxas
HIGHLIGHT:	Most previous methods use RNNs or Transformers to model agent dynamics in the temporal dimension and social pooling or GNNs to model interactions with other agents these approaches usually fail to learn the underlying continuous temporal dynamics and agent interactions explicitly. To address these problems, we propose Social ODE which explicitly models temporal agent dynamics and agent interactions.

902, TITLE:	Social-SSL: Self-Supervised Cross-Sequence Representation Learning Based on Transformers for Multi-agent Trajectory Prediction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2623_ECCV_2022_paper.php
AUTHORS:	Li-Wu Tsao, Yan-Kai Wang, Hao-Siang Lin, Hong-Han Shuai, Lai-Kuan Wong, Wen-Huang Cheng
HIGHLIGHT:	In this work, we propose Social-SSL that captures cross-sequence trajectory structures via self-supervised pre-training, which plays a crucial role in improving both data efficiency and generalizability of Transformer networks for trajectory prediction.

903, TITLE:	Diverse Human Motion Prediction Guided by Multi-level Spatial-Temporal Anchors
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2874_ECCV_2022_paper.php
AUTHORS:	Sirui Xu, Yu-Xiong Wang, Liang-Yan Gui
HIGHLIGHT:	In this paper, we propose a simple yet effective approach that disentangles randomly sampled codes with a deterministic learnable component named anchors to promote sample precision and diversity.

904, TITLE:	Learning Pedestrian Group Representations for Multi-modal Trajectory Prediction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3132_ECCV_2022_paper.php
AUTHORS:	Inhwan Bae, Jin-Hwi Park, Hae-Gon Jeon
HIGHLIGHT:	In this paper, we present a novel architecture named GP-Graph which has collective group representations for effective pedestrian trajectory prediction in crowded environments, and is compatible with all types of existing approaches.

905, TITLE:	Sequential Multi-View Fusion Network for Fast LiDAR Point Motion Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3145_ECCV_2022_paper.php
AUTHORS:	Gang Zhang, Xiaoyan Li, Zhenhua Wang
HIGHLIGHT:	Thus, we propose a novel sequential multi-view fusion network (SMVF), composed of a BEV branch and an RV branch, in charge of encoding the motion information and spatial information, respectively.

906, TITLE:	E-Graph: Minimal Solution for Rigid Rotation with Extensibility Graphs
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3671_ECCV_2022_paper.php
AUTHORS:	Yanyan Li, Federico Tombari
HIGHLIGHT:	In this paper, a new minimal solution is proposed to solve relative rotation estimation between two images without overlapping areas by exploiting a new graph structure, which we call Extensibility Graph (E-Graph).

907, TITLE:	Point Cloud Compression with Range Image-Based Entropy Model for Autonomous Driving
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3885_ECCV_2022_paper.php
AUTHORS:	Sukai Wang, Ming Liu
HIGHLIGHT:	In this paper, we propose a range image-based three-stage framework to compress the scanning LiDAR's point clouds using the entropy model.

908, TITLE:	Joint Feature Learning and Relation Modeling for Tracking: A One-Stream Framework
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3964_ECCV_2022_paper.php
AUTHORS:	Botao Ye, Hong Chang, Bingpeng Ma, Shiguang Shan, Xilin Chen
HIGHLIGHT:	The current popular two-stream, two-stage tracking framework extracts the template and the search region features separately and then performs relation modeling, thus the extracted features lack the awareness of the target and have limited target-background discriminability. To tackle the above issue, we propose a novel one-stream tracking (OSTrack) framework that unifies feature learning and relation modeling by bridging the template-search image pairs with bidirectional information flows.

909, TITLE:	MotionCLIP: Exposing Human Motion Generation to CLIP Space
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4022_ECCV_2022_paper.php
AUTHORS:	Guy Tevet, Brian Gordon, Amir Hertz, Amit H. Bermano, Daniel Cohen-Or

HIGHLIGHT: We introduce MotionCLIP, a 3D human motion auto-encoder featuring a latent embedding that is disentangled, well behaved, and supports highly semantic textual descriptions.

910, TITLE: Backbone Is All Your Need: A Simplified Architecture for Visual Object Tracking
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4252_ECCV_2022_paper.php
AUTHORS: Boyu Chen, Peixia Li, Lei Bai, Lei Qiao, Qiuhong Shen, Bo Li, Weihao Gan, Wei Wu, Wanli Ouyang
HIGHLIGHT: This paper presents a Simplified Tracking architecture (SimTrack) by leveraging a transformer backbone for joint feature extraction and interaction.

911, TITLE: Aware of the History: Trajectory Forecasting with the Local Behavior Data
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4269_ECCV_2022_paper.php
AUTHORS: Yiqi Zhong, Zhenyang Ni, Siheng Chen, Ulrich Neumann
HIGHLIGHT: Despite great improvements in trajectory forecasting with the guidance of high-definition maps, only a few works have explored such local historical information. In this work, we re-introduce this information as a new type of input data for trajectory forecasting systems: the local behavior data, which we conceptualize as a collection of location-specific historical trajectories.

912, TITLE: Optical Flow Training under Limited Label Budget via Active Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4388_ECCV_2022_paper.php
AUTHORS: Shuai Yuan, Xian Sun, Hannah Kim, Shuzhi Yu, Carlo Tomasi
HIGHLIGHT: We use a simple yet effective semi-supervised training method to show that even a small fraction of labels can improve flow accuracy by a significant margin over unsupervised training.

913, TITLE: Hierarchical Feature Embedding for Visual Tracking
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4400_ECCV_2022_paper.php
AUTHORS: Zhixiong Pi, Weitao Wan, Chong Sun, Changxin Gao, Nong Sang, Chen Li
HIGHLIGHT: A more favorable way is to produce features that emphasize both types of information in visual tracking. To achieve this, we propose a hierarchical feature embedding model which separately learns the instance and category information, and progressively embeds them.

914, TITLE: Tackling Background Distraction in Video Object Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4697_ECCV_2022_paper.php
AUTHORS: Suhwan Cho, Heansung Lee, Minhyeok Lee, Chaewon Park, Sungjun Jang, Minjung Kim, Sangyoun Lee
HIGHLIGHT: One of the main challenges in this task is the existence of background distractors that appear similar to the target objects. We propose three novel strategies to suppress such distractors: 1) a spatio-temporally diversified template construction scheme to obtain generalized properties of the target objects 2) a learnable distance-scoring function to exclude spatially-distant distractors by exploiting the temporal consistency between two consecutive frames 3) swap-and-attach augmentation to force each object to have unique features by providing training samples containing entangled objects.

915, TITLE: Social-Implicit: Rethinking Trajectory Prediction Evaluation and the Effectiveness of Implicit Maximum Likelihood Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4781_ECCV_2022_paper.php
AUTHORS: Abduallah Mohamed, Deyao Zhu, Warren Vu, Mohamed Elhoseiny, Christian Claudel
HIGHLIGHT: Yet, the BoN does not quantify the whole generated samples, resulting in an incomplete view of the model's prediction quality and performance. We propose a new metric, Average Mahalanobis Distance (AMD) to tackle this issue.

916, TITLE: TEMOS: Generating Diverse Human Motions from Textual Descriptions
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4806_ECCV_2022_paper.php
AUTHORS: Mathis Petrovich, Michael J. Black, G&uuml;l Varol
HIGHLIGHT: We propose TEMOS, a text-conditioned generative model leveraging variational autoencoder (VAE) training with human motion data, in combination with a text encoder that produces distribution parameters compatible with the VAE latent space.

917, TITLE: Tracking Every Thing in the Wild
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4933_ECCV_2022_paper.php
AUTHORS: Siyuan Li, Martin Danelljan, Henghui Ding, Thomas E. Huang, Fisher Yu
HIGHLIGHT: We introduce a new metric, Track Every Thing Accuracy (TETA), breaking tracking measurement into three sub-factors: localization, association, and classification, allowing comprehensive benchmarking of tracking performance even under inaccurate classification.

918, TITLE: HULC: 3D HUman Motion Capture with Pose Manifold SampLing and Dense Contact Guidance
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4961_ECCV_2022_paper.php
AUTHORS: Soshi Shimada, Vladislav Golyanik, Zhi Li, Patrick P&eacute;rez, Weipeng Xu, Christian Theobalt
HIGHLIGHT: Due to the inherent depth ambiguity of monocular settings, 3D motions captured with existing methods often contain severe artefacts such as incorrect body-scene inter-penetrations, jitter and body floating. To tackle these issues, we propose HULC, a new approach for 3D human MoCap which is aware of the scene geometry.

919, TITLE: Towards Sequence-Level Training for Visual Tracking
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5099_ECCV_2022_paper.php
AUTHORS: Minji Kim, Seungkwan Lee, Jungseul Ok, Bohyung Han, Minsu Cho

HIGHLIGHT: This work introduces a sequence-level training strategy for visual tracking based on reinforcement learning and discusses how a sequence-level design of data sampling, learning objectives, and data augmentation can improve the accuracy and robustness of tracking algorithms.

920, TITLE: Learned Monocular Depth Priors in Visual-Inertial Initialization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5257_ECCV_2022_paper.php
AUTHORS: Yunwen Zhou, Abhishek Kar, Eric Turner, Adarsh Kowdle, Chao X. Guo, Ryan C. DuToit, Konstantine Tsotsos
HIGHLIGHT: In practical scenarios where high-parallax or variable acceleration assumptions are rarely met (e.g. hovering aerial robot, smartphone AR user not gesticulating with phone), classical visual-inertial initialization formulations often become ill-conditioned and/or fail to meaningfully converge. In this paper we target visual-inertial initialization specifically for these low-excitation scenarios critical to in-the-wild usage.

921, TITLE: Robust Visual Tracking by Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5585_ECCV_2022_paper.php
AUTHORS: Matthieu Paul, Martin Danelljan, Christoph Mayer, Luc Van Gool
HIGHLIGHT: We propose a segmentation-centric tracking pipeline that not only produces a highly accurate segmentation mask, but also internally works with segmentation masks instead of bounding boxes.

922, TITLE: MeshLoc: Mesh-Based Visual Localization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5648_ECCV_2022_paper.php
AUTHORS: Vojtech Panek, Zuzana Kukelova, Torsten Sattler
HIGHLIGHT: In this work, we thus explore a more flexible alternative based on dense 3D meshes that does not require features matching between database images to build the scene representation.

923, TITLE: S2F2: Single-Stage Flow Forecasting for Future Multiple Trajectories Prediction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6002_ECCV_2022_paper.php
AUTHORS: Yu-Wen Chen, Hsuan-Kung Yang, Chu-Chi Chiu, Chun-Yi Lee
HIGHLIGHT: In this work, we present a single-stage framework, named S2F2, for forecasting multiple human trajectories from raw video images by predicting future optical flows.

924, TITLE: Large-Displacement 3D Object Tracking with Hybrid Non-local Optimization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6742_ECCV_2022_paper.php
AUTHORS: Xuhui Tian, Xinran Lin, Fan Zhong, Xueying Qin
HIGHLIGHT: In this paper we propose a fast and effective non-local 3D tracking method.

925, TITLE: FEAR: Fast, Efficient, Accurate and Robust Visual Tracker
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6990_ECCV_2022_paper.php
AUTHORS: Vasyl Borsuk, Roman Vei, Orest Kupyn, Tetiana Martyniuk, Igor Krashenyi, Ji?i Matas
HIGHLIGHT: We present FEAR, a family of fast, efficient, accurate, and robust Siamese visual trackers.

926, TITLE: PREF: Predictability Regularized Neural Motion Fields
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7092_ECCV_2022_paper.php
AUTHORS: Liangchen Song, Xuan Gong, Benjamin Planche, Meng Zheng, David Doermann, Junsong Yuan, Terrence Chen, Ziyan Wu
HIGHLIGHT: In this paper, we leverage a neural motion field for estimating the motion of all points in a multiview setting.

927, TITLE: View Vertically: A Hierarchical Network for Trajectory Prediction via Fourier Spectrums
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7230_ECCV_2022_paper.php
AUTHORS: Conghao Wong, Beihao Xia, Ziming Hong, Qinmu Peng, Wei Yuan, Qiong Cao, Yibo Yang, Xinge You
HIGHLIGHT: Accordingly, we propose a hierarchical network V$^2$-Net, which contains two sub-networks, to hierarchically model and predict agents' trajectories with trajectory spectrums.

928, TITLE: HVC-Net: Unifying Homography, Visibility, and Confidence Learning for Planar Object Tracking
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7396_ECCV_2022_paper.php
AUTHORS: Haoxian Zhang, Yonggen Ling
HIGHLIGHT: Existing methods tend to obtain wrong correspondences with changing appearance variations, camera-object relative motions and occlusions. To alleviate this problem, we present a unified convolutional neural network (CNN) model that jointly considers homography, visibility, and confidence.

929, TITLE: RamGAN: Region Attentive Morphing GAN for Region-Level Makeup Transfer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/803_ECCV_2022_paper.php
AUTHORS: Jianfeng Xiang, Junliang Chen, Wenshuang Liu, Xianxu Hou, Linlin Shen
HIGHLIGHT: In this paper, we propose a region adaptive makeup transfer GAN, called RamGAN, for precise region-level makeup transfer.

930, TITLE: SinNeRF: Training Neural Radiance Fields on Complex Scenes from a Single Image
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1064_ECCV_2022_paper.php
AUTHORS: Dejia Xu, Yifan Jiang, Peihao Wang, Zhiwen Fan, Humphrey Shi, Zhangyang Wang

HIGHLIGHT: In this work, we consider a more ambitious task: training neural radiance field, over realistically complex visual scenes, by "looking only once", i.e., using only a single view.

931, TITLE: Entropy-Driven Sampling and Training Scheme for Conditional Diffusion Generation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1069_ECCV_2022_paper.php
AUTHORS: Guangcong Zheng, Shengming Li, Hui Wang, Taiping Yao, Yang Chen, Shouhong Ding, Xi Li
HIGHLIGHT: However, due to the ability of the classifier to easily discriminate an incompletely generated image only with high-level structure, the gradient, which is a kind of class information guidance, tends to vanish early, leading to the collapse from conditional generation process into the unconditional process. To address this problem, we propose two simple but effective approaches from two perspectives.

932, TITLE: Accelerating Score-Based Generative Models with Preconditioned Diffusion Sampling
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1380_ECCV_2022_paper.php
AUTHORS: Hengyuan Ma, Li Zhang, Xiatian Zhu, Jianfeng Feng
HIGHLIGHT: We investigate this problem by viewing the diffusion sampling process as a Metropolis adjusted Langevin algorithm, which helps reveal the underlying cause to be ill-conditioned curvature. Under this insight, we propose a model-agnostic preconditioned diffusion sampling (PDS) method that leverages matrix preconditioning to alleviate the aforementioned problem.

933, TITLE: Learning to Generate Realistic LiDAR Point Clouds
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2118_ECCV_2022_paper.php
AUTHORS: Vlas Zyrianov, Xiyue Zhu, Shenlong Wang
HIGHLIGHT: We present LiDARGen, a novel, effective, and controllable generative model that produces realistic LiDAR point cloud sensory readings.

934, TITLE: RFNet-4D: Joint Object Reconstruction and Flow Estimation from 4D Point Clouds
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2282_ECCV_2022_paper.php
AUTHORS: Tuan-Anh Vu, Thanh Nguyen, Binh-Son Hua, Quang-Hieu Pham, Sai-Kit Yeung
HIGHLIGHT: In this paper, we propose a new network architecture, namely RFNet-4D, that jointly reconstruct objects and their motion flows from 4D point clouds.

935, TITLE: Diverse Image Inpainting with Normalizing Flow
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2814_ECCV_2022_paper.php
AUTHORS: Cairong Wang, Yiming Zhu, Chun Yuan
HIGHLIGHT: We propose Flow-Fill, a novel two-stage image inpainting framework that utilizes a conditional normalizing flow model to generate diverse structural priors in the first stage.

936, TITLE: Improved Masked Image Generation with Token-Critic
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2901_ECCV_2022_paper.php
AUTHORS: Jos&eacute, Lezama, Huiwen Chang, Lu Jiang, Irfan Essa
HIGHLIGHT: In this paper we introduce Token-Critic, an auxiliary model to guide the sampling of a non-autoregressive generative transformer.

937, TITLE: TREND: Truncated Generalized Normal Density Estimation of Inception Embeddings for GAN Evaluation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3604_ECCV_2022_paper.php
AUTHORS: Junghyuk Lee, Jong-Seok Lee
HIGHLIGHT: The Frechet Inception distance is one of the most widely used metrics for evaluation of GANs, which assumes that the features from a trained Inception model for a set of images follow a normal distribution. In this paper, we argue that this is an over-simplified assumption, which may lead to unreliable evaluation results, and more accurate density estimation can be achieved using a truncated generalized normal distribution.

938, TITLE: Exploring Gradient-Based Multi-directional Controls in GANs
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3673_ECCV_2022_paper.php
AUTHORS: Zikun Chen, Ruowei Jiang, Brendan Duke, Han Zhao, Parham Aarabi
HIGHLIGHT: However, they often suffer from imperfect disentanglement, or are unable to obtain multi-directional controls. In this work, in light of the above challenges, we propose a novel approach that discovers nonlinear controls, which enables multi-directional manipulation as well as effective disentanglement, based on gradient information in the learned GAN latent space.

939, TITLE: Spatially Invariant Unsupervised 3D Object-Centric Learning and Scene Decomposition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4019_ECCV_2022_paper.php
AUTHORS: Tianyu Wang, Miaomiao Liu, Kee Siong Ng
HIGHLIGHT: In particular, we introduce a framework, SPAIR3D, to factorize a 3D point cloud into a spatial mixture model where each component corresponds to one object.

940, TITLE: Neural Scene Decoration from a Single Photograph
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4652_ECCV_2022_paper.php
AUTHORS: Hong-Wing Pang, Yingshu Chen, Phuoc-Hieu Le, Binh-Son Hua, Thanh Nguyen, Sai-Kit Yeung
HIGHLIGHT: In this paper, we introduce a new problem of domain-specific indoor scene image synthesis, namely neural scene decoration.

941, TITLE: Outpainting by Queries

http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4958_ECCV_2022_paper.php
AUTHORS:  Kai Yao, Penglei Gao, Xi Yang, Jie Sun, Rui Zhang, Kaizhu Huang
HIGHLIGHT:  In this paper, motivated by the flexible self-attention mechanism with minimal inductive biases in transformer architecture, we reframe the generalised image outpainting problem as a patch-wise sequence-to-sequence autoregression problem, enabling query-based image outpainting.

942, TITLE:  Unleashing Transformers: Parallel Token Prediction with Discrete Absorbing Diffusion for Fast High-Resolution Image Generation from Vector-Quantized Codes
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5081_ECCV_2022_paper.php
AUTHORS:  Sam Bond-Taylor, Peter Hessey, Hiroshi Sasaki, Toby P. Breckon, Chris G. Willcocks
HIGHLIGHT:  By contrast, in this paper we propose a novel discrete diffusion probabilistic model prior which enables parallel prediction of Vector-Quantized tokens by using an unconstrained Transformer architecture as the backbone.

943, TITLE:  ChunkyGAN: Real Image Inversion via Segments
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5092_ECCV_2022_paper.php
AUTHORS:  Ad&eacute;la Šubrtov&aacute;, David Futschik, Jan ?ech, Michal Luk&aacute;?, Eli Shechtman, Daniel S&yacute;kora
HIGHLIGHT:  We present ChunkyGAN-a novel paradigm for modeling and editing images using generative adversarial networks.

944, TITLE:  GAN Cocktail: Mixing GANs without Dataset Access
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5144_ECCV_2022_paper.php
AUTHORS:  Omri Avrahami, Dani Lischinski, Ohad Fried
HIGHLIGHT:  In this work we tackle the problem of model merging, given two constraints that often come up in the real world: (1) no access to the original training data, and (2) without increasing the size of the neural network.

945, TITLE:  Geometry-Guided Progressive NeRF for Generalizable and Efficient Neural Human Rendering
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5198_ECCV_2022_paper.php
AUTHORS:  Mingfei Chen, Jianfeng Zhang, Xiangyu Xu, Lijuan Liu, Yujun Cai, Jiashi Feng, Shuicheng Yan
HIGHLIGHT:  In this work we develop a generalizable and efficient Neural Radiance Field (NeRF) pipeline for high-fidelity free-viewpoint human body synthesis under settings with sparse camera views.

946, TITLE:  Controllable Shadow Generation Using Pixel Height Maps
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5932_ECCV_2022_paper.php
AUTHORS:  Yichen Sheng, Yifan Liu, Jianming Zhang, Wei Yin, A. Cengiz Oztireli, He Zhang, Zhe Lin, Eli Shechtman, Bedrich Benes
HIGHLIGHT:  We introduce "Pixel Height", a novel geometry representation that encodes the correlations between objects, ground, and camera pose.

947, TITLE:  Learning Where to Look – Generative NAS Is Surprisingly Efficient
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6011_ECCV_2022_paper.php
AUTHORS:  Jovita Lukasik, Steffen Jung, Margret Keuper
HIGHLIGHT:  To this end, we propose a generative model, paired with a surrogate predictor, that iteratively learns to generate samples from increasingly promising latent subspaces.

948, TITLE:  Subspace Diffusion Generative Models
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6576_ECCV_2022_paper.php
AUTHORS:  Bowen Jing, Gabriele Corso, Renato Berlinghieri, Tommi Jaakkola
HIGHLIGHT:  Score-based models generate samples by mapping noise to data (and vice versa) via a high-dimensional diffusion process. We question whether it is necessary to run this entire process at high dimensionality and incur all the inconveniences thereof.

949, TITLE:  DuelGAN: A Duel between Two Discriminators Stabilizes the GAN Training
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7143_ECCV_2022_paper.php
AUTHORS:  Jiaheng Wei, Minghao Liu, Jiahao Luo, Andrew Zhu, James Davis, Yang Liu
HIGHLIGHT:  In this paper, we introduce DuelGAN, a generative adversarial network (GAN) solution to improve the stability of the generated samples and to mitigate mode collapse.

950, TITLE:  MINER: Multiscale Implicit Neural Representation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7847_ECCV_2022_paper.php
AUTHORS:  Vishwanath Saragadam, Jasper Tan, Guha Balakrishnan, Richard G. Baraniuk, Ashok Veeraraghavan
HIGHLIGHT:  We introduce a new neural signal model designed for efficient high-resolution representation of large-scale signals.

951, TITLE:  An Embedded Feature Whitening Approach to Deep Neural Network Optimization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/358_ECCV_2022_paper.php
AUTHORS:  Hongwei Yong, Lei Zhang
HIGHLIGHT:  However, existing feature whitening methods have a few limitations, such as the large computation and memory cost, incapability to adopt pre-trained DNN models, the introduction of additional parameters, etc., making them impractical

to use in optimizing DNNs. To overcome these drawbacks, we propose a novel Embedded Feature Whitening (EFW) approach to DNN optimization.

952, TITLE: Q-FW: A Hybrid Classical-Quantum Frank-Wolfe for Quadratic Binary Optimization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/583_ECCV_2022_paper.php
AUTHORS: Alp Yurtsever, Tolga Birdal, Vladislav Golyanik
HIGHLIGHT: We present a hybrid classical-quantum framework based on the Frank-Wolfe algorithm, Q-FW, for solving quadratic, linearly-constrained, binary optimization problems on quantum annealers (QA).

953, TITLE: Self-Supervised Learning of Visual Graph Matching
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2203_ECCV_2022_paper.php
AUTHORS: Chang Liu, Shaofeng Zhang, Xiaokang Yang, Junchi Yan
HIGHLIGHT: Inspired by recent progress in self-supervised contrastive learning, we propose an end-to-end label-free self-supervised contrastive graph matching framework (SCGM).

954, TITLE: Scalable Learning to Optimize: A Learned Optimizer Can Train Big Models
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2909_ECCV_2022_paper.php
AUTHORS: Xuxi Chen, Tianlong Chen, Yu Cheng, Weizhu Chen, Ahmed Awadallah, Zhangyang Wang
HIGHLIGHT: However, the primary barrier, scalability, persists for this paradigm: as the typical L2O models create massive memory overhead due to unrolled computational graphs, it disables L2O's applicability to large-scale tasks. To overcome this core challenge, we propose a new scalable learning to optimize (SL2O) framework which (i) first constrains the network updates in a tiny subspace and (ii) then explores learning rules on top of it.

955, TITLE: QISTA-ImageNet: A Deep Compressive Image Sensing Framework Solving $\ell_q$-Norm Optimization Problem
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2936_ECCV_2022_paper.php
AUTHORS: Gang-Xuan Lin, Shih-Wei Hu, Chun-Shien Lu
HIGHLIGHT: In this paper, we study how to reconstruct the original images from the given sensed samples/measurements by proposing a so-called deep compressive image sensing framework.

956, TITLE: R-DFCIL: Relation-Guided Representation Learning for Data-Free Class Incremental Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3118_ECCV_2022_paper.php
AUTHORS: Qiankun Gao, Chen Zhao, Bernard Ghanem, Jian Zhang
HIGHLIGHT: Though recent DFCIL works introduce techniques such as model inversion to synthesize data for previous classes, they fail to overcome forgetting due to the severe domain gap between the synthetic and real data. To address this issue, this paper proposes relation-guided representation learning (RRL) for DFCIL, dubbed R-DFCIL.

957, TITLE: Domain Generalization by Mutual-Information Regularization with Pre-trained Models
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3660_ECCV_2022_paper.php
AUTHORS: Junbum Cha, Kyungjae Lee, Sungrae Park, Sanghyuk Chun
HIGHLIGHT: Instead, we re-formulate the DG objective using mutual information with the oracle model, a model generalized to any possible domain.

958, TITLE: Predicting Is Not Understanding: Recognizing and Addressing Underspecification in Machine Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3989_ECCV_2022_paper.php
AUTHORS: Damien Teney, Maxime Peyrard, Ehsan Abbasnejad
HIGHLIGHT: In this paper, we formalize the notion of underspecification and propose a method to identify and address the issue.

959, TITLE: Neural-Sim: Learning to Generate Training Data with NeRF
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4188_ECCV_2022_paper.php
AUTHORS: Yunhao Ge, Harkirat Behl, Jiashu Xu, Suriya Gunasekar, Neel Joshi, Yale Song, Xin Wang, Laurent Itti, Vibhav Vineet
HIGHLIGHT: We present the first fully differentiable synthetic data generation pipeline that uses Neural Radiance Fields (NeRFs) in a closed-loop with a target application's loss function to generate data, on demand, with no human labor, to maximise accuracy for a target task.

960, TITLE: Bayesian Optimization with Clustering and Rollback for CNN Auto Pruning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4872_ECCV_2022_paper.php
AUTHORS: Hanwei Fan, Jiandong Mu, Wei Zhang
HIGHLIGHT: We propose a novel clustering algorithm that reduces the dimension of the design space to speed up the searching process.

961, TITLE: Learned Variational Video Color Propagation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4987_ECCV_2022_paper.php
AUTHORS: Markus Hofinger, Erich Kobler, Alexander Effland, Thomas Pock
HIGHLIGHT: In this paper, we propose a novel method for color propagation that is used to recolor gray-scale videos (e.g. historic movies).

962, TITLE: Continual Variational Autoencoder Learning via Online Cooperative Memorization

http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5211_ECCV_2022_paper.php
AUTHORS:	Fei Ye, Adrian G. Bors
HIGHLIGHT:	In this paper, we firstly analyze the forgetting behaviour of VAEs by developing a new theoretical framework that formulates CL as a dynamic optimal transport problem. This framework proves approximate bounds to the data likelihood without requiring the task information and explains how the prior knowledge is lost during the training process. We then propose a novel memory buffering approach, namely the Online Cooperative Memorization (OCM) framework, which consists of a Short-Term Memory (STM) that continually stores recent samples to provide future information for the model, and a Long-Term Memory (LTM) aiming to preserve a wide diversity of samples.

963, TITLE:	Learning to Learn with Smooth Regularization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5326_ECCV_2022_paper.php
AUTHORS:	Yuanhao Xiong, Cho-Jui Hsieh
HIGHLIGHT:	Motivated by the stability property that should be satisfied by an ideal optimizer, we propose a regularization term that can enforce the smoothness and stability of the learned optimizers.

964, TITLE:	Incremental Task Learning with Incremental Rank Updates
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5778_ECCV_2022_paper.php
AUTHORS:	Rakib Hyder, Ken Shao, Boyu Hou, Panos Markopoulos, Ashley Prater-Bennette, M. Salman Asif
HIGHLIGHT:	In this paper, we propose a new incremental task learning framework based on low-rank factorization.

965, TITLE:	Batch-Efficient EigenDecomposition for Small and Medium Matrices
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5966_ECCV_2022_paper.php
AUTHORS:	Yue Song, Nicu Sebe, Wei Wang
HIGHLIGHT:	In this paper, we propose a QR-based ED method dedicated to the application scenarios of computer vision.

966, TITLE:	Ensemble Learning Priors Driven Deep Unfolding for Scalable Video Snapshot Compressive Imaging
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6271_ECCV_2022_paper.php
AUTHORS:	Chengshuai Yang, Shiyu Zhang, Xin Yuan
HIGHLIGHT:	Existing DL algorithms are limited by two bottlenecks: 1) a high accuracy network is usually large and requires a long running time 2) DL algorithms are limited by scalability, i.e., a well trained network in general can not be applied to new systems. Towards this end, this paper proposes to use ensemble learning priors in DL to keep high reconstruction speed and accuracy in a single network.

967, TITLE:	Approximate Discrete Optimal Transport Plan with Auxiliary Measure Method
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6559_ECCV_2022_paper.php
AUTHORS:	Dongsheng An, Na Lei, Xianfeng Gu
HIGHLIGHT:	This work proposes an auxiliary measure method to use the semi-discrete OT maps to estimate the sparsity of the discrete OT plan with squared Euclidean cost.

968, TITLE:	A Comparative Study of Graph Matching Algorithms in Computer Vision
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7070_ECCV_2022_paper.php
AUTHORS:	Stefan Haller, Lorenz Feineis, Lisa Hutschenreiter, Florian Bernard, Carsten Rother, Dagmar Kainm&uuml,ller, Paul Swoboda, Bogdan Savchynskyy
HIGHLIGHT:	To address these shortcomings, we present a comparative study of graph matching algorithms.We create a uniform benchmark where we collect and categorize a large set of existing and publicly available computer vision graph matching problems in a common format.

969, TITLE:	Improving Generalization in Federated Learning by Seeking Flat Minima
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7093_ECCV_2022_paper.php
AUTHORS:	Debora Caldarola, Barbara Caputo, Marco Ciccone
HIGHLIGHT:	Models trained in federated settings often suffer from degraded performances and fail at generalizing, especially when facing heterogeneous scenarios. In this work, we investigate such behavior through the lens of geometry of the loss and Hessian eigenspectrum, linking the model's lack of generalization capacity to the sharpness of the solution.

970, TITLE:	Semidefinite Relaxations of Truncated Least-Squares in Robust Rotation Search: Tight or Not
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7302_ECCV_2022_paper.php
AUTHORS:	Liangzu Peng, Mahyar Fazlyab, Ren&eacute, Vidal
HIGHLIGHT:	Whether or not this SDR is theoretically tight in the presence of noise, outliers, or both has remained largely unexplored. We derive conditions that characterize the tightness of this SDR, showing that the tightness depends on the noise level, the truncation parameters of TLS, and the outlier distribution (random or clustered).

971, TITLE:	Transfer without Forgetting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7950_ECCV_2022_paper.php
AUTHORS:	Matteo Boschini, Lorenzo Bonicelli, Angelo Porrello, Giovanni Bellitto, Matteo Pennisi, Simone Palazzo, Concetto Spampinato, Simone Calderara
HIGHLIGHT:	Unfortunately, this issue leads to the under-exploitation of knowledge transfer during later tasks. On this ground, we propose Transfer without Forgetting (TwF), a hybrid approach building upon a fixed pretrained sibling network, which continuously propagates the knowledge inherent in the source domain through a layer-wise loss term.

972, TITLE:	AdaBest: Minimizing Client Drift in Federated Learning via Adaptive Bias Estimation

http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/8092_ECCV_2022_paper.php
AUTHORS:        Farshid Varno, Marzie Saghayi, Laya Rafiee Sevyeri, Sharut Gupta, Stan Matwin, Mohammad Havaei
HIGHLIGHT:        In this work, we propose an adaptive algorithm that accurately estimates drift across clients.

973, TITLE:        Tackling Long-Tailed Category Distribution under Domain Shifts
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/180_ECCV_2022_paper.php
AUTHORS:        Xiao Gu, Yao Guo, Zeju Li, Jianing Qiu, Qi Dou, Yuxuan Liu, Benny Lo, Guang-Zhong Yang
HIGHLIGHT:        In this study, we took a step forward and looked into the problem of long-tailed classification under domain shifts.

974, TITLE:        Doubly-Fused ViT: Fuse Information from Vision Transformer Doubly with Local Representation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/322_ECCV_2022_paper.php
AUTHORS:        Li Gao, Dong Nie, Bo Li, Xiaofeng Ren
HIGHLIGHT:        In this paper, we propose an efficient ViT architecture, named Doubly-Fused ViT (DFvT), where we feed low-resolution feature maps to self-attention (SA) to achieve larger context with efficiency (by moving downsampling prior to SA), and enhance it with fine-detailed spatial information.

975, TITLE:        Improving Vision Transformers by Revisiting High-Frequency Components
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/401_ECCV_2022_paper.php
AUTHORS:        Jiawang Bai, Li Yuan, Shu-Tao Xia, Shuicheng Yan, Zhifeng Li, Wei Liu
HIGHLIGHT:        However, compared with training Convolutional Neural Network (CNN) models, training Vision Transformer (ViT) models is more difficult and relies on the large-scale training set. To explain this observation we make a hypothesis that \textit{ViT models are less effective in capturing the high-frequency components of images than CNN models}, and verify it by a frequency analysis.

976, TITLE:        Recurrent Bilinear Optimization for Binary Neural Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/415_ECCV_2022_paper.php
AUTHORS:        Sheng Xu, Yanjing Li, Tiancheng Wang, Teli Ma, Baochang Zhang, Peng Gao, Yu Qiao, Jinhu Lü, Guodong Guo
HIGHLIGHT:        Our work is the first attempt to optimize BNNs from the bilinear perspective.

977, TITLE:        Neural Architecture Search for Spiking Neural Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/599_ECCV_2022_paper.php
AUTHORS:        Youngeun Kim, Yuhang Li, Hyoungseob Park, Yeshwanth Venkatesha, Priyadarshini Panda
HIGHLIGHT:        However, most prior SNN methods use ANN-like architectures (e.g., VGG-Net or ResNet), which could provide sub-optimal performance for temporal sequence processing of binary information in SNNs. To address this, in this paper, we introduce a novel Neural Architecture Search (NAS) approach for finding better SNN architectures.

978, TITLE:        Where to Focus: Investigating Hierarchical Attention Relationship for Fine-Grained Visual Classification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/762_ECCV_2022_paper.php
AUTHORS:        Yang Liu, Lei Zhou, Pengcheng Zhang, Xiao Bai, Lin Gu, Xiaohan Yu, Jun Zhou, Edwin R. Hancock
HIGHLIGHT:        This granularity-wise attention is confirmed by our collected human real-time gaze data on different hierarchy classifications. To leverage this mechanism, we propose a Cross-Hierarchical Region Feature (CHRF) learning framework.

979, TITLE:        DaViT: Dual Attention Vision Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/812_ECCV_2022_paper.php
AUTHORS:        Mingyu Ding, Bin Xiao, Noel Codella, Ping Luo, Jingdong Wang, Lu Yuan
HIGHLIGHT:        In this work, we introduce Dual Attention Vision Transformers (DaViT), a simple yet effective vision transformer architecture that is able to capture global context while maintaining computational efficiency.

980, TITLE:        Optimal Transport for Label-Efficient Visible-Infrared Person Re-identification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/971_ECCV_2022_paper.php
AUTHORS:        Jiangming Wang, Zhizhong Zhang, Mingang Chen, Yi Zhang, Cong Wang, Bin Sheng, Yanyun Qu, Yuan Xie
HIGHLIGHT:        In this paper, we raise a new label-efficient training pipeline for VI-ReID.

981, TITLE:        Locality Guidance for Improving Vision Transformers on Tiny Datasets
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/999_ECCV_2022_paper.php
AUTHORS:        Kehan Li, Runyi Yu, Zhennan Wang, Li Yuan, Guoli Song, Jie Chen
HIGHLIGHT:        While the Vision Transformer (VT) architecture is becoming trendy in computer vision, pure VT models perform poorly on tiny datasets. To address this issue, this paper proposes the locality guidance for improving the performance of VTs on tiny datasets.

982, TITLE:        Neighborhood Collective Estimation for Noisy Label Identification and Correction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1005_ECCV_2022_paper.php
AUTHORS:        Jichang Li, Guanbin Li, Feng Liu, Yizhou Yu
HIGHLIGHT:        Recent advances employ the predicted label distributions of individual samples to perform noise verification and noisy label correction, easily giving rise to confirmation bias. To mitigate this issue, we propose Neighborhood Collective Estimation, in which the predictive reliability of a candidate sample is re-estimated by contrasting it against its feature-space nearest neighbors.

983, TITLE:          Few-Shot Class-Incremental Learning via Entropy-Regularized Data-Free Replay
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1029_ECCV_2022_paper.php
AUTHORS:          Huan Liu, Li Gu, Zhixiang Chi, Yang Wang, Yuanhao Yu, Jun Chen, Jin Tang
HIGHLIGHT:          In this paper, we show through empirical results that adopting the data replay is surprisingly favorable.

984, TITLE:          Anti-Retroactive Interference for Lifelong Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1179_ECCV_2022_paper.php
AUTHORS:          Runqi Wang, Yuxiang Bao, Baochang Zhang, Jianzhuang Liu, Wentao Zhu, Guodong Guo
HIGHLIGHT:          In this paper, we design a paradigm for lifelong learning based on meta-learning and associative mechanism of the brain.

985, TITLE:          Towards Calibrated Hyper-Sphere Representation via Distribution Overlap Coefficient for Long-Tailed Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1250_ECCV_2022_paper.php
AUTHORS:          Hualiang Wang, Siming Fu, Xiaoxuan He, Hangxiang Fang, Zuozhu Liu, Haoji Hu
HIGHLIGHT:          However, little attention has been given to how to quantify the dominance severity of head classes in the representation space. Motivated by this, we generalize the cosine-based classifiers to a von Mises-Fisher (vMF) mixture model, denoted as vMF classifier, which enables to quantitatively measure representation quality upon the hyper-sphere space via calculating distribution overlap coefficient.

986, TITLE:          Dynamic Metric Learning with Cross-Level Concept Distillation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1280_ECCV_2022_paper.php
AUTHORS:          Wenzhao Zheng, Yuanhui Huang, Borui Zhang, Jie Zhou, Jiwen Lu
HIGHLIGHT:          To facilitate the cross-level semantic structure of the image representations, we propose a hierarchical concept refiner to construct multiple levels of concept embeddings of an image and then pull closer the distance of the corresponding concepts.

987, TITLE:          MENet: A Memory-Based Network with Dual-Branch for Efficient Event Stream Processing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1326_ECCV_2022_paper.php
AUTHORS:          Linhui Sun, Yifan Zhang, Ke Cheng, Jian Cheng, Hanqing Lu
HIGHLIGHT:          To efficiently extract strong features for event streams containing dynamic information, this paper proposes a novel memory-based network with dual-branch, namely MENet.

988, TITLE:          Out-of-Distribution Detection with Boundary Aware Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1414_ECCV_2022_paper.php
AUTHORS:          Sen Pei, Xin Zhang, Bin Fan, Gaofeng Meng
HIGHLIGHT:          In this paper, we propose boundary aware learning (BAL), a novel framework that can learn the distribution of OOD features adaptively.For tackling this problem, previous studies either use real outliers for training or generate synthetic OOD data under strong assumptions, which are either costly or intractable to generalize.

989, TITLE:          Learning Hierarchy Aware Features for Reducing Mistake Severity
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1471_ECCV_2022_paper.php
AUTHORS:          Ashima Garg, Depanshu Sani, Saket Anand
HIGHLIGHT:          In this paper, we propose a novel approach for learning Hierarchy Aware Features (HAF) that leverages classifiers at each level of the hierarchy that are constrained to generate predictions consistent with the label hierarchy.

990, TITLE:          Learning to Detect Every Thing in an Open World
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1628_ECCV_2022_paper.php
AUTHORS:          Kuniaki Saito, Ping Hu, Trevor Darrell, Kate Saenko
HIGHLIGHT:          The key issue lies in their assumption that regions without any annotations should be suppressed as negatives, which teaches the model to treat any unannotated (hidden) objects as background. To address this issue, we propose a simple yet surprisingly powerful data augmentation and training scheme we call Learning to Detect Every Thing (LDET).

991, TITLE:          KVT: $k$-NN Attention for Boosting Vision Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1670_ECCV_2022_paper.php
AUTHORS:          Pichao Wang, Xue Wang, Fan Wang, Ming Lin, Shuning Chang, Hao Li, Rong Jin
HIGHLIGHT:          However, since the current dense self-attention uses all image patches (tokens) to compute attention matrix, it may neglect locality of images patches and involve noisy tokens (e.g., clutter background and occlusion), leading to a slow training process and potential degradation of performance. To address these problems, we propose the $k$-NN attention for boosting vision transformers.

992, TITLE:          Registration Based Few-Shot Anomaly Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1729_ECCV_2022_paper.php
AUTHORS:          Chaoqin Huang, Haoyan Guan, Aofan Jiang, Ya Zhang, Michael Spratling, Yan-Feng Wang
HIGHLIGHT:          This paper considers few-shot anomaly detection (FSAD), a practical yet under-studied setting for anomaly detection (AD), where only a limited number of normal images are provided for each category at training.

993, TITLE:          Improving Robustness by Enhancing Weak Subnets
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1791_ECCV_2022_paper.php
AUTHORS:          Yong Guo, David Stutz, Bernt Schiele

HIGHLIGHT: In this paper, we investigate model robustness on perturbed inputs by studying the performance of internal sub-networks (subnets).

994, TITLE: Learning Invariant Visual Representations for Compositional Zero-Shot Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1952_ECCV_2022_paper.php
AUTHORS: Tian Zhang, Kongming Liang, Ruoyi Du, Xian Sun, Zhanyu Ma, Jun Guo
HIGHLIGHT: Specifically, we propose an invariant feature learning framework to align different domains at the representation and gradient levels to capture the intrinsic characteristics associated with the tasks.

995, TITLE: Improving Covariance Conditioning of the SVD Meta-Layer by Orthogonality
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2041_ECCV_2022_paper.php
AUTHORS: Yue Song, Nicu Sebe, Wei Wang
HIGHLIGHT: In this paper, we systematically study how to improve the covariance conditioning by enforcing orthogonality to the Pre-SVD layer.

996, TITLE: Out-of-Distribution Detection with Semantic Mismatch under Masking
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2088_ECCV_2022_paper.php
AUTHORS: Yijun Yang, Ruiyuan Gao, Qiang Xu
HIGHLIGHT: This paper proposes a novel out-of-distribution (OOD) detection framework named MOODCat for image classifiers.

997, TITLE: Data-Free Neural Architecture Search via Recursive Label Calibration
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2715_ECCV_2022_paper.php
AUTHORS: Zechun Liu, Zhiqiang Shen, Yun Long, Eric Xing, Kwang-Ting Cheng, Chas Leichner
HIGHLIGHT: This paper aims to explore the feasibility of neural architecture search (NAS) given only a pre-trained model without using any original training data.

998, TITLE: Learning from Multiple Annotator Noisy Labels via Sample-Wise Label Fusion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2852_ECCV_2022_paper.php
AUTHORS: Zhengqi Gao, Fan-Keng Sun, Mingran Yang, Sucheng Ren, Zikai Xiong, Marc Engeler, Antonio Burazer, Linda Wildling, Luca Daniel, Duane S. Boning
HIGHLIGHT: Previous approaches usually assume that all data samples share the same set of parameters related to annotator errors, while we demonstrate that label error learning should be both annotator and data sample dependent. Motivated by this observation, we propose a novel learning algorithm.

999, TITLE: Acknowledging the Unknown for Multi-Label Learning with Single Positive Labels
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3180_ECCV_2022_paper.php
AUTHORS: Donghao Zhou, Pengfei Chen, Qiong Wang, Guangyong Chen, Pheng-Ann Heng
HIGHLIGHT: In this work, we choose to treat all unannotated labels from an alternative perspective, i.e. acknowledging they are unknown.

1000, TITLE: AutoMix: Unveiling the Power of Mixup for Stronger Classifiers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3311_ECCV_2022_paper.php
AUTHORS: Zicheng Liu, Siyuan Li, Di Wu, Zihan Liu, Zhiyuan Chen, Lirong Wu, Stan Z. Li
HIGHLIGHT: However, there arises a trade-off between precise mixing policies and optimization complexity. To address this challenge, we propose a novel automatic mixup (AutoMix) framework, where the mixup policy is parameterized and serves the ultimate classification goal directly.

1001, TITLE: MaxViT: Multi-axis Vision Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3370_ECCV_2022_paper.php
AUTHORS: Zhengzhong Tu, Hossein Talebi, Han Zhang, Feng Yang, Peyman Milanfar, Alan Bovik, Yinxiao Li
HIGHLIGHT: In this paper we introduce an efficient and scalable attention model we call multi-axis attention, which consists of two aspects: blocked local and dilated global attention.

1002, TITLE: ScalableViT: Rethinking the Context-Oriented Generalization of Vision Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3428_ECCV_2022_paper.php
AUTHORS: Rui Yang, Hailong Ma, Jie Wu, Yansong Tang, Xuefeng Xiao, Min Zheng, Xiu Li
HIGHLIGHT: Such inflexibility restricts it from possessing context-oriented generalization that can bring more contextual cues and graphic representations. To mitigate this issue, we propose a Scalable Self-Attention (SSA) mechanism that leverages two scaling factors to release dimensions of query, key, and value matrices while unbinding them with the input.

1003, TITLE: Three Things Everyone Should Know about Vision Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3689_ECCV_2022_paper.php
AUTHORS: Hugo Touvron, Matthieu Cord, Alaaeldin El-Nouby, Jakob Verbeek, Hervé, Jégou
HIGHLIGHT: We offer three insights based on simple and easy to implement variants of vision transformers.

1004, TITLE: DeiT III: Revenge of the ViT
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3690_ECCV_2022_paper.php
AUTHORS: Hugo Touvron, Matthieu Cord, Hervé, Jégou
HIGHLIGHT: In this paper, we revisit the supervised training of ViTs.

1005, TITLE: MixSKD: Self-Knowledge Distillation from Mixup for Image Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3827_ECCV_2022_paper.php
AUTHORS: Chuanguang Yang, Zhulin An, Helong Zhou, Linhang Cai, Xiang Zhi, Jiwen Wu, Yongjun Xu, Qian Zhang
HIGHLIGHT: Unlike the conventional Knowledge Distillation (KD), Self-KD allows a network to learn knowledge from itself without any guidance from extra networks. This paper proposes to perform Self-KD from image Mixture (MixSKD), which integrates these two techniques into a unified framework.

1006, TITLE: Self-Feature Distillation with Uncertainty Modeling for Degraded Image Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3874_ECCV_2022_paper.php
AUTHORS: Zhou Yang, Weisheng Dong, Xin Li, Jinjian Wu, Leida Li, Guangming Shi
HIGHLIGHT: It treats each pixel in the feature equally and may result in relatively poor reconstruction performance in some difficult regions. To address this issue, we propose a novel self-feature distillation method with uncertainty modeling for better producing HQ-like features from low-quality observations in this paper.

1007, TITLE: Novel Class Discovery without Forgetting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3984_ECCV_2022_paper.php
AUTHORS: K J Joseph, Sujoy Paul, Gaurav Aggarwal, Soma Biswas, Piyush Rai, Kai Han, Vineeth N Balasubramanian
HIGHLIGHT: We propose 1) a method to generate pseudo-latent representations which act as a proxy for (no longer available) labeled data, thereby alleviating forgetting, 2) a mutual-information based regularizer which enhances unsupervised discovery of novel classes, and 3) a simple Known Class Identifier which aids generalized inference when the testing data contains instances form both seen and unseen categories.

1008, TITLE: SAFA: Sample-Adaptive Feature Augmentation for Long-Tailed Image Classification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4035_ECCV_2022_paper.php
AUTHORS: Yan Hong, Jianfu Zhang, Zhongyi Sun, Ke Yan
HIGHLIGHT: Existing methods augment tail-class features to compensate tail classes on feature space, but these methods fail to generalize on test phase. To mitigate this problem, we propose a novel Sample-Adaptive Feature Augmentation (SAFA) to augment features for tail classes resulting in ameliorating the classifier performance.

1009, TITLE: Negative Samples Are at Large: Leveraging Hard-Distance Elastic Loss for Re-identification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4074_ECCV_2022_paper.php
AUTHORS: Hyungtae Lee, Sungmin Eum, Heesung Kwon
HIGHLIGHT: We present a Momentum Re-identification (MoReID) framework that can leverage a very large number of negative samples in training for general re-identification task.

1010, TITLE: Discrete-Constrained Regression for Local Counting Models
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4123_ECCV_2022_paper.php
AUTHORS: Haipeng Xiong, Angela Yao
HIGHLIGHT: To mitigate the sensitivity, we loosen the regression formulation from a continuous scale to a discrete ordering and propose a novel discrete-constrained (DC) regression.

1011, TITLE: Breadcrumbs: Adversarial Class-Balanced Sampling for Long-Tailed Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4150_ECCV_2022_paper.php
AUTHORS: Bo Liu, Haoxiang Li, Hao Kang, Gang Hua, Nuno Vasconcelos
HIGHLIGHT: A new feature augmentation strategy, EMANATE, based on back-tracking of features across epochs during training, is proposed.

1012, TITLE: Chairs Can Be Stood On: Overcoming Object Bias in Human-Object Interaction Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4206_ECCV_2022_paper.php
AUTHORS: Guangzhi Wang, Yangyang Guo, Yongkang Wong, Mohan Kankanhalli
HIGHLIGHT: To overcome the object bias problem, we propose a novel plug-and-play Object-wise Debiasing Memory (ODM) method for re-balancing the distribution of interactions under detected objects.

1013, TITLE: A Fast Knowledge Distillation Framework for Visual Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4359_ECCV_2022_paper.php
AUTHORS: Zhiqiang Shen, Eric Xing
HIGHLIGHT: In this study, we present a Fast Knowledge Distillation (FKD) framework that replicates the distillation training phase and generates soft labels using the multi-crop KD approach, meanwhile training faster than ReLabel since no post-processes such as RoI align and softmax operations are used.

1014, TITLE: DICE: Leveraging Sparsification for Out-of-Distribution Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4405_ECCV_2022_paper.php
AUTHORS: Yiyou Sun, Yixuan Li
HIGHLIGHT: In this paper, we reveal important insights that reliance on unimportant weights and units can directly attribute to the brittleness of OOD detection.

1015, TITLE: Invariant Feature Learning for Generalized Long-Tailed Classification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4408_ECCV_2022_paper.php
AUTHORS: Kaihua Tang, Mingyuan Tao, Jiaxin Qi, Zhenguang Liu, Hanwang Zhang

HIGHLIGHT:　　　　To this end, we propose an Invariant Feature Learning (IFL) method as the first strong baseline for GLT.

1016, TITLE:　　　　Sliced Recursive Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4412_ECCV_2022_paper.php
AUTHORS:　　　　Zhiqiang Shen, Zechun Liu, Eric Xing
HIGHLIGHT:　　　　To reduce the additional computation caused by recursive operation while maintaining the superior accuracy, we propose an approximating method through multiple sliced group self-attentions across recursive layers which can reduce the cost consumption by 10 30% without sacrificing performance.

1017, TITLE:　　　　Cross-Domain Ensemble Distillation for Domain Generalization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4593_ECCV_2022_paper.php
AUTHORS:　　　　Kyungmoon Lee, Sungyeon Kim, Suha Kwak
HIGHLIGHT:　　　　We propose a simple yet effective method for domain generalization, named cross-domain ensemble distillation (XDED), that learns domain-invariant features while encouraging the model to converge to flat minima, which recently turned out to be a sufficient condition for domain generalization.

1018, TITLE:　　　　Centrality and Consistency: Two-Stage Clean Samples Identification for Learning with Instance-Dependent Noisy Labels
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4684_ECCV_2022_paper.php
AUTHORS:　　　　Ganlong Zhao, Guanbin Li, Yipeng Qin, Feng Liu, Yizhou Yu
HIGHLIGHT:　　　　In this paper, we propose a two-stage clean samples identification method to address the aforementioned challenge.

1019, TITLE:　　　　Hyperspherical Learning in Multi-Label Classification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4700_ECCV_2022_paper.php
AUTHORS:　　　　Bo Ke, Yunquan Zhu, Mengtian Li, Xiujun Shu, Ruizhi Qiao, Bo Ren
HIGHLIGHT:　　　　Existing (partial) multi-label methods are usually studied in the Euclidean space, where the relationship between the label embeddings and image features is not symmetrical and thus can be challenging to learn. To alleviate this problem, we propose reformulating the task into a hyperspherical space, where an angular margin can be incorporated into a hyperspherical multi-label loss function.

1020, TITLE:　　　　When Active Learning Meets Implicit Semantic Data Augmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4727_ECCV_2022_paper.php
AUTHORS:　　　　Zhuangzhuang Chen, Jin Zhang, Pan Wang, Jie Chen, Jianqiang Li
HIGHLIGHT:　　　　This paper proposes diversity-aware semantic transformation active learning, or DAST-AL framework, that looks ahead the effect of ISDA in the selection of unlabeled samples.

1021, TITLE:　　　　VL-LTR: Learning Class-Wise Visual-Linguistic Representation for Long-Tailed Visual Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4849_ECCV_2022_paper.php
AUTHORS:　　　　Changyao Tian, Wenhai Wang, Xizhou Zhu, Jifeng Dai, Yu Qiao
HIGHLIGHT:　　　　In this work, we present a novel framework based on pre-trained visual-linguistic models for long-tailed recognition (LTR), termed VL-LTR, and conduct empirical studies on the benefits of introducing text modality for long-tailed recognition tasks.

1022, TITLE:　　　　Class Is Invariant to Context and Vice Versa: On Learning Invariance for Out-of-Distribution Generalization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4888_ECCV_2022_paper.php
AUTHORS:　　　　Jiaxin Qi, Kaihua Tang, Qianru Sun, Xian-Sheng Hua, Hanwang Zhang
HIGHLIGHT:　　　　We argue that the widely adopted assumption in prior work--the context bias can be directly annotated or estimated from biased class prediction--renders the context incomplete or even incorrect.

1023, TITLE:　　　　Hierarchical Semi-Supervised Contrastive Learning for Contamination-Resistant Anomaly Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4921_ECCV_2022_paper.php
AUTHORS:　　　　Gaoang Wang, Yibing Zhan, Xinchao Wang, Mingli Song, Klara Nahrstedt
HIGHLIGHT:　　　　However, when contaminated with unlabeled abnormal samples in training set under semi-supervised settings, current contrastive-based methods generally 1) ignore the comprehensive relation between training data, leading to suboptimal performance, and 2) require fine-tuning, resulting in low efficiency. To address the above two issues, in this paper, we propose a novel hierarchical semi-supervised contrastive learning (HSCL) framework, for contamination-resistant anomaly detection.

1024, TITLE:　　　　Tracking by Associating Clips
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5114_ECCV_2022_paper.php
AUTHORS:　　　　Sanghyun Woo, Kwanyong Park, Seoung Wug Oh, In So Kweon, Joon-Young Lee
HIGHLIGHT:　　　　In this paper, we investigate an alternative by treating object association as clip-wise matching.

1025, TITLE:　　　　RealPatch: A Statistical Matching Framework for Model Patching with Real Samples
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5140_ECCV_2022_paper.php
AUTHORS:　　　　Sara Romiti, Christopher Inskip, Viktoriia Sharmanska, Novi Quadrianto
HIGHLIGHT:　　　　In this work, we propose RealPatch, a framework for simpler, faster, and more data-efficient data augmentation based on statistical matching.

1026, TITLE:　　　　Background-Insensitive Scene Text Recognition with Text Semantic Segmentation

http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5189_ECCV_2022_paper.php
AUTHORS:      Liang Zhao, Zhenyao Wu, Xinyi Wu, Greg Wilsbacher, Song Wang
HIGHLIGHT:      In this paper, we propose a Background-Insensitive approach BINet by explicitly leveraging the text Semantic Segmentation (SSN) to extract texts more accurately.

1027, TITLE:      Semantic Novelty Detection via Relational Reasoning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5215_ECCV_2022_paper.php
AUTHORS:      Francesco Cappio Borlino, Silvia Bucci, Tatiana Tommasi
HIGHLIGHT:      We claim that a tailored representation learning strategy may be the right solution for effective and efficient semantic novelty detection. Besides extensively testing state-of-the-art approaches for this task, we propose a novel representation learning paradigm based on relational reasoning.

1028, TITLE:      Improving Closed and Open-Vocabulary Attribute Prediction Using Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5247_ECCV_2022_paper.php
AUTHORS:      Khoi Pham, Kushal Kafle, Zhe Lin, Zhihong Ding, Scott Cohen, Quan Tran, Abhinav Shrivastava
HIGHLIGHT:      We propose TAP, a new Transformer-based model that can utilize context and predict attributes for multiple objects in a scene in a single forward pass, and a training scheme that allows this model to learn attribute prediction from image-text datasets.

1029, TITLE:      Training Vision Transformers with Only 2040 Images
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5381_ECCV_2022_paper.php
AUTHORS:      Yun-Hao Cao, Hao Yu, Jianxin Wu
HIGHLIGHT:      In this paper, we investigate how to train ViTs with limited data (e.g., 2040 images).

1030, TITLE:      Bridging Images and Videos: A Simple Learning Framework for Large Vocabulary Video Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5441_ECCV_2022_paper.php
AUTHORS:      Sanghyun Woo, Kwanyong Park, Seoung Wug Oh, In So Kweon, Joon-Young Lee
HIGHLIGHT:      To resolve these challenges, we present an effective unified learning framework that takes full advantage of all available training data to learn detection and tracking while not losing any LVIS categories to recognize.

1031, TITLE:      TDAM: Top-Down Attention Module for Contextually Guided Feature Selection in CNNs
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5443_ECCV_2022_paper.php
AUTHORS:      Shantanu Jaiswal, Basura Fernando, Cheston Tan
HIGHLIGHT:      Accordingly, in this work, we propose a lightweight top-down attention module (TDAM) that iteratively generates a "visual searchlight" to perform channel and spatial modulation of its inputs and outputs more contextually-relevant feature maps at each computation step.

1032, TITLE:      Automatic Check-Out via Prototype-Based Classifier Learning from Single-Product Exemplars
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5557_ECCV_2022_paper.php
AUTHORS:      Hao Chen, Xiu-Shen Wei, Faen Zhang, Yang Shen, Hui Xu, Liang Xiao
HIGHLIGHT:      To mitigate the gap, we propose a method, termed as PSP, to perform Prototype-based classifier learning from Single-Product exemplars.

1033, TITLE:      Overcoming Shortcut Learning in a Target Domain by Generalizing Basic Visual Factors from a Source Domain
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5712_ECCV_2022_paper.php
AUTHORS:      Piyapat Saranrittichai, Chaithanya Kumar Mummadi, Claudia Blaiotta, Mauricio Munoz, Volker Fischer
HIGHLIGHT:      Prior works have shown how this impairs the compositional generalization capability of deep learning models. To address this problem, we propose a novel approach to mitigate shortcut learning in uncontrolled target domains.

1034, TITLE:      Photo-Realistic Neural Domain Randomization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5769_ECCV_2022_paper.php
AUTHORS:      Sergey Zakharov, Rare? Ambru?, Vitor Guizilini, Wadim Kehl, Adrien Gaidon
HIGHLIGHT:      In this paper, we show that the recent progress in neural rendering enables a new unified approach we call Photo-realistic Neural Domain Randomization (PNDR).

1035, TITLE:      Wave-ViT: Unifying Wavelet and Transformers for Visual Representation Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6127_ECCV_2022_paper.php
AUTHORS:      Ting Yao, Yingwei Pan, Yehao Li, Chong-Wah Ngo, Tao Mei
HIGHLIGHT:      Thus, existing solutions commonly employ down-sampling operations (e.g., average pooling) over keys/values to dramatically reduce the computational cost. In this work, we argue that such over-aggressive down-sampling design is not invertible and inevitably causes information dropping especially for high-frequency components in objects (e.g., texture details).

1036, TITLE:      Tailoring Self-Supervision for Supervised Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6282_ECCV_2022_paper.php
AUTHORS:      WonJun Moon, Ji-Hwan Kim, Jae-Pil Heo
HIGHLIGHT:      Subsequently, to show how existing pretext tasks can fulfill these and be tailored for supervised learning, we propose a simple auxiliary self-supervision task, predicting localizable rotation (\textbf{LoRot}).

1037, TITLE:      Difficulty-Aware Simulator for Open Set Recognition

http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6283_ECCV_2022_paper.php
AUTHORS:        WonJun Moon, Junho Park, Hyun Seok Seong, Cheol-Ho Cho, Jae-Pil Heo
HIGHLIGHT:        Therefore, we present a novel framework, DIfficulty-Aware Simulator (DIAS), that generates fakes with diverse difficulty levels to simulate the real world.

1038, TITLE:        Few-Shot Class-Incremental Learning from an Open-Set Perspective
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6366_ECCV_2022_paper.php
AUTHORS:        Can Peng, Kun Zhao, Tianren Wang, Meng Li, Brian C. Lovell
HIGHLIGHT:        In this paper, we first reevaluate the current task setting and propose a more comprehensive and practical setting for the FSCIL task.

1039, TITLE:        FOSTER: Feature Boosting and Compression for Class-Incremental Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6471_ECCV_2022_paper.php
AUTHORS:        Fu-Yun Wang, Da-Wei Zhou, Han-Jia Ye, De-Chuan Zhan
HIGHLIGHT:        Inspired by the gradient boosting algorithm to gradually fit the residuals between the target model and the previous ensemble model, we propose a novel two-stage learning paradigm FOSTER, empowering the model to learn new categories adaptively.

1040, TITLE:        Visual Knowledge Tracing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6560_ECCV_2022_paper.php
AUTHORS:        Neehar Kondapaneni, Pietro Perona, Oisin Mac Aodha
HIGHLIGHT:        In this work, we propose a novel task of tracing the evolving classification behavior of human learners as they engage in challenging visual classification tasks.

1041, TITLE:        S3C: Self-Supervised Stochastic Classifiers for Few-Shot Class-Incremental Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6655_ECCV_2022_paper.php
AUTHORS:        Jayateja Kalla, Soma Biswas
HIGHLIGHT:        FSCIL suffers from two major challenges: (i) over-fitting on the new classes due to limited amount of data, (ii) catastrophically forgetting about the old classes due to unavailability of data from these classes in the incremental stages. In this work, we propose a self-supervised stochastic classifier (S3C) to counter both these challenges in FSCIL.

1042, TITLE:        Improving Fine-Grained Visual Recognition in Low Data Regimes via Self-Boosting Attention Mechanism
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6680_ECCV_2022_paper.php
AUTHORS:        Yangyang Shu, Baosheng Yu, Haiming Xu, Lingqiao Liu
HIGHLIGHT:        In low data regimes, a network often struggles to choose the correct regions for recognition and tends to overfit spurious correlated patterns from the training data. To tackle this issue, this paper proposes the self-boosting attention mechanism, a novel method for regularizing the network to focus on the key regions shared across samples and classes.

1043, TITLE:        VSA: Learning Varied-Size Window Attention in Vision Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6686_ECCV_2022_paper.php
AUTHORS:        Qiming Zhang, Yufei Xu, Jing Zhang, Dacheng Tao
HIGHLIGHT:        However, current models adopt a hand-crafted fixed-size window design, which restricts their capacity of modeling long-term dependencies and adapting to objects of different sizes. To address this drawback, we propose Varied-Size Window Attention (VSA) to learn adaptive window configurations from data.

1044, TITLE:        Unbiased Manifold Augmentation for Coarse Class Subdivision
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6777_ECCV_2022_paper.php
AUTHORS:        Baoming Yan, Ke Gao, Bo Gao, Lin Wang, Jiang Yang, Xiaobo Li
HIGHLIGHT:        Leveraging the recent progress of factor-disentangled generators, Unbiased Manifold Augmentation (UMA) is proposed for CCS.

1045, TITLE:        DenseHybrid: Hybrid Anomaly Detection for Dense Open-Set Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6838_ECCV_2022_paper.php
AUTHORS:        Matej Grci?, Petra Bevandi?, Siniša Šegvi?
HIGHLIGHT:        We therefore design a novel hybrid algorithm based on reinterpreting discriminative logits as a logarithm of the unnormalized joint distribution $\hat{p}(\mathbf{x},\mathbf{y})$

1046, TITLE:        Rethinking Confidence Calibration for Failure Prediction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6900_ECCV_2022_paper.php
AUTHORS:        Fei Zhu, Zhen Cheng, Xu-Yao Zhang, Cheng-Lin Liu
HIGHLIGHT:        In this paper, we find a general, widely-existed but actually-neglected phenomenon that most confidence calibration methods are useless or harmful for failure prediction.

1047, TITLE:        Uncertainty-Guided Source-Free Domain Adaptation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6976_ECCV_2022_paper.php
AUTHORS:        Subhankar Roy, Martin Trapp, Andrea Pilzer, Juho Kannala, Nicu Sebe, Elisa Ricci, Arno Solin
HIGHLIGHT:        We propose quantifying the uncertainty in the source model predictions and utilizing it to guide the target adaptation.

1048, TITLE:        Should All Proposals Be Treated Equally in Object Detection?

http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7151_ECCV_2022_paper.php
AUTHORS:        Yunsheng Li, Yinpeng Chen, Xiyang Dai, Dongdong Chen, Mengchen Liu, Pei Yu, Ying Jin, Lu Yuan, Zicheng Liu, Nuno Vasconcelos
HIGHLIGHT:        Previous works have emphasized detectors implemented with efficient backbones. The impact on this trade-off of proposal processing by the detection head is investigated in this work.

1049, TITLE:        VIP: Unified Certified Detection and Recovery for Patch Attack with Vision Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7173_ECCV_2022_paper.php
AUTHORS:        Junbo Li, Huan Zhang, Cihang Xie
HIGHLIGHT:        In this paper, we propose a unified framework to analyze certified patch defense tasks (including both certified detection and certified recovery) using the recently emerged vision transformer.

1050, TITLE:        incDFM: Incremental Deep Feature Modeling for Continual Novelty Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7176_ECCV_2022_paper.php
AUTHORS:        Amanda Rios, Nilesh Ahuja, Ibrahima Ndiour, Utku Genc, Laurent Itti, Omesh Tickoo
HIGHLIGHT:        They scale poorly under more realistic, continual learning regimes in which data distribution shifts occur. To address this critical gap, this paper proposes incDFM (incremental Deep Feature Modeling), a self-supervised continual novelty detector.

1051, TITLE:        IGFormer: Interaction Graph Transformer for Skeleton-Based Human Interaction Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7384_ECCV_2022_paper.php
AUTHORS:        Yunsheng Pang, Qiuhong Ke, Hossein Rahmani, James Bailey, Jun Liu
HIGHLIGHT:        In this work, we propose a novel Interaction Graph Transformer (IGFormer) network for skeleton-based interaction recognition via modeling the interactive body parts as graphs.

1052, TITLE:        PRIME: A Few Primitives Can Boost Robustness to Common Corruptions
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7539_ECCV_2022_paper.php
AUTHORS:        Apostolos Modas, Rahul Rade, Guillermo Ortiz-Jim&eacute;nez, Seyed-Mohsen Moosavi-Dezfooli, Pascal Frossard
HIGHLIGHT:        In this work, we take a step back and follow a principled approach to achieve robustness to common corruptions.

1053, TITLE:        Rotation Regularization without Rotation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7735_ECCV_2022_paper.php
AUTHORS:        Takumi Kobayashi
HIGHLIGHT:        In this paper, we propose a regularization method based on random rotation of feature vectors.

1054, TITLE:        Towards Accurate Open-Set Recognition via Background-Class Regularization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7883_ECCV_2022_paper.php
AUTHORS:        Wonwoo Cho, Jaegul Choo
HIGHLIGHT:        To conduct OSR via a simple inference process (without offline analyses) in standard classifier architectures, we use distance-based classifiers instead of conventional Softmax classifiers.

1055, TITLE:        In Defense of Image Pre-training for Spatiotemporal Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7899_ECCV_2022_paper.php
AUTHORS:        Xianhang Li, Huiyu Wang, Chen Wei, Jieru Mei, Alan Yuille, Yuyin Zhou, Cihang Xie
HIGHLIGHT:        Nonetheless, interestingly, by taking a closer look at these from-scratch learned CNNs, we note there exist certain 3D kernels that exhibit much stronger appearance modeling ability than others, arguably suggesting appearance information is already well disentangled in learning. Inspired by this observation, we hypothesize that the key to effectively leveraging image pre-training lies in the decomposition of learning spatial and temporal features, and revisiting image pre-training as the appearance prior to initializing 3D kernels.

1056, TITLE:        Augmenting Deep Classifiers with Polynomial Neural Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/8086_ECCV_2022_paper.php
AUTHORS:        Grigorios G. Chrysos, Markos Georgopoulos, Jiankang Deng, Jean Kossaifi, Yannis Panagakis, Anima Anandkumar
HIGHLIGHT:        In this work, we cast the study of deep classifiers under a unifying framework.

1057, TITLE:        Learning with Noisy Labels by Efficient Transition Matrix Estimation to Combat Label Miscorrection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/8140_ECCV_2022_paper.php
AUTHORS:        Seong Min Kye, Kwanghee Choi, Joonyoung Yi, Buru Chang
HIGHLIGHT:        Moreover, every training step requires at least three back-propagations, significantly slowing down the training speed. To mitigate these issues, we propose a robust and efficient method, FasTEN, which learns a label transition matrix on the fly.

1058, TITLE:        Online Task-Free Continual Learning with Dynamic Sparse Distributed Memory
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/8170_ECCV_2022_paper.php
AUTHORS:        Julien Pourcel, Ngoc-Son Vu, Robert M. French
HIGHLIGHT:        We propose in this paper an efficient semi-distributed associative memory algorithm called Dynamic Sparse Distributed Memory (DSDM) where learning and evaluating can be carried out at any point of time.

1059, TITLE: Contrastive Deep Supervision
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/59_ECCV_2022_paper.php
AUTHORS: Linfeng Zhang, Xin Chen, Junbo Zhang, Runpei Dong, Kaisheng Ma
HIGHLIGHT: However, deep supervision conflicts with the well-known observation that the shallow layers learn low-level features instead of task-biased high-level semantic features. To address this issue, this paper proposes a novel training framework named Contrastive Deep Supervision, which supervises the intermediate layers with augmentation-based contrastive learning.

1060, TITLE: Discriminability-Transferability Trade-Off: An Information-Theoretic Perspective
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/65_ECCV_2022_paper.php
AUTHORS: Quan Cui, Bingchen Zhao, Zhao-Min Chen, Borui Zhao, Renjie Song, Boyan Zhou, Jiajun Liang, Osamu Yoshie
HIGHLIGHT: This work simultaneously considers the discriminability and transferability properties of deep representations in the typical supervised learning task, i.e., image classification. By a comprehensive temporal analysis, we observe a trade-off between these two properties.

1061, TITLE: LocVTP: Video-Text Pre-training for Temporal Localization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/434_ECCV_2022_paper.php
AUTHORS: Meng Cao, Tianyu Yang, Junwu Weng, Can Zhang, Jue Wang, Yuexian Zou
HIGHLIGHT: In this paper, we experimentally analyze and demonstrate the incompatibility of current VTP methods with localization tasks, and propose a novel Localization-oriented Video-Ttext Pre-training framework, dubbed as LocVTP.

1062, TITLE: Few-Shot End-to-End Object Detection via Constantly Concentrated Encoding across Heads
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/516_ECCV_2022_paper.php
AUTHORS: Jiawei Ma, Guangxing Han, Shiyuan Huang, Yuncong Yang, Shih-Fu Chang
HIGHLIGHT: In this paper, we propose a few-shot adaptation strategy, Constantly Concentrated Encoding across heads (CoCo-RCNN), for the end-to-end detectors.

1063, TITLE: Implicit Neural Representations for Image Compression
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/537_ECCV_2022_paper.php
AUTHORS: Yannick Str&uuml,mpler, Janis Postels, Ren Yang, Luc Van Gool, Federico Tombari
HIGHLIGHT: Such compression algorithms are promising candidates as a general purpose approach for any coordinate-based data modality. However, in order to live up to this promise current INR-based compression algorithms need to improve their rate-distortion performance by a large margin. This work progresses on this problem.

1064, TITLE: LiP-Flow: Learning Inference-Time Priors for Codec Avatars via Normalizing Flows in Latent Space
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/958_ECCV_2022_paper.php
AUTHORS: Emre Aksan, Shugao Ma, Akin Caliskan, Stanislav Pidhorskyi, Alexander Richard, Shih-En Wei, Jason Saragih, Otmar Hilliges
HIGHLIGHT: However, at inference time, they must be driven by limited inputs such as partial views recorded by headset-mounted cameras or a front-facing camera, and sparse facial landmarks. To mitigate this asymmetry, we introduce a prior model that is conditioned on the runtime inputs and tie this prior space to the 3D face model via a normalizing flow in the latent space.

1065, TITLE: Learning to Drive by Watching YouTube Videos: Action-Conditioned Contrastive Policy Pretraining
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1277_ECCV_2022_paper.php
AUTHORS: Qihang Zhang, Zhenghao Peng, Bolei Zhou
HIGHLIGHT: In this work, we aim to pretrain policy representations for driving tasks by watching hours-long uncurated YouTube videos.

1066, TITLE: Learning Ego 3D Representation As Ray Tracing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1376_ECCV_2022_paper.php
AUTHORS: Jiachen Lu, Zheyuan Zhou, Xiatian Zhu, Hang Xu, Li Zhang
HIGHLIGHT: In this paper, we present a novel end-to-end architecture for ego 3D representation learning from an arbitrary number of unconstrained camera views.

1067, TITLE: Static and Dynamic Concepts for Self-Supervised Video Representation Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1441_ECCV_2022_paper.php
AUTHORS: Rui Qian, Shuangrui Ding, Xian Liu, Dahua Lin
HIGHLIGHT: In this paper, we propose a novel learning scheme for self-supervised video representation learning.

1068, TITLE: SphereFed: Hyperspherical Federated Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2255_ECCV_2022_paper.php
AUTHORS: Xin Dong, Sai Qian Zhang, Ang Li, H.T. Kung
HIGHLIGHT: We introduce the Hyperspherical Federated Learning (SphereFed) framework to address the non-i.i.d. issue by constraining learned representations of data points to be on a unit hypersphere shared by clients.

1069, TITLE: Hierarchically Self-Supervised Transformer for Human Skeleton Representation Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2663_ECCV_2022_paper.php
AUTHORS: Yuxiao Chen, Long Zhao, Jianbo Yuan, Yu Tian, Zhaoyang Xia, Shijie Geng, Ligong Han, Dimitris N. Metaxas
HIGHLIGHT: Recent studies focus on learning video-level temporal and discriminative information using contrastive learning, but overlook the hierarchical spatial-temporal nature of human skeletons. Different from such superficial supervision at the

video level, we propose a self-supervised hierarchical pre-training scheme incorporated into a hierarchical Transformer-based skeleton sequence encoder (Hi-TRS), to explicitly capture spatial, short-term, and long-term temporal dependencies at frame, clip, and video levels, respectively.

1070, TITLE:		Posterior Refinement on Metric Matrix Improves Generalization Bound in Metric Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2701_ECCV_2022_paper.php
AUTHORS:		Mingda Wang, Canqian Yang, Yi Xu
HIGHLIGHT:		In this paper, we attempt to fill up this research gap and theoretically analyze the impact of the refined metric matrix property on the generalization gap.

1071, TITLE:		Balancing Stability and Plasticity through Advanced Null Space in Continual Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2753_ECCV_2022_paper.php
AUTHORS:		Yajing Kong, Liu Liu, Zhen Wang, Dacheng Tao
HIGHLIGHT:		In this paper, we propose a new continual learning approach, Advanced Null Space (AdNS), to balance the stability and plasticity without storing any old data of previous tasks.

1072, TITLE:		DisCo: Remedying Self-Supervised Learning on Lightweight Models with Distilled Contrastive Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2827_ECCV_2022_paper.php
AUTHORS:		Yuting Gao, Jia-Xin Zhuang, Shaohui Lin, Hao Cheng, Xing Sun, Ke Li, Chunhua Shen
HIGHLIGHT:		Since current SSL methods mainly rely on contrastive learning to train the network, we propose a simple yet effective method termed Distilled Contrastive Learning (DisCo) to ease this issue.

1073, TITLE:		CoSCL: Cooperation of Small Continual Learners Is Stronger than a Big One
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2904_ECCV_2022_paper.php
AUTHORS:		Liyuan Wang, Xingxing Zhang, Qian Li, Jun Zhu, Yi Zhong
HIGHLIGHT:		In this work, we theoretically analyze the generalization errors for learning plasticity and memory stability in continual learning, which can be uniformly upper-bounded by (1) discrepancy between task distributions, (2) flatness of loss landscape and (3) cover of parameter space.

1074, TITLE:		Manifold Adversarial Learning for Cross-Domain 3D Shape Representation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3155_ECCV_2022_paper.php
AUTHORS:		Hao Huang, Cheng Chen, Yi Fang
HIGHLIGHT:		In this paper, we propose to learn 3D point cloud representation on a seen source domain and generalize to an unseen target domain via adversarial learning.

1075, TITLE:		Fast-MoCo: Boost Momentum-Based Contrastive Learning with Combinatorial Patches
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3169_ECCV_2022_paper.php
AUTHORS:		Yuanzheng Ci, Chen Lin, Lei Bai, Wanli Ouyang
HIGHLIGHT:		We propose Fast-MoCo - a novel framework that utilizes combinatorial patches to construct multiple positive pairs from two augmented views, which provides abundant supervision signals that bring significant acceleration with neglectable extra computational cost.

1076, TITLE:		LoRD: Local 4D Implicit Representation for High-Fidelity Dynamic Human Modeling
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3200_ECCV_2022_paper.php
AUTHORS:		Boyan Jiang, Xinlin Ren, Mingsong Dou, Xiangyang Xue, Yanwei Fu, Yinda Zhang
HIGHLIGHT:		While many deep local representations have shown promising results for 3D shape modeling, their 4D counterpart does not exist yet. In this paper, we fill this blank by proposing a novel Local 4D implicit Representation for Dynamic clothed human, named LoRD, which has the merits of both 4D human modeling and local representation, and enables high-fidelity reconstruction with detailed surface deformations, such as clothing wrinkles.

1077, TITLE:		On the Versatile Uses of Partial Distance Correlation in Deep Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3213_ECCV_2022_paper.php
AUTHORS:		Xingjian Zhen, Zihang Meng, Rudrasis Chakraborty, Vikas Singh
HIGHLIGHT:		Approaches such as canonical correlation analysis (CCA) are applicable in principle, but have been sparingly used so far. In this paper, we revisit a (less widely known) from statistics, called distance correlation (and its partial variant), designed to evaluate correlation between feature spaces of different dimensions.

1078, TITLE:		Self-Regulated Feature Learning via Teacher-Free Feature Distillation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3287_ECCV_2022_paper.php
AUTHORS:		Lujun Li
HIGHLIGHT:		Conventional feature distillation framework demands extra selecting/training budgets of teachers and complex transformations to align the features between teacher-student models. To address the problem, we analyze teacher roles in feature distillation and have an intriguing observation: additional teacher architectures are not always necessary.

1079, TITLE:		Balancing between Forgetting and Acquisition in Incremental Subpopulation Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3551_ECCV_2022_paper.php
AUTHORS:		Mingfu Liang, Jiahuan Zhou, Wei Wei, Ying Wu
HIGHLIGHT:		In this paper, we propose a novel two-stage learning scheme to explicitly disentangle the acquisition and forgetting for achieving a better balance between subpopulation learning and seen population forgetting: in the first "gain-acquisition" stage, we progressively learn a new classifier based on the margin-enforce loss, which enforces the hard samples and population to

have a larger weight for classifier updating and avoid uniformly updating all the population in the second "counter-forgetting" stage, we search for the proper combination of the new and old classifiers by optimizing a novel objective based on proxies of forgetting and acquisition.

1080, TITLE:        Counterfactual Intervention Feature Transfer for Visible-Infrared Person Re-identification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3677_ECCV_2022_paper.php
AUTHORS:        Xulin Li, Yan Lu, Bin Liu, Yating Liu, Guojun Yin, Qi Chu, Jinyang Huang, Feng Zhu, Rui Zhao, Nenghai Yu
HIGHLIGHT:        We analyze that the well-trained input features weaken the learning of graph topology, making it not generalized enough during the inference process. In this paper, we propose a Counterfactual Intervention Feature Transfer (CIFT) method to tackle these problems.

1081, TITLE:        DAS: Densely-Anchored Sampling for Deep Metric Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3844_ECCV_2022_paper.php
AUTHORS:        Lizhao Liu, Shangxin Huang, Zhuangwei Zhuang, Ran Yang, Mingkui Tan, Yaowei Wang
HIGHLIGHT:        In this work, we investigate how to alleviate the "missing embedding" issue to improve the sampling quality and achieve effective DML.

1082, TITLE:        Learn from All: Erasing Attention Consistency for Noisy Label Facial Expression Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3977_ECCV_2022_paper.php
AUTHORS:        Yuhang Zhang, Chengrui Wang, Xu Ling, Weihong Deng
HIGHLIGHT:        In this paper, we explore dealing with noisy labels from a new feature-learning perspective.

1083, TITLE:        A Non-Isotropic Probabilistic Take On Proxy-Based Deep Metric Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3991_ECCV_2022_paper.php
AUTHORS:        Michael Kirchhof, Karsten Roth, Zeynep Akata, Enkelejda Kasneci
HIGHLIGHT:        However, this disregards the embedding norm, which can carry additional beneficial context such as class- or image-intrinsic uncertainty. In addition, proxy-based DML struggles to learn class-internal structures. To address both issues at once, we introduce non-isotropic probabilistic proxy-based DML.

1084, TITLE:        TokenMix: Rethinking Image Mixing for Data Augmentation in Vision Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4037_ECCV_2022_paper.php
AUTHORS:        Jihao Liu, Boxiao Liu, Hang Zhou, Hongsheng Li, Yu Liu
HIGHLIGHT:        In this paper, we propose a novel data augmentation technique TokenMix to improve the performance of vision transformers.

1085, TITLE:        UFO: Unified Feature Optimization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4041_ECCV_2022_paper.php
AUTHORS:        Teng Xi, Yifan Sun, Deli Yu, Bi Li, Nan Peng, Gang Zhang, Xinyu Zhang, Zhigang Wang, Jinwen Chen, Jian Wang, Lufei Liu, Haocheng Feng, Junyu Han, Jingtuo Liu, Errui Ding, Jingdong Wang
HIGHLIGHT:        This paper proposes a novel Unified Feature Optimization (UFO) paradigm for training and deploying deep models under real-world and large-scale scenarios, which requires a collection of multiple AI functions.

1086, TITLE:        Sound Localization by Self-Supervised Time Delay Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4119_ECCV_2022_paper.php
AUTHORS:        Ziyang Chen, David F. Fouhey, Andrew Owens
HIGHLIGHT:        Estimating a sound's time delay requires finding correspondences between the signals recorded by each microphone. We propose to learn these correspondences through self-supervision, drawing on recent techniques from visual tracking.

1087, TITLE:        X-Learner: Learning Cross Sources and Tasks for Universal Visual Representation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4271_ECCV_2022_paper.php
AUTHORS:        Yinan He, Gengshi Huang, Siyu Chen, Jianing Teng, Kun Wang, Zhenfei Yin, Lu Sheng, Ziwei Liu, Yu Qiao, Jing Shao
HIGHLIGHT:        In this work, we propose a representation learning framework called X-Learner, which learns the universal feature of multiple vision tasks supervised by various sources, with expansion and squeeze stage:1) Expansion Stage: X-Learner learns the task-specific feature to alleviate task interference and enrich the representation by reconciliation layer.

1088, TITLE:        SLIP: Self-Supervision Meets Language-Image Pre-training
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4303_ECCV_2022_paper.php
AUTHORS:        Norman Mu, Alexander Kirillov, David Wagner, Saining Xie
HIGHLIGHT:        In this work, we explore whether self-supervised learning can aid in the use of language supervision for visual representation learning with Vision Transformers.

1089, TITLE:        Discovering Deformable Keypoint Pyramids
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4659_ECCV_2022_paper.php
AUTHORS:        Jianing Qian, Anastasios Panagopoulos, Dinesh Jayaraman
HIGHLIGHT:        In natural scenes, these keypoints are often hierarchically grouped into sets corresponding to coherently moving objects and their moveable and deformable parts. Motivated by this observation, we propose Keypoint Pyramids, an approach to exploit this property for discovering keypoints without explicit supervision.

1090, TITLE:        Neural Video Compression Using GANs for Detail Synthesis and Propagation

http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4802_ECCV_2022_paper.php
AUTHORS:          Fabian Mentzer, Eirikur Agustsson, Johannes Ball&eacute;, David Minnen, Nick Johnston, George Toderici
HIGHLIGHT:          We present the first neural video compression method based on generative adversarial networks (GANs).

1091, TITLE:          A Contrastive Objective for Learning Disentangled Representations
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5252_ECCV_2022_paper.php
AUTHORS:          Jonathan Kahana, Yedid Hoshen
HIGHLIGHT:          We present a new approach, proposing a new domain-wise contrastive objective for ensuring invariant representations.

1092, TITLE:          PT4AL: Using Self-Supervised Pretext Tasks for Active Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5340_ECCV_2022_paper.php
AUTHORS:          John Seon Keun Yi, Minseok Seo, Jongchan Park, Dong-Geol Choi
HIGHLIGHT:          We propose a novel active learning approach that utilizes self-supervised pretext tasks and a unique data sampler to select data that are both difficult and representative.

1093, TITLE:          ParC-Net: Position Aware Circular Convolution with Merits from ConvNets and Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5362_ECCV_2022_paper.php
AUTHORS:          Haokui Zhang, Wenze Hu, Xiaoyu Wang
HIGHLIGHT:          However, in the area of small models for mobile or resource constrained devices, ConvNet still has its own advantages in both performance and model complexity. We propose ParC-Net, a pure ConvNet based backbone model that further strengthens these advantages by fusing the merits of vision transformers into ConvNets.

1094, TITLE:          DualPrompt: Complementary Prompting for Rehearsal-Free Continual Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5428_ECCV_2022_paper.php
AUTHORS:          Zifeng Wang, Zizhao Zhang, Sayna Ebrahimi, Ruoxi Sun, Han Zhang, Chen-Yu Lee, Xiaoqi Ren, Guolong Su, Vincent Perot, Jennifer Dy, Tomas Pfister
HIGHLIGHT:          In this work, we present a simple yet effective framework, DualPrompt, which learns a tiny set of parameters, called prompt, to properly instruct a pre-trained model to learn tasks arriving sequentially, without buffering past examples.

1095, TITLE:          Unifying Visual Contrastive Learning for Object Recognition from a Graph Perspective
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5460_ECCV_2022_paper.php
AUTHORS:          Shixiang Tang, Feng Zhu, Lei Bai, Rui Zhao, Chenyu Wang, Wanli Ouyang
HIGHLIGHT:          In this paper, we propose to \underline{Uni}fy existing unsupervised \underline{V}isual \underline{C}ontrastive \underline{L}earning methods by using a GCN layer as the predictor layer (UniVCL), which deserves two merits to unsupervised learning in object recognition.

1096, TITLE:          Decoupled Contrastive Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5549_ECCV_2022_paper.php
AUTHORS:          Chun-Hsiao Yeh, Cheng-Yao Hong, Yen-Chi Hsu, Tyng-Luh Liu, Yubei Chen, Yann LeCun
HIGHLIGHT:          By removing the NPC effect, we propose decoupled contrastive learning (DCL) loss, which removes the positive term from the denominator and significantly improves the learning efficiency.

1097, TITLE:          Joint Learning of Localized Representations from Medical Images and Reports
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5595_ECCV_2022_paper.php
AUTHORS:          Philip M&uuml;ller, Georgios Kaissis, Congyu Zou, Daniel Rueckert
HIGHLIGHT:          Still, most existing methods target image classification downstream tasks and may not be optimal for localized tasks like semantic segmentation or object detection. We therefore propose Localized representation learning from Vision and Text (LoVT), a text-supervised pre-training method that explicitly targets localized medical imaging tasks.

1098, TITLE:          The Challenges of Continuous Self-Supervised Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5667_ECCV_2022_paper.php
AUTHORS:          Senthil Purushwalkam, Pedro Morgado, Abhinav Gupta
HIGHLIGHT:          We propose the use of replay buffers as an approach to alleviate the issues of inefficiency and temporal correlations.

1099, TITLE:          Conditional Stroke Recovery for Fine-Grained Sketch-Based Image Retrieval
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6114_ECCV_2022_paper.php
AUTHORS:          Zhixin Ling, Zhen Xing, Jian Zhou, Xiangdong Zhou
HIGHLIGHT:          To complete the auxiliary task, we propose an unsupervised stroke disorder algorithm, which does well in stroke extraction and sketch augmentation.

1100, TITLE:          Identifying Hard Noise in Long-Tailed Sample Distribution
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6326_ECCV_2022_paper.php
AUTHORS:          Xuanyu Yi, Kaihua Tang, Xian-Sheng Hua, Joo-Hwee Lim, Hanwang Zhang
HIGHLIGHT:          Such imbalance makes a classifier less discriminative for the tail classes, whose previously "easy" noises are now turned into "hard" ones--they are almost as outliers as the tail samples. We introduce this new challenge as Noisy Long-Tailed Classification (NLT).

1101, TITLE:          Relative Contrastive Loss for Unsupervised Representation Learning

http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6602_ECCV_2022_paper.php
AUTHORS:	Shixiang Tang, Feng Zhu, Lei Bai, Rui Zhao, Wanli Ouyang
HIGHLIGHT:	Motivated by the ability of humans in recognizing relatively positive/negative samples, we propose the Relative Contrastive Loss (RCL) to learn feature representation from relatively positive/negative pairs, which not only learns more real world semantic variations than the single-instance-positive methods but also respects positive-negative relativeness compared with absolute prototype-positive methods.

1102, TITLE:	Fine-Grained Fashion Representation Learning by Online Deep Clustering
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6666_ECCV_2022_paper.php
AUTHORS:	Yang Jiao, Ning Xie, Yan Gao, Chien-chih Wang, Yi Sun
HIGHLIGHT:	In this work, we present a deep learning based online clustering method to jointly learn fine-grained fashion representations for all attributes at both instance and cluster level, where the attribute-specific cluster centers are online estimated.

1103, TITLE:	NashAE: Disentangling Representations through Adversarial Covariance Minimization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6895_ECCV_2022_paper.php
AUTHORS:	Eric Yeats, Frank Liu, David Womble, Hai Li
HIGHLIGHT:	We present a self-supervised method to disentangle factors of variation in high-dimensional data that does not rely on prior knowledge of the underlying variation profile (e.g., no assumptions on the number or distribution of the individual variables to be extracted).

1104, TITLE:	A Gyrovector Space Approach for Symmetric Positive Semi-Definite Matrix Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6921_ECCV_2022_paper.php
AUTHORS:	Xuan Son Nguyen
HIGHLIGHT:	While these works share a common idea of generalizing some basic operations in deep neural networks (DNNs) to the SPSD manifold setting, their proposed generalizations are usually designed in an ad hoc manner. In this work, we make an attempt to propose a principled framework for building such generalizations.

1105, TITLE:	Learning Visual Representation from Modality-Shared Contrastive Language-Image Pre-training
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7004_ECCV_2022_paper.php
AUTHORS:	Haoxuan You, Luowei Zhou, Bin Xiao, Noel Codella, Yu Cheng, Ruochen Xu, Shih-Fu Chang, Lu Yuan
HIGHLIGHT:	However, recent work suggests that transformers can support learning across multiple modalities and allow knowledge sharing. Inspired by this, we investigate a variety of Modality-Shared Contrastive Language-Image Pre-training (MS-CLIP) frameworks.

1106, TITLE:	Contrasting Quadratic Assignments for Set-Based Representation Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7051_ECCV_2022_paper.php
AUTHORS:	Artem Moskalev, Ivan Sosnovik, Volker Fischer, Arnold Smeulders
HIGHLIGHT:	In this work, we note that the approach of considering individual pairs cannot account for both intra-set and inter-set similarities when the sets are formed from the views of the data.

1107, TITLE:	Class-Incremental Learning with Cross-Space Clustering and Controlled Transfer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7500_ECCV_2022_paper.php
AUTHORS:	Arjun Ashok, K J Joseph, Vineeth N Balasubramanian
HIGHLIGHT:	We propose two distillation-based objectives for class incremental learning that leverage the structure of the feature space to maintain accuracy on previous classes, as well as enable learning the new classes.

1108, TITLE:	Object Discovery and Representation Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7509_ECCV_2022_paper.php
AUTHORS:	Olivier J. H&eacute,naff, Skanda Koppula, Evan Shelhamer, Daniel Zoran, Andrew Jaegle, Andrew Zisserman, Jo&atilde,o Carreira, Relja Arandjelovi?
HIGHLIGHT:	However, by introducing hand-crafted image segmentations to define regions of interest, or specialized augmentation strategies, these methods sacrifice the simplicity and generality that makes SSL so powerful. Instead, we propose a self-supervised learning paradigm that discovers this image structure by itself.

1109, TITLE:	Trading Positional Complexity vs Deepness in Coordinate Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7771_ECCV_2022_paper.php
AUTHORS:	Jianqiao Zheng, Sameera Ramasinghe, Xueqian Li, Simon Lucey
HIGHLIGHT:	Hitherto, the rationale for the effectiveness of these \emph{positional encodings} has been mainly studied through a Fourier lens. In this paper, we strive to broaden this understanding by showing that alternative non-Fourier embedding functions can indeed be used for positional encoding.

1110, TITLE:	MVDG: A Unified Multi-View Framework for Domain Generalization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7845_ECCV_2022_paper.php
AUTHORS:	Jian Zhang, Lei Qi, Yinghuan Shi, Yang Gao
HIGHLIGHT:	In this paper, we propose a novel multi-view DG framework to effectively reduce the overfitting in both the training and test stage.

1111, TITLE:	Panoptic Scene Graph Generation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/222_ECCV_2022_paper.php
AUTHORS:	Jingkang Yang, Yi Zhe Ang, Zujin Guo, Kaiyang Zhou, Wayne Zhang, Ziwei Liu

HIGHLIGHT: In this work, we introduce panoptic scene graph generation (PSG task), a new problem that requires the model to generate more comprehensive scene graph representations based on panoptic segmentations rather than rigid bounding boxes.

1112, TITLE: Object-Compositional Neural Implicit Surfaces
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/634_ECCV_2022_paper.php
AUTHORS: Qianyi Wu, Xian Liu, Yuedong Chen, Kejie Li, Chuanxia Zheng, Jianfei Cai, Jianmin Zheng
HIGHLIGHT: This paper proposes a novel framework, ObjectSDF, to build an object-compositional neural implicit representation with high fidelity in 3D reconstruction and object representation.

1113, TITLE: RigNet: Repetitive Image Guided Network for Depth Completion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/734_ECCV_2022_paper.php
AUTHORS: Zhiqiang Yan, Kun Wang, Xiang Li, Zhenyu Zhang, Jun Li, Jian Yang
HIGHLIGHT: However, blurry guidance in the image and unclear structure in the depth still impede the performance of the image guided frameworks. To tackle these problems, we explore a repetitive design in our image guided network to gradually and sufficiently recover depth values.

1114, TITLE: FADE: Fusing the Assets of Decoder and Encoder for Task-Agnostic Upsampling
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/829_ECCV_2022_paper.php
AUTHORS: Hao Lu, Wenze Liu, Hongtao Fu, Zhiguo Cao
HIGHLIGHT: In this work, we present FADE, a novel, plug-and-play, and task-agnostic upsampling operator.

1115, TITLE: LiDAL: Inter-Frame Uncertainty Based Active Learning for 3D LiDAR Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/893_ECCV_2022_paper.php
AUTHORS: Zeyu Hu, Xuyang Bai, Runze Zhang, Xin Wang, Guangyuan Sun, Hongbo Fu, Chiew-Lan Tai
HIGHLIGHT: We propose LiDAL, a novel active learning method for 3D LiDAR semantic segmentation by exploiting inter-frame uncertainty among LiDAR frames.

1116, TITLE: Hierarchical Memory Learning for Fine-Grained Scene Graph Generation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1020_ECCV_2022_paper.php
AUTHORS: Youming Deng, Yansheng Li, Yongjun Zhang, Xiang Xiang, Jian Wang, Jingdong Chen, Jiayi Ma
HIGHLIGHT: In order to alleviate the impact of the suboptimum mixed-granularity annotation and long-tail effect problems, this paper proposes a novel Hierarchical Memory Learning (HML) framework to learn the model from simple to complex, which is similar to the human beings' hierarchical memory learning process.

1117, TITLE: DODA: Data-Oriented Sim-to-Real Domain Adaptation for 3D Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1275_ECCV_2022_paper.php
AUTHORS: Runyu Ding, Jihan Yang, Li Jiang, Xiaojuan Qi
HIGHLIGHT: In this work, we propose a Data-Oriented Domain Adaptation (DODA) framework to mitigate pattern and context gaps caused by different sensing mechanisms and layout placements across domains.

1118, TITLE: MTFormer: Multi-task Learning via Transformer and Cross-Task Reasoning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1353_ECCV_2022_paper.php
AUTHORS: Xiaogang Xu, Hengshuang Zhao, Vibhav Vineet, Ser-Nam Lim, Antonio Torralba
HIGHLIGHT: In this paper, we explore the advantages of utilizing transformer structures for addressing multi-task learning (MTL).

1119, TITLE: MonoPLFlowNet: Permutohedral Lattice FlowNet for Real-Scale 3D Scene Flow Estimation with Monocular Images
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1569_ECCV_2022_paper.php
AUTHORS: Runfa Li, Truong Nguyen
HIGHLIGHT: We present a deep learning architecture on permutohedral lattice - MonoPLFlowNet.

1120, TITLE: TO-Scene: A Large-Scale Dataset for Understanding 3D Tabletop Scenes
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1792_ECCV_2022_paper.php
AUTHORS: Mutian Xu, Pei Chen, Haolin Liu, Xiaoguang Han
HIGHLIGHT: Unfortunately, it is hard to meet this demand by directly deploying data-driven algorithms, since 3D tabletop scenes are rarely available in current datasets. To remedy this defect, we introduce TO-Scene, a large-scale dataset focusing on tabletop scenes, which contains 20,740 scenes with three variants.

1121, TITLE: Is It Necessary to Transfer Temporal Knowledge for Domain Adaptive Video Semantic Segmentation?
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2154_ECCV_2022_paper.php
AUTHORS: Xinyi Wu, Zhenyao Wu, Jin Wan, Lili Ju, Song Wang
HIGHLIGHT: In this paper, we argue that it is not necessary to transfer temporal knowledge since the temporal continuity of video segmentation in the target domain can be estimated and enforced without reference to videos in the source domain.

1122, TITLE: Meta Spatio-Temporal Debiasing for Video Scene Graph Generation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2293_ECCV_2022_paper.php
AUTHORS: Li Xu, Haoxuan Qu, Jason Kuen, Jiuxiang Gu, Jun Liu

HIGHLIGHT: However, due to the long-tailed training data in datasets, the generalization performance of existing VidSGG models can be affected by the spatio-temporal conditional bias problem. In this work, from the perspective of meta-learning, we propose a novel Meta Video Scene Graph Generation (MVSGG) framework to address such a bias problem.

1123, TITLE: Improving the Reliability for Confidence Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2667_ECCV_2022_paper.php
AUTHORS: Haoxuan Qu, Yanchao Li, Lin Geng Foo, Jason Kuen, Jiuxiang Gu, Jun Liu
HIGHLIGHT: In this work, we propose a meta-learning framework that can simultaneously improve upon both qualities in a confidence estimation model.Specifically, we first construct virtual training and testing sets with some intentionally designed distribution differences between them.

1124, TITLE: Fine-Grained Scene Graph Generation with Data Transfer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2723_ECCV_2022_paper.php
AUTHORS: Ao Zhang, Yuan Yao, Qianyu Chen, Wei Ji, Zhiyuan Liu, Maosong Sun, Tat-Seng Chua
HIGHLIGHT: To deal with the problems above, we propose a novel Internal and External Data Transfer (IETrans) method, which can be applied in a plug-and-play fashion and expanded to large SGG with 1,807 predicate classes.

1125, TITLE: Pose2Room: Understanding 3D Scenes from Human Activities
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3217_ECCV_2022_paper.php
AUTHORS: Yinyu Nie, Angela Dai, Xiaoguang Han, Matthias Nie&szlig,ner
HIGHLIGHT: In this work, we pose the question: Can we reason about object structure in real-world environments solely from human trajectory information?

1126, TITLE: Towards Hard-Positive Query Mining for DETR-Based Human-Object Interaction Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3455_ECCV_2022_paper.php
AUTHORS: Xubin Zhong, Changxing Ding, Zijian Li, Shaoli Huang
HIGHLIGHT: Accordingly, in this paper, we propose to enhance DETR's robustness by mining hard-positive queries, which are forced to make correct predictions using partial visual cues.

1127, TITLE: Discovering Human-Object Interaction Concepts via Self-Compositional Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3593_ECCV_2022_paper.php
AUTHORS: Zhi Hou, Baosheng Yu, Dacheng Tao
HIGHLIGHT: In this paper, 1) we introduce a novel and challenging task for a comprehensive HOI understanding, which is termed as HOI Concept Discovery and 2) we devise a self-compositional learning framework (or SCL) for HOI concept discovery.

1128, TITLE: Primitive-Based Shape Abstraction via Nonparametric Bayesian Inference
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3665_ECCV_2022_paper.php
AUTHORS: Yuwei Wu, Weixiao Liu, Sipu Ruan, Gregory S. Chirikjian
HIGHLIGHT: In this paper, we propose a novel non-parametric Bayesian statistical method to infer an abstraction, consisting of an unknown number of geometric primitives, from a point cloud.

1129, TITLE: Stereo Depth Estimation with Echoes
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3792_ECCV_2022_paper.php
AUTHORS: Chenghao Zhang, Kun Tian, Bolin Ni, Gaofeng Meng, Bin Fan, Zhaoxiang Zhang, Chunhong Pan
HIGHLIGHT: Motivated by the reciprocal relationship between both modalities, in this paper, we propose an end-to-end framework named StereoEchoes for stereo depth estimation with echoes.

1130, TITLE: Inverted Pyramid Multi-task Transformer for Dense Scene Understanding
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4220_ECCV_2022_paper.php
AUTHORS: Hanrong Ye, Dan Xu
HIGHLIGHT: In this paper, we propose a novel end-to-end Inverted Pyramid multi-task Transformer (InvPT) to perform simultaneous modeling of spatial positions and multiple tasks in a unified framework.

1131, TITLE: PETR: Position Embedding Transformation for Multi-View 3D Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4420_ECCV_2022_paper.php
AUTHORS: Yingfei Liu, Tiancai Wang, Xiangyu Zhang, Jian Sun
HIGHLIGHT: In this paper, we develop position embedding transformation (PETR) for multi-view 3D object detection.

1132, TITLE: S2Net: Stochastic Sequential Pointcloud Forecasting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4451_ECCV_2022_paper.php
AUTHORS: Xinshuo Weng, Junyu Nan, Kuan-Hui Lee, Rowan McAllister, Adrien Gaidon, Nicholas Rhinehart, Kris M. Kitani
HIGHLIGHT: In this work, we tackle the stochastic SPF problem by proposing a generative model with two main components: (1) a conditional variational recurrent neural network that models a temporally-dependent latent space (2) a pyramid-LSTM that increases the fidelity of predictions with temporally-aligned skip connections.

1133, TITLE: RA-Depth: Resolution Adaptive Self-Supervised Monocular Depth Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4496_ECCV_2022_paper.php
AUTHORS: Mu He, Le Hui, Yikai Bian, Jian Ren, Jin Xie, Jian Yang

HIGHLIGHT: In this paper, we propose a resolution adaptive self-supervised monocular depth estimation method (RA-Depth) by learning the scale invariance of the scene depth.

1134, TITLE: PolyphonicFormer: Unified Query Learning for Depth-Aware Video Panoptic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4533_ECCV_2022_paper.php
AUTHORS: Haobo Yuan, Xiangtai Li, Yibo Yang, Guangliang Cheng, Jing Zhang, Yunhai Tong, Lefei Zhang, Dacheng Tao
HIGHLIGHT: However, the relationship between the depth and panoptic segmentation is not well explored -- simply combining existing methods leads to competition and needs carefully weight balancing. In this paper, we present PolyphonicFormer, a vision transformer to unify these sub-tasks under the DVPS task and lead to more robust results.

1135, TITLE: SQN: Weakly-Supervised Semantic Segmentation of Large-Scale 3D Point Clouds
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4568_ECCV_2022_paper.php
AUTHORS: Qingyong Hu, Bo Yang, Guangchi Fang, Yulan Guo, Aleš Leonardis, Niki Trigoni, Andrew Markham
HIGHLIGHT: We observe that, as point clouds are samples of the 3D world, the distribution of points in a local neighbourhood is relatively homogeneous, exhibiting strong semantic similarity. Motivated by this, we propose a new weak supervision method to implicitly augment these highly sparse supervision signals.

1136, TITLE: PointMixer: MLP-Mixer for Point Cloud Understanding
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4588_ECCV_2022_paper.php
AUTHORS: Jaesung Choe, Chunghyun Park, Francois Rameau, Jaesik Park, In So Kweon
HIGHLIGHT: Unlike images, point clouds are inherently sparse, unordered and irregular, which limits the direct use of MLP-Mixer for point cloud understanding. To overcome these limitations, we propose PointMixer, a universal point set operator that facilitates information sharing among unstructured 3D point cloud.

1137, TITLE: Initialization and Alignment for Adversarial Texture Optimization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4622_ECCV_2022_paper.php
AUTHORS: Xiaoming Zhao, Zhizhen Zhao, Alexander G. Schwing
HIGHLIGHT: To improve robustness, particularly of recent adversarial texture optimization, we develop an explicit initialization and an alignment procedure.

1138, TITLE: MOTR: End-to-End Multiple-Object Tracking with TRansformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4669_ECCV_2022_paper.php
AUTHORS: Fangao Zeng, Bin Dong, Yuang Zhang, Tiancai Wang, Xiangyu Zhang, Yichen Wei
HIGHLIGHT: In this paper, we propose MOTR, which extends DETR \cite{carion2020detr} and introduces "track query" to model the tracked instances in the entire video.

1139, TITLE: GALA: Toward Geometry-and-Lighting-Aware Object Search for Compositing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4685_ECCV_2022_paper.php
AUTHORS: Sijie Zhu, Zhe Lin, Scott Cohen, Jason Kuen, Zhifei Zhang, Chen Chen
HIGHLIGHT: To move a step further, this paper proposes GALA (Geometry-and-Lighting-Aware), a generic foreground object search method with discriminative modeling on geometry and lighting compatibility for open-world image compositing.

1140, TITLE: LaLaLoc++: Global Floor Plan Comprehension for Layout Localisation in Unvisited Environments
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4970_ECCV_2022_paper.php
AUTHORS: Henry Howard-Jenkins, Victor Adrian Prisacariu
HIGHLIGHT: We present LaLaLoc++, a method for floor plan localisation in unvisited environments through latent representations of room layout.

1141, TITLE: 3D-PL: Domain Adaptive Depth Estimation with 3D-Aware Pseudo-Labeling
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5129_ECCV_2022_paper.php
AUTHORS: Yu-Ting Yen, Chia-Ni Lu, Wei-Chen Chiu, Yi-Hsuan Tsai
HIGHLIGHT: In this paper, we develop a domain adaptation framework via generating reliable pseudo ground truths of depth from real data to provide direct supervisions.

1142, TITLE: Panoptic-PartFormer: Learning a Unified Model for Panoptic Part Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5523_ECCV_2022_paper.php
AUTHORS: Xiangtai Li, Shilin Xu, Yibo Yang, Guangliang Cheng, Yunhai Tong, Dacheng Tao
HIGHLIGHT: Previous work mainly utilizes separated approaches to handle thing, stuff, and part predictions individually without performing any shared computation and task association. In this work, we aim to unify these tasks at the architectural level, designing the first end-to-end unified method named Panoptic-PartFormer.

1143, TITLE: Salient Object Detection for Point Clouds
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5613_ECCV_2022_paper.php
AUTHORS: Songlin Fan, Wei Gao, Ge Li
HIGHLIGHT: Differing from SOD for images, we find the attention shift of point clouds may provoke saliency conflict, i.e., an object paradoxically belongs to salient and non-salient categories. To eschew this issue, we present a novel view-dependent perspective of salient objects, reasonably reflecting the most eye-catching objects in point cloud scenarios.

1144, TITLE: Learning Semantic Segmentation from Multiple Datasets with Label Shifts

http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6080_ECCV_2022_paper.php
AUTHORS: Dongwan Kim, Yi-Hsuan Tsai, Yumin Suh, Masoud Faraki, Sparsh Garg, Manmohan Chandraker, Bohyung Han
HIGHLIGHT: While it is desirable to train segmentation models on an aggregation of multiple datasets, a major challenge is that the label space of each dataset may be in conflict with one another. To tackle this challenge, we propose UniSeg, an effective and model-agnostic approach to automatically train segmentation models across multiple datasets with heterogeneous label spaces, without requiring any manual relabeling efforts.

1145, TITLE: Weakly Supervised 3D Scene Segmentation with Region-Level Boundary Awareness and Instance Discrimination
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6463_ECCV_2022_paper.php
AUTHORS: Kangcheng Liu, Yuzhi Zhao, Qiang Nie, Zhi Gao, Ben M. Chen
HIGHLIGHT: The paper introduces an effective approach to tackle the 3D scene understanding problem when labeled scenes are limited.

1146, TITLE: Towards Open-Vocabulary Scene Graph Generation with Prompt-Based Finetuning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6652_ECCV_2022_paper.php
AUTHORS: Tao He, Lianli Gao, Jingkuan Song, Yuan-Fang Li
HIGHLIGHT: In this paper, we introduce open-vocabulary scene graph generation, a novel, realistic and challenging setting, in which a model is trained on a small set of base object classes but is required to infer relations for unseen target object classes.

1147, TITLE: Variance-Aware Weight Initialization for Point Convolutional Neural Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6997_ECCV_2022_paper.php
AUTHORS: Pedro Hermosilla, Michael Schelling, Tobias Ritschel, Timo Ropinski
HIGHLIGHT: While well-founded weight initialization strategies can render batch normalization unnecessary and thus avoid these drawbacks, no such approaches have been proposed for point convolutional networks. To fill this gap, we propose a framework to unify the multitude of continuous convolutions.

1148, TITLE: Break and Make: Interactive Structural Understanding Using LEGO Bricks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7214_ECCV_2022_paper.php
AUTHORS: Aaron Walsman, Muru Zhang, Klemen Kotar, Karthik Desingh, Ali Farhadi, Dieter Fox
HIGHLIGHT: In order to advance research in interactive reasoning for part-based geometric understanding, we propose a challenging new assembly problem using LEGO bricks that we call Break and Make.

1149, TITLE: Bi-PointFlowNet: Bidirectional Learning for Point Cloud Based Scene Flow Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7215_ECCV_2022_paper.php
AUTHORS: Wencan Cheng, Jong Hwan Ko
HIGHLIGHT: This paper presents a novel scene flow estimation architecture using bidirectional flow embedding layers.

1150, TITLE: 3DG-STFM: 3D Geometric Guided Student-Teacher Feature Matching
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7283_ECCV_2022_paper.php
AUTHORS: Runyu Mao, Chen Bai, Yatong An, Fengqing Zhu, Cheng Lu
HIGHLIGHT: We tackle the essential task of finding dense visual correspondences between a pair of images.

1151, TITLE: Video Restoration Framework and Its Meta-Adaptations to Data-Poor Conditions
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7533_ECCV_2022_paper.php
AUTHORS: Prashant W Patil, Sunil Gupta, Santu Rana, Svetha Venkatesh
HIGHLIGHT: To this end, we propose a generic architecture that is effective for any weather condition due to the ability to extract robust feature maps without any domain-specific knowledge.

1152, TITLE: MonteBoxFinder: Detecting and Filtering Primitives to Fit a Noisy Point Cloud
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7803_ECCV_2022_paper.php
AUTHORS: Michaël Ramamonjisoa, Sinisa Stekovic, Vincent Lepetit
HIGHLIGHT: We present MonteBoxFinder, a method that, given an noisy input point cloud, detects a dense set of imperfect boxes, and employs a discrete optimization algorithm that efficiently explores the space of allbox arrangements in order to find the arrangement that best fits the pointcloud.

1153, TITLE: Scene Text Recognition with Permuted Autoregressive Sequence Models
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/556_ECCV_2022_paper.php
AUTHORS: Darwin Bautista, Rowel Atienza
HIGHLIGHT: Our method, PARSeq, learns an ensemble of internal AR LMs with shared weights using Permutation Language Modeling.

1154, TITLE: When Counting Meets HMER: Counting-Aware Network for Handwritten Mathematical Expression Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/685_ECCV_2022_paper.php
AUTHORS: Bohan Li, Ye Yuan, Dingkang Liang, Xiao Liu, Zhilong Ji, Jinfeng Bai, Wenyu Liu, Xiang Bai
HIGHLIGHT: However, such methods may fail to accurately read formulas with complicated structure or generate long markup sequences, as the attention results are often inaccurate due to the large variance of writing styles or spatial layouts. To

alleviate this problem, we propose an unconventional network for HMER named Counting-Aware Network (CAN), which jointly optimizes two tasks: HMER and symbol counting.

1155, TITLE: Detecting Tampered Scene Text in the Wild
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/696_ECCV_2022_paper.php
AUTHORS: Yuxin Wang, Hongtao Xie, Mengting Xing, Jing Wang, Shenggao Zhu, Yongdong Zhang
HIGHLIGHT: In this paper, we introduce a new task, named Tampered Scene Text Detection (TSTD), to localize text instances and recognize the texture authenticity in an end-to-end manner.

1156, TITLE: Optimal Boxes: Boosting End-to-End Scene Text Recognition by Adjusting Annotated Bounding Boxes via Reinforcement Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/897_ECCV_2022_paper.php
AUTHORS: Jingqun Tang, Wenming Qian, Luchuan Song, Xiena Dong, Lan Li, Xiang Bai
HIGHLIGHT: In this paper, we propose Box Adjuster, a reinforcement learning-based method for adjusting the shape of each text bounding box to make it more compatible with text recognition models.

1157, TITLE: GLASS: Global to Local Attention for Scene-Text Spotting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1384_ECCV_2022_paper.php
AUTHORS: Roi Ronen, Shahar Tsiper, Oron Anschel, Inbal Lavi, Amir Markovitz, R. Manmatha
HIGHLIGHT: Among the main challenges that end-to-end approaches face is the performance degradation when recognizing text across scale variations (smaller or larger text), and arbitrary word rotation angles. In this work, we address these challenges by proposing a novel global-to-local attention mechanism for text spotting, termed GLASS, that fuses together global and local features.

1158, TITLE: COO: Comic Onomatopoeia Dataset for Recognizing Arbitrary or Truncated Texts
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1946_ECCV_2022_paper.php
AUTHORS: Jeonghun Baek, Yusuke Matsui, Kiyoharu Aizawa
HIGHLIGHT: Thus, we propose a novel task that predicts the link between truncated texts.

1159, TITLE: Language Matters: A Weakly Supervised Vision-Language Pre-training Approach for Scene Text Detection and Spotting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1958_ECCV_2022_paper.php
AUTHORS: Chuhui Xue, Wenqing Zhang, Yu Hao, Shijian Lu, Philip H. S. Torr, Song Bai
HIGHLIGHT: This paper presents a weakly supervised pre-training method, oCLIP, which can acquire effective scene text representations by jointly learning and aligning visual and textual information.

1160, TITLE: Toward Understanding WordArt: Corner-Guided Transformer for Scene Text Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2688_ECCV_2022_paper.php
AUTHORS: Xudong Xie, Ling Fu, Zhifei Zhang, Zhaowen Wang, Xiang Bai
HIGHLIGHT: To alleviate these problems, we propose to recognize the artistic text at three levels.Besides, we provide an artistic text dataset to benchmark the performance.

1161, TITLE: Levenshtein OCR
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3820_ECCV_2022_paper.php
AUTHORS: Cheng Da, Peng Wang, Cong Yao
HIGHLIGHT: Specifically, we cast the problem of scene text recognition as an iterative sequence refinement process.

1162, TITLE: Multi-Granularity Prediction for Scene Text Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3821_ECCV_2022_paper.php
AUTHORS: Peng Wang, Cheng Da, Cong Yao
HIGHLIGHT: In this work, we first draw inspiration from the recent progress in Vision Transformer (ViT) to construct a conceptually simple yet powerful vision STR model, which is built upon ViT and outperforms previous state-of-the-art models for scene text recognition, including both pure vision models and language-augmented methods.

1163, TITLE: Dynamic Low-Resolution Distillation for Cost-Efficient End-to-End Text Spotting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4305_ECCV_2022_paper.php
AUTHORS: Ying Chen, Liang Qiao, Zhanzhan Cheng, Shiliang Pu, Yi Niu, Xi Li
HIGHLIGHT: However, the input scale has always been a tough trade-off since recognizing a small text instance usually requires enlarging the whole image, which brings high computational costs. In this paper, to address this problem, we propose a novel cost-efficient Dynamic Low-resolution Distillation (DLD) text spotting framework, which aims to infer images in different small but recognizable resolutions and achieve a better balance between accuracy and efficiency.

1164, TITLE: Contextual Text Block Detection towards Scene Text Understanding
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4422_ECCV_2022_paper.php
AUTHORS: Chuhui Xue, Jiaxing Huang, Wenqing Zhang, Shijian Lu, Changhu Wang, Song Bai
HIGHLIGHT: This paper presents contextual text detection, a new setup that detects CTBs for better understanding of texts in scenes.

1165, TITLE: CoMER: Modeling Coverage for Transformer-Based Handwritten Mathematical Expression Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5048_ECCV_2022_paper.php
AUTHORS: Wenqi Zhao, Liangcai Gao

HIGHLIGHT:	In this paper, we propose CoMER, a model that adopts the coverage information in the transformer decoder.

1166, TITLE:	Don't Forget Me: Accurate Background Recovery for Text Removal via Modeling Local-Global Context
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5051_ECCV_2022_paper.php
AUTHORS:	Chongyu Liu, Lianwen Jin, Yuliang Liu, Canjie Luo, Bangdong Chen, Fengjun Guo, Kai Ding
HIGHLIGHT:	However, most of the existing methods often generate inconsistent results for complex background. To address this issue, we propose a Contextual-guided Text Removal Network, termed as CTRNet.

1167, TITLE:	TextAdaIN: Paying Attention to Shortcut Learning in Text Recognizers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5536_ECCV_2022_paper.php
AUTHORS:	Oren Nuriel, Sharon Fogel, Ron Litman
HIGHLIGHT:	In text recognition, we reveal another such shortcut, whereby recognizers overly depend on local image statistics. Motivated by this, we suggest an approach to regulate the reliance on local statistics that improves text recognition performance.

1168, TITLE:	Multi-modal Text Recognition Networks: Interactive Enhancements between Visual and Semantic Features
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6583_ECCV_2022_paper.php
AUTHORS:	Byeonghu Na, Yoonsik Kim, Sungrae Park
HIGHLIGHT:	This paper introduces a novel method, called Multi-modAl Text Recognition Network (MATRN), that enables interactions between visual and semantic features for better recognition performances.

1169, TITLE:	SGBANet: Semantic GAN and Balanced Attention Network for Arbitrarily Oriented Scene Text Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6837_ECCV_2022_paper.php
AUTHORS:	Dajian Zhong, Shujing Lyu, Palaiahnakote Shivakumara, Bing Yin, Jiajia Wu, Umapada Pal, Yue Lu
HIGHLIGHT:	In this paper, we propose a novel Semantic GAN and Balanced Attention Network (SGBANet) to recognize the texts in scene images.

1170, TITLE:	Pure Transformer with Integrated Experts for Scene Text Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7288_ECCV_2022_paper.php
AUTHORS:	Yew Lee Tan, Adams Wai-Kin Kong, Jung-Jae Kim
HIGHLIGHT:	This work proposes the use of a transformer-only model as a simple baseline which outperforms hybrid CNN-transformer models.

1171, TITLE:	OCR-Free Document Understanding Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/8042_ECCV_2022_paper.php
AUTHORS:	Geewook Kim, Teakgyu Hong, Moonbin Yim, JeongYeon Nam, Jinyoung Park, Jinyeong Yim, Wonseok Hwang, Sangdoo Yun, Dongyoon Han, Seunghyun Park
HIGHLIGHT:	Although such OCR-based approaches have shown promising performance, they suffer from 1) high computational costs for using OCR 2) inflexibility of OCR models on languages or types of documents 3) OCR error propagation to the subsequent process. To address these issues, in this paper, we introduce a novel OCR-free VDU model named Donut, which stands for Document understanding transformer.

1172, TITLE:	CAR: Class-Aware Regularizations for Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/83_ECCV_2022_paper.php
AUTHORS:	Ye Huang, Di Kang, Liang Chen, Xuefei Zhe, Wenjing Jia, Linchao Bao, Xiangjian He
HIGHLIGHT:	In this paper, aiming to use class level information more effectively, we propose a universal Class-Aware Regularization (CAR) approach to optimize the intra-class variance and inter-class distance during feature learning, motivated by the fact that humans can recognize an object by itself no matter which other objects it appears with.

1173, TITLE:	Style-Hallucinated Dual Consistency Learning for Domain Generalized Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/86_ECCV_2022_paper.php
AUTHORS:	Yuyang Zhao, Zhun Zhong, Na Zhao, Nicu Sebe, Gim Hee Lee
HIGHLIGHT:	In this paper, we study the task of synthetic-to-real domain generalized semantic segmentation, which aims to learn a model that is robust to unseen real-world scenes using only synthetic data.

1174, TITLE:	SeqFormer: Sequential Transformer for Video Instance Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/125_ECCV_2022_paper.php
AUTHORS:	Junfeng Wu, Yi Jiang, Song Bai, Wenqing Zhang, Xiang Bai
HIGHLIGHT:	In this work, we present SeqFormer for video instance segmentation.

1175, TITLE:	Saliency Hierarchy Modeling via Generative Kernels for Salient Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/145_ECCV_2022_paper.php
AUTHORS:	Wenhu Zhang, Liangli Zheng, Huanyu Wang, Xintian Wu, Xi Li
HIGHLIGHT:	To alleviate the problem, we propose a Saliency Hierarchy Network (SHNet), modeling saliency patterns via generative kernels from two perspectives: region-level and sample-level.

1176, TITLE:	In Defense of Online Models for Video Instance Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/168_ECCV_2022_paper.php
AUTHORS:	Junfeng Wu, Qihao Liu, Yi Jiang, Song Bai, Alan Yuille, Xiang Bai

HIGHLIGHT: By dissecting current online models and offline models, we demonstrate that the main cause of the performance gap is the error-prone association between frames caused by the similar appearance among different instances in the feature space. Observing this, we propose an online framework based on contrastive learning that is able to learn more discriminative instance embeddings for association and fully exploit history information for stability.

1177, TITLE: Active Pointly-Supervised Instance Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/300_ECCV_2022_paper.php
AUTHORS: Chufeng Tang, Lingxi Xie, Gang Zhang, Xiaopeng Zhang, Qi Tian, Xiaolin Hu
HIGHLIGHT: In this paper, we present an economic active learning setting, named active pointly-supervised instance segmentation (APIS), which starts with box-level annotations and iteratively samples a point within the box and asks if it falls on the object.

1178, TITLE: A Transformer-Based Decoder for Semantic Segmentation with Multi-level Context Mining
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/383_ECCV_2022_paper.php
AUTHORS: Bowen Shi, Dongsheng Jiang, Xiaopeng Zhang, Han Li, Wenrui Dai, Junni Zou, Hongkai Xiong, Qi Tian
HIGHLIGHT: In this paper, we find that a light weighted decoder counts for segmentation, and propose a pure transformer-based segmentation decoder, named SegDeformer, to seamlessly incorporate into current varied transformer-based encoders.

1179, TITLE: XMem: Long-Term Video Object Segmentation with an Atkinson-Shiffrin Memory Model
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/568_ECCV_2022_paper.php
AUTHORS: Ho Kei Cheng, Alexander G. Schwing
HIGHLIGHT: We present XMem, a video object segmentation architecture for long videos with unified feature memory stores inspired by the Atkinson-Shiffrin memory model.

1180, TITLE: Self-Distillation for Robust LiDAR Semantic Segmentation in Autonomous Driving
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/652_ECCV_2022_paper.php
AUTHORS: Jiale Li, Hang Dai, Yong Ding
HIGHLIGHT: We propose a new and effective self-distillation framework with our new Test-Time Augmentation (TTA) and Transformer based Voxel Feature Encoder (TransVFE) for robust LiDAR semantic segmentation in autonomous driving, where the robustness is mission-critical but usually neglected.

1181, TITLE: 2DPASS: 2D Priors Assisted Semantic Segmentation on LiDAR Point Clouds
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/755_ECCV_2022_paper.php
AUTHORS: Xu Yan, Jiantao Gao, Chaoda Zheng, Chao Zheng, Ruimao Zhang, Shuguang Cui, Zhen Li
HIGHLIGHT: Thus, in this work, we propose the 2D Priors Assisted Semantic Segmentation (2DPASS), a general training scheme, to boost the representation learning on point clouds, by fully taking advantage of 2D images with rich appearance.

1182, TITLE: Extract Free Dense Labels from CLIP
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/910_ECCV_2022_paper.php
AUTHORS: Chong Zhou, Chen Change Loy, Bo Dai
HIGHLIGHT: In this paper, we wish examine the intrinsic potential of CLIP for pixel-level dense prediction, specifically in semantic segmentation.

1183, TITLE: 3D Compositional Zero-Shot Learning with DeCompositional Consensus
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/933_ECCV_2022_paper.php
AUTHORS: Muhammad Ferjad Naeem, Evin P?nar &Ouml,rnek, Yongqin Xian, Luc Van Gool, Federico Tombari
HIGHLIGHT: As a solution, we propose DeCompositional Consensus, which combines a part segmentation network with a part scoring network.

1184, TITLE: Video Mask Transfiner for High-Quality Video Instance Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/939_ECCV_2022_paper.php
AUTHORS: Lei Ke, Henghui Ding, Martin Danelljan, Yu-Wing Tai, Chi-Keung Tang, Fisher Yu
HIGHLIGHT: In this paper, we set out to tackle these issues, with the aim of achieving highly detailed and more temporally stable mask predictions for VIS.

1185, TITLE: Box-Supervised Instance Segmentation with Level Set Evolution
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1182_ECCV_2022_paper.php
AUTHORS: Wentong Li, Wenyu Liu, Jianke Zhu, Miaomiao Cui, Xian-Sheng Hua, Lei Zhang
HIGHLIGHT: In this paper, we propose a novel single-shot box-supervised instance segmentation approach, which integrates the classical level set model with deep neural network delicately.

1186, TITLE: Point Primitive Transformer for Long-Term 4D Point Cloud Video Understanding
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1394_ECCV_2022_paper.php
AUTHORS: Hao Wen, Yunze Liu, Jingwei Huang, Bo Duan, Li Yi
HIGHLIGHT: This paper proposes a 4D backbone for long-term point cloud video understanding.

1187, TITLE: Adaptive Agent Transformer for Few-Shot Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1397_ECCV_2022_paper.php
AUTHORS: Yuan Wang, Rui Sun, Zhe Zhang, Tianzhu Zhang

HIGHLIGHT: In this work, we propose a novel end-to-end adaptive agent transformer (AAFormer) to integrate prototypical and affinity learning to exploit the complementarity between them via a transformer encoder-decoder architecture, including a representation encoder, an agent learning decoder and an agent matching decoder.

1188, TITLE: Waymo Open Dataset: Panoramic Video Panoptic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1525_ECCV_2022_paper.php
AUTHORS: Jieru Mei, Alex Zihao Zhu, Xinchen Yan, Hang Yan, Siyuan Qiao, Yukun Zhu, Liang-Chieh Chen, Henrik Kretzschmar
HIGHLIGHT: We therefore present the Waymo Open Dataset: Panoramic Video Panoptic Segmentation dataset, a large-scale dataset that offers high-quality panoptic segmentation labels for autonomous driving.

1189, TITLE: TransFGU: A Top-down Approach to Fine-Grained Unsupervised Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1588_ECCV_2022_paper.php
AUTHORS: Zhaoyuan Yin, Pichao Wang, Fan Wang, Xianzhe Xu, Hanling Zhang, Hao Li, Rong Jin
HIGHLIGHT: In contrast, we propose the first top-down unsupervised semantic segmentation framework for fine-grained segmentation in extremely complicated scenarios.

1190, TITLE: AdaAfford: Learning to Adapt Manipulation Affordance for 3D Articulated Objects via Few-Shot Interactions
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1730_ECCV_2022_paper.php
AUTHORS: Yian Wang, Ruihai Wu, Kaichun Mo, Jiaqi Ke, Qingnan Fan, Leonidas J. Guibas, Hao Dong
HIGHLIGHT: In this paper, we propose a novel framework, named AdaAfford, that learns to perform very few test-time interactions for quickly adapting the affordance priors to more accurate instance-specific posteriors.We will release our code and data upon paper acceptance.

1191, TITLE: Cost Aggregation with 4D Convolutional Swin Transformer for Few-Shot Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1987_ECCV_2022_paper.php
AUTHORS: Sunghwan Hong, Seokju Cho, Jisu Nam, Stephen Lin, Seungryong Kim
HIGHLIGHT: We present a novel cost aggregation network, called Volumetric Aggregation with Transformers (VAT), for few-shot segmentation.

1192, TITLE: Fine-Grained Egocentric Hand-Object Segmentation: Dataset, Model, and Applications
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2152_ECCV_2022_paper.php
AUTHORS: Lingzhi Zhang, Shenghao Zhou, Simon Stent, Jianbo Shi
HIGHLIGHT: We introduce a context-aware compositional data augmentation technique to adapt to out-of-the-distribution YouTube egocentric video.

1193, TITLE: Perceptual Artifacts Localization for Inpainting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2153_ECCV_2022_paper.php
AUTHORS: Lingzhi Zhang, Yuqian Zhou, Connelly Barnes, Sohrab Amirghodsi, Zhe Lin, Eli Shechtman, Jianbo Shi
HIGHLIGHT: Inspired by this workflow, we propose a new learning task of automatic segmentation of inpainting perceptual artifacts, and apply the model for inpainting model evaluation and iterative refinement.

1194, TITLE: 2D Amodal Instance Segmentation Guided by 3D Shape Prior
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2272_ECCV_2022_paper.php
AUTHORS: Zhixuan Li, Weining Ye, Tingting Jiang, Tiejun Huang
HIGHLIGHT: This paper builds a bridge to link the 2D occluded instances with the 3D complete models by 3D reconstruction and utilizes 3D shape prior for 2D AIS.

1195, TITLE: Data Efficient 3D Learner via Knowledge Transferred from 2D Model
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2312_ECCV_2022_paper.php
AUTHORS: Ping-Chung Yu, Cheng Sun, Min Sun
HIGHLIGHT: In this work, we deal with the data scarcity challenge of 3D tasks by transferring knowledge from strong 2D models via abundant RGB-D images.

1196, TITLE: Adaptive Spatial-BCE Loss for Weakly Supervised Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2406_ECCV_2022_paper.php
AUTHORS: Tong Wu, Guangyu Gao, Junshi Huang, Xiaolin Wei, Xiaoming Wei, Chi Harold Liu
HIGHLIGHT: In this paper, we propose an adaptive Spatial Binary Cross-Entropy (Spatial-BCE) Loss for WSSS, which aims to enhance the discrimination between pixels.

1197, TITLE: Dense Gaussian Processes for Few-Shot Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2501_ECCV_2022_paper.php
AUTHORS: Joakim Johnander, Johan Edstedt, Michael Felsberg, Fahad Shahbaz Khan, Martin Danelljan
HIGHLIGHT: To this end, we propose a few-shot segmentation method based on dense Gaussian process (GP) regression.

1198, TITLE: 3D Instances as 1D Kernels
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2621_ECCV_2022_paper.php
AUTHORS: Yizheng Wu, Min Shi, Shuaiyuan Du, Hao Lu, Zhiguo Cao, Weicai Zhong
HIGHLIGHT: We introduce a 3D instance representation, termed instance kernels, where instances are represented by one-dimensional vectors that encode the semantic, positional, and shape information of 3D instances.

1199, TITLE:        TransMatting: Enhancing Transparent Objects Matting with Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2806_ECCV_2022_paper.php
AUTHORS:        Huanqia Cai, Fanglei Xue, Lele Xu, Lili Guo
HIGHLIGHT:        In this paper, we propose a Transformer-based network, TransMatting, to model transparent objects with a big receptive field.

1200, TITLE:        MVSalNet:Multi-View Augmentation for RGB-D Salient Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3293_ECCV_2022_paper.php
AUTHORS:        Jiayuan Zhou, Lijun Wang, Huchuan Lu, Kaining Huang, Xinchu Shi, Bocong Liu
HIGHLIGHT:        However, the geometry information conveyed by depth maps are mostly under-explored in existing RGB-D SOD methods. In this paper, we propose a new framework to address this issue.

1201, TITLE:        $k$-Means Mask Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3300_ECCV_2022_paper.php
AUTHORS:        Qihang Yu, Huiyu Wang, Siyuan Qiao, Maxwell Collins, Yukun Zhu, Hartwig Adam, Alan Yuille, Liang-Chieh Chen
HIGHLIGHT:        In this paper, we rethink the relationship between pixels and object queries and propose to reformulate the cross-attention learning as a clustering process.

1202, TITLE:        SegPGD: An Effective and Efficient Adversarial Attack for Evaluating and Boosting Segmentation Robustness
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3390_ECCV_2022_paper.php
AUTHORS:        Jindong Gu, Hengshuang Zhao, Volker Tresp, Philip H. S. Torr
HIGHLIGHT:        In this work, we propose an effective and efficient segmentation attack method, dubbed SegPGD.

1203, TITLE:        Adversarial Erasing Framework via Triplet with Gated Pyramid Pooling Layer for Weakly Supervised Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3391_ECCV_2022_paper.php
AUTHORS:        Sung-Hoon Yoon, Hyeokjun Kweon, Jegyeong Cho, Shinjeong Kim, Kuk-Jin Yoon
HIGHLIGHT:        To resolve the problems, we propose a Gated Pyramid Pooling (GPP) layer which is a substitute for a Global Average Pooling (GAP) layer, and an Adversarial Erasing Framework via Triplet (AEFT).

1204, TITLE:        Continual Semantic Segmentation via Structure Preserving and Projected Feature Alignment
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3489_ECCV_2022_paper.php
AUTHORS:        Zihan Lin, Zilei Wang, Yixin Zhang
HIGHLIGHT:        Deep networks have been shown to suffer from catastrophic forgetting. In this work, we try to alleviate this phenomenon in the field of continual semantic segmentation (CSS).

1205, TITLE:        Interclass Prototype Relation for Few-Shot Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3520_ECCV_2022_paper.php
AUTHORS:        Atsuro Okazawa
HIGHLIGHT:        This study proposes the Interclass Prototype Relation Network (IPRNet), which improves the separation performance by reducing the similarity between other classes.

1206, TITLE:        Slim Scissors: Segmenting Thin Object from Synthetic Background
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3581_ECCV_2022_paper.php
AUTHORS:        Kunyang Han, Jun Hao Liew, Jiashi Feng, Huawei Tian, Yao Zhao, Yunchao Wei
HIGHLIGHT:        Our core idea is to segment thin parts by learning to compare the original image to a synthesized background without thin structures.

1207, TITLE:        Abstracting Sketches through Simple Primitives
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3721_ECCV_2022_paper.php
AUTHORS:        Stephan Alaniz, Massimiliano Mancini, Anjan Dutta, Diego Marcos, Zeynep Akata
HIGHLIGHT:        Toward equipping machines with such capabilities, we propose the Primitive-based Sketch Abstraction task where the goal is to represent sketches using a fixed set of drawing primitives under the influence of a budget.

1208, TITLE:        Multi-Scale and Cross-Scale Contrastive Learning for Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4181_ECCV_2022_paper.php
AUTHORS:        Theodoros Pissas, Claudio S. Ravasio, Lyndon Da Cruz, Christos Bergeles
HIGHLIGHT:        Our key methodological insight is to leverage samples from the feature spaces emanating from multiple stages of a model's encoder itself requiring neither data augmentation nor online memory banks to obtain a diverse set of samples.

1209, TITLE:        One-Trimap Video Matting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4318_ECCV_2022_paper.php
AUTHORS:        Hongje Seong, Seoung Wug Oh, Brian Price, Euntai Kim, Joon-Young Lee
HIGHLIGHT:        Recent studies made great progress in video matting by extending the success of trimap-based image matting to the video domain. In this paper, we push this task toward a more practical setting and propose One-Trimap Video Matting network (OTVM) that performs video matting robustly using only one user-annotated trimap.

1210, TITLE:        D2ADA: Dynamic Density-Aware Active Domain Adaptation for Semantic Segmentation

http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4566_ECCV_2022_paper.php
AUTHORS:             Tsung-Han Wu, Yi-Syuan Liou, Shao-Ji Yuan, Hsin-Ying Lee, Tung-I Chen, Kuan-Chih Huang, Winston H. Hsu
HIGHLIGHT:             In this work, we present D2ADA, a general active domain adaptation framework for semantic segmentation.

1211, TITLE:             Learning Quality-Aware Dynamic Memory for Video Object Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4636_ECCV_2022_paper.php
AUTHORS:             Yong Liu, Ran Yu, Fei Yin, Xinyuan Zhao, Wei Zhao, Weihao Xia, Yujiu Yang
HIGHLIGHT:             To this end, we propose a Quality-aware Dynamic Memory Network (QDMN) to evaluate the segmentation quality of each frame, allowing the memory bank to selectively store accurately segmented frames to prevent the error accumulation problem.

1212, TITLE:             Learning Implicit Feature Alignment Function for Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4675_ECCV_2022_paper.php
AUTHORS:             Hanzhe Hu, Yinbo Chen, Jiarui Xu, Shubhankar Borse, Hong Cai, Fatih Porikli, Xiaolong Wang
HIGHLIGHT:             However, bilinear up-sampling blurs the precise information learned in these feature maps and convolutions incur extra computation costs. To address these issues, we propose the Implicit Feature Alignment function (IFA).

1213, TITLE:             Quantum Motion Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4874_ECCV_2022_paper.php
AUTHORS:             Federica Arrigoni, Willi Menapace, Marcel Seelbach Benkner, Elisa Ricci, Vladislav Golyanik
HIGHLIGHT:             This paper introduces the first algorithm for motion segmentation that relies on adiabatic quantum optimization of the objective function.

1214, TITLE:             Instance As Identity: A Generic Online Paradigm for Video Instance Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5032_ECCV_2022_paper.php
AUTHORS:             Feng Zhu, Zongxin Yang, Xin Yu, Yi Yang, Yunchao Wei
HIGHLIGHT:             In this work, we propose a new online VIS paradigm named Instance As Identity (IAI), which models temporal information for both detection and tracking in an efficient way.

1215, TITLE:             Laplacian Mesh Transformer: Dual Attention and Topology Aware Network for 3D Mesh Classification and Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5047_ECCV_2022_paper.php
AUTHORS:             Xiao-Juan Li, Jie Yang, Fang-Lue Zhang
HIGHLIGHT:             Despite the great progress that has been made, the existing approaches fail to efficiently capture sophisticated structure information and critical part features simultaneously, limiting their capability of providing discriminative deep shape features. To address the above issue, we proposed a novel deep learning framework, Laplacian Mesh Transformer, to extract the critical structure and geometry features.

1216, TITLE:             Geodesic-Former: A Geodesic-Guided Few-Shot 3D Point Cloud Instance Segmenter
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5123_ECCV_2022_paper.php
AUTHORS:             Tuan Ngo, Khoi Nguyen
HIGHLIGHT:             This paper introduces a new problem in 3D point cloud: few-shot instance segmentation.

1217, TITLE:             Union-Set Multi-source Model Adaptation for Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5436_ECCV_2022_paper.php
AUTHORS:             Zongyao Li, Ren Togo, Takahiro Ogawa, Miki Haseyama
HIGHLIGHT:             For the new setting named union-set multi-source model adaptation, we propose a method with a novel learning strategy named model-invariant feature learning, which takes full advantage of the diverse characteristics of the source-domain models, thereby improving the generalization in the target domain.

1218, TITLE:             Point MixSwap: Attentional Point Cloud Mixing via Swapping Matched Structural Divisions
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5484_ECCV_2022_paper.php
AUTHORS:             Ardian Umam, Cheng-Kun Yang, Yung-Yu Chuang, Jen-Hui Chuang, Yen-Yu Lin
HIGHLIGHT:             This paper presents a 3D augmentation method that explores the structural variance across multiple point clouds, and generates more diverse point clouds to enrich the training set.

1219, TITLE:             BATMAN: Bilateral Attention Transformer in Motion-Appearance Neighboring Space for Video Object Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5512_ECCV_2022_paper.php
AUTHORS:             Ye Yu, Jialin Yuan, Gaurav Mittal, Li Fuxin, Mei Chen
HIGHLIGHT:             In this paper, we propose a novel Bilateral Attention Transformer in Motion-Appearance Neighboring space (BATMAN) for semi-supervised VOS.

1220, TITLE:             SPSN: Superpixel Prototype Sampling Network for RGB-D Salient Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5940_ECCV_2022_paper.php
AUTHORS:             Minhyeok Lee, Chaewon Park, Suhwan Cho, Sangyoun Lee
HIGHLIGHT:             However, despite advances in deep learning-based methods, RGB-D SOD is still challenging due to the large domain gap between an RGB image and the depth map and low-quality depth maps. To solve this problem, we propose a novel superpixel prototype sampling network (SPSN) architecture.

1221, TITLE: Global Spectral Filter Memory Network for Video Object Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5961_ECCV_2022_paper.php
AUTHORS: Yong Liu, Ran Yu, Jiahao Wang, Xinyuan Zhao, Yitong Wang, Yansong Tang, Yujiu Yang
HIGHLIGHT: To this end, we propose Global Spectral Filter Memory network (GSFM), which improves intra-frame interaction through learning long-term spatial dependencies in the spectral domain.

1222, TITLE: Video Instance Segmentation via Multi-Scale Spatio-Temporal Split Attention Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6039_ECCV_2022_paper.php
AUTHORS: Omkar Thawakar, Sanath Narayan, Jiale Cao, Hisham Cholakkal, Rao Muhammad Anwer, Muhammad Haris Khan, Salman Khan, Michael Felsberg, Fahad Shahbaz Khan
HIGHLIGHT: We argue that such an attention computation ignores the multi-scale spatio-temporal feature relationships that are crucial to tackle target appearance deformations in videos. To address this issue, we propose a transformer-based VIS framework, named MS-STS VIS, that comprises a novel multi-scale spatio-temporal split (MS-STS) attention module in the encoder.

1223, TITLE: RankSeg: Adaptive Pixel Classification with Image Category Ranking for Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6044_ECCV_2022_paper.php
AUTHORS: Haodi He, Yuhui Yuan, Xiangyu Yue, Han Hu
HIGHLIGHT: On the other hand, in a typical image or video, only a few categories, i.e., a small subset of the complete label are present. Motivated by this intuition, in this paper, we propose to decompose segmentation into two sub-problems: (i) image-level or video-level multi-label classification and (ii) pixel-level rank-adaptive selected-label classification.

1224, TITLE: Learning Topological Interactions for Multi-Class Medical Image Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6180_ECCV_2022_paper.php
AUTHORS: Saumya Gupta, Xiaoling Hu, James Kaan, Michael Jin, Mutshipay Mpoy, Katherine Chung, Gagandeep Singh, Mary Saltz, Tahsin Kurc, Joel Saltz, Apostolos Tassiopoulos, Prateek Prasanna, Chao Chen
HIGHLIGHT: In this paper, we introduce a novel topological interaction module to encode the topological interactions into a deep neural network.

1225, TITLE: Unsupervised Segmentation in Real-World Images via Spelke Object Inference
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6193_ECCV_2022_paper.php
AUTHORS: Honglin Chen, Rahul Venkatesh, Yoni Friedman, Jiajun Wu, Joshua B. Tenenbaum, Daniel L. K. Yamins, Daniel M. Bear
HIGHLIGHT: We introduce the Excitatory-Inhibitory Segment Extraction Network (EISEN), which learns to extract pairwise affinity graphs for static scenes from motion-based training signals.

1226, TITLE: A Simple Baseline for Open-Vocabulary Semantic Segmentation with Pre-trained Vision-Language Model
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6275_ECCV_2022_paper.php
AUTHORS: Mengde Xu, Zheng Zhang, Fangyun Wei, Yutong Lin, Yue Cao, Han Hu, Xiang Bai
HIGHLIGHT: This paper targets open-vocabulary semantic segmentation by building it on an off-the-shelf pre-trained vision-language model, i.e., CLIP.

1227, TITLE: Fast Two-View Motion Segmentation Using Christoffel Polynomials
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6619_ECCV_2022_paper.php
AUTHORS: Bengisu Ozbay, Octavia Camps, Mario Sznaier
HIGHLIGHT: In this paper we propose a fast segmentation algorithm that scales linearly with the number of correspondences and show that on benchmark datasets it offers the best trade-off between error and computational time: it is at least one order of magnitude faster than the best method (with comparable or better accuracy), with the ratio growing up to three orders of magnitude for larger number of correspondences.

1228, TITLE: UCTNet: Uncertainty-Aware Cross-Modal Transformer Network for Indoor RGB-D Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7082_ECCV_2022_paper.php
AUTHORS: Xiaowen Ying, Mooi Choo Chuah
HIGHLIGHT: In this paper, we tackle the problem of RGB-D Semantic Segmentation.

1229, TITLE: Bi-directional Contrastive Learning for Domain Adaptive Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7238_ECCV_2022_paper.php
AUTHORS: Geon Lee, Chanho Eom, Wonkyung Lee, Hyekang Park, Bumsub Ham
HIGHLIGHT: We present a novel unsupervised domain adaptation method for semantic segmentation that generalizes a model trained with source images and corresponding ground-truth labels to a target domain.

1230, TITLE: Learning Regional Purity for Instance Segmentation on 3D Point Clouds
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7337_ECCV_2022_paper.php
AUTHORS: Shichao Dong, Guosheng Lin, Tzu-Yi Hung
HIGHLIGHT: In this paper, we define a novel concept of "regional purity as the percentage of neighboring points belonging to the same instance within a fixed-radius 3D space.

1231, TITLE: Cross-Domain Few-Shot Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7449_ECCV_2022_paper.php
AUTHORS: Shuo Lei, Xuchao Zhang, Jianfeng He, Fanglan Chen, Bowen Du, Chang-Tien Lu

HIGHLIGHT: In this paper, we extend few-shot semantic segmentation to a new task, called Cross-Domain Few-Shot Semantic Segmentation (CD-FSS), which aims to generalize the meta-knowledge from domains with sufficient training labels to low-resource domains.

1232, TITLE: Generative Subgraph Contrast for Self-Supervised Graph Representation Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/265_ECCV_2022_paper.php
AUTHORS: Yuehui Han, Le Hui, Haobo Jiang, Jianjun Qian, Jin Xie
HIGHLIGHT: To this end, in this paper, we propose a novel adaptive subgraph generation based contrastive learning framework for efficient and robust self-supervised graph representation learning, and the optimal transport distance is utilized as the similarity metric between the subgraphs.

1233, TITLE: SdAE: Self-Distilled Masked Autoencoder
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/379_ECCV_2022_paper.php
AUTHORS: Yabo Chen, Yuchen Liu, Dongsheng Jiang, Xiaopeng Zhang, Wenrui Dai, Hongkai Xiong, Qi Tian
HIGHLIGHT: MAE does not require a pre-training codebook process, but setting pixels as reconstruction targets may introduce an optimization gap between pre-training and downstream tasks that good reconstruction quality may not always lead to the high descriptive capability for the model. Considering the above issues, in this paper, we propose a simple Self-distilled masked AutoEncoder network, namely SdAE.

1234, TITLE: Demystifying Unsupervised Semantic Correspondence Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/499_ECCV_2022_paper.php
AUTHORS: Mehmet Aygün, Oisin Mac Aodha
HIGHLIGHT: We thoroughly evaluate several recently proposed unsupervised methods across multiple challenging datasets using a standardized evaluation protocol where we vary factors such as the backbone architecture, the pre-training strategy, and the pre-training and finetuning datasets. To better understand the failure modes of these methods, and in order to provide a clearer path for improvement, we provide a new diagnostic framework along with a new performance metric that is better suited to the semantic matching task.

1235, TITLE: Open-Set Semi-Supervised Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/617_ECCV_2022_paper.php
AUTHORS: Yen-Cheng Liu, Chih-Yao Ma, Xiaoliang Dai, Junjiao Tian, Peter Vajda, Zijian He, Zsolt Kira
HIGHLIGHT: In this paper, we consider a more practical yet challenging problem, Open-Set Semi-Supervised Object Detection (OSSOD).

1236, TITLE: Vibration-Based Uncertainty Estimation for Learning from Limited Supervision
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/822_ECCV_2022_paper.php
AUTHORS: Hengtong Hu, Lingxi Xie, Xinyue Huo, Richang Hong, Qi Tian
HIGHLIGHT: In this paper, we present a novel approach that measures uncertainty from the vibration of sequential data, e.g., the output probability during the training procedure.

1237, TITLE: Concurrent Subsidiary Supervision for Unsupervised Source-Free Domain Adaptation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/912_ECCV_2022_paper.php
AUTHORS: Jogendra Nath Kundu, Suvaansh Bhambri, Akshay Kulkarni, Hiran Sarkar, Varun Jampani, R. Venkatesh Babu
HIGHLIGHT: Thus, we theoretically analyze how and when a subsidiary pretext task could be leveraged to assist the goal task of a given DA problem and develop objective subsidiary task suitability criteria. Based on this criteria, we devise a novel process of sticker intervention and cast sticker classification as a supervised subsidiary DA problem concurrent to the goal task unsupervised DA.

1238, TITLE: Weakly Supervised Object Localization through Inter-class Feature Similarity and Intra-Class Appearance Consistency
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1002_ECCV_2022_paper.php
AUTHORS: Jun Wei, Sheng Wang, S. Kevin Zhou, Shuguang Cui, Zhen Li
HIGHLIGHT: In this paper, we propose a simple but effective WSOL model (named ISIC) through Inter-class feature Similarity and Intra-class appearance Consistency.

1239, TITLE: Active Learning Strategies for Weakly-Supervised Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1044_ECCV_2022_paper.php
AUTHORS: Huy V. Vo, Oriane Siméoni, Spyros Gidaris, Andrei Bursuc, Patrick Pérez, Jean Ponce
HIGHLIGHT: However, there is still a significant performance gap between them. We propose to narrow this gap by fine-tuning a base pre-trained weakly-supervised detector with a few fully-annotated samples automatically selected from the training set using "box-in-box" (BiB), a novel active learning strategy designed specifically to address the well-documented failure modes of weakly-supervised detectors.

1240, TITLE: Mc-BEiT: Multi-Choice Discretization for Image BERT Pre-training
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1197_ECCV_2022_paper.php
AUTHORS: Xiaotong Li, Yixiao Ge, Kun Yi, Zixuan Hu, Ying Shan, Ling-Yu Duan
HIGHLIGHT: In this work, we introduce an improved BERT-style image pre-training method, namely mc-BEiT, which performs MIM proxy tasks towards eased and refined multi-choice training objectives.

1241, TITLE: Bootstrapped Masked Autoencoders for Vision BERT Pretraining
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1203_ECCV_2022_paper.php

AUTHORS: Xiaoyi Dong, Jianmin Bao, Ting Zhang, Dongdong Chen, Weiming Zhang, Lu Yuan, Dong Chen, Fang Wen, Nenghai Yu
HIGHLIGHT: We propose bootstrapped masked autoencoders (BootMAE), a new approach for vision BERT pretraining.

1242, TITLE: Unsupervised Visual Representation Learning by Synchronous Momentum Grouping
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1316_ECCV_2022_paper.php
AUTHORS: Bo Pang, Yifan Zhang, Yaoyi Li, Jia Cai, Cewu Lu
HIGHLIGHT: In this paper, we propose a genuine group-level contrastive visual representation learning method whose linear evaluation performance on ImageNet surpasses the vanilla supervised learning.

1243, TITLE: Improving Few-Shot Part Segmentation Using Coarse Supervision
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1408_ECCV_2022_paper.php
AUTHORS: Oindrila Saha, Zezhou Cheng, Subhransu Maji
HIGHLIGHT: We propose a framework to exploit coarse labels such as figure-ground masks and keypoint locations that are readily available for some categories to improve part segmentation models.

1244, TITLE: What to Hide from Your Students: Attention-Guided Masked Image Modeling
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1439_ECCV_2022_paper.php
AUTHORS: Ioannis Kakogeorgiou, Spyros Gidaris, Bill Psomas, Yannis Avrithis, Andrei Bursuc, Konstantinos Karantzalos, Nikos Komodakis
HIGHLIGHT: In this work, we argue that image token masking differs from token masking in text, due to the amount and correlation of tokens in an image.

1245, TITLE: Pointly-Supervised Panoptic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1637_ECCV_2022_paper.php
AUTHORS: Junsong Fan, Zhaoxiang Zhang, Tieniu Tan
HIGHLIGHT: In this paper, we propose a new approach to applying point-level annotations for weakly-supervised panoptic segmentation.

1246, TITLE: MVP: Multimodality-Guided Visual Pre-training
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1648_ECCV_2022_paper.php
AUTHORS: Longhui Wei, Lingxi Xie, Wengang Zhou, Houqiang Li, Qi Tian
HIGHLIGHT: In the context of vision transformers, MIM learns effective visual representation by aligning the token-level features with a pre-defined space (e,g,, BEIT used a d-VAE trained on a large image corpus as the tokenizer). In this paper, we go one step further by introducing guidance from other modalities and validating that such additional knowledge leads to impressive gains for visual pre-training.

1247, TITLE: Locally Varying Distance Transform for Unsupervised Visual Anomaly Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1673_ECCV_2022_paper.php
AUTHORS: Wen-Yan Lin, Zhonghang Liu, Siying Liu
HIGHLIGHT: This paper proposes a new embedding using a set of locally varying data projections, with each projection responsible for persevering the variations that distinguish a local cluster of instances from all other instances.

1248, TITLE: HRDA: Context-Aware High-Resolution Domain-Adaptive Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1999_ECCV_2022_paper.php
AUTHORS: Lukas Hoyer, Dengxin Dai, Luc Van Gool
HIGHLIGHT: The alternative of training with random crops of high-resolution images alleviates this problem but falls short in capturing long-range, domain-robust context information. Therefore, we propose HRDA, a multi-resolution training approach for UDA, that combines the strengths of small high-resolution crops to preserve fine segmentation details and large low-resolution crops to capture long-range context dependencies with a learned scale attention, while maintaining a manageable GPU memory footprint.

1249, TITLE: SPot-the-Difference Self-Supervised Pre-training for Anomaly Detection and Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2149_ECCV_2022_paper.php
AUTHORS: Yang Zou, Jongheon Jeong, Latha Pemula, Dongqing Zhang, Onkar Dabeer
HIGHLIGHT: In this paper, we present a new dataset as well as a new self-supervised learning method for ImageNet pre-training to improve anomaly detection and segmentation in 1-class and 2-class 5/10/high-shot training setups.

1250, TITLE: Dual-Domain Self-Supervised Learning and Model Adaption for Deep Compressive Imaging
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2240_ECCV_2022_paper.php
AUTHORS: Yuhui Quan, Xinran Qin, Tongyao Pang, Hui Ji
HIGHLIGHT: Aiming at addressing the limitations of supervised deep learning-based methods caused by their prerequisite on the ground truths of latent images, this paper proposes an unsupervised approach that trains a deep image reconstruction model using only a set of compressive measurements.

1251, TITLE: Unsupervised Selective Labeling for More Effective Semi-Supervised Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2575_ECCV_2022_paper.php
AUTHORS: Xudong Wang, Long Lian, Stella X. Yu
HIGHLIGHT: Given an unlabeled dataset and an annotation budget, we study how to selectively label a fixed number of instances so that semi-supervised learning (SSL) on such a partially labeled dataset is most effective.

1252, TITLE:	Max Pooling with Vision Transformers Reconciles Class and Shape in Weakly Supervised Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2601_ECCV_2022_paper.php
AUTHORS:	Simone Rossetti, Damiano Zappia, Marta Sanzari, Marco Schaerf, Fiora Pirri
HIGHLIGHT:	This work proposes a new WSSS method dubbed ViT-PCM (ViT Patch-Class Mapping), not based on CAM.

1253, TITLE:	Dense Siamese Network for Dense Unsupervised Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2631_ECCV_2022_paper.php
AUTHORS:	Wenwei Zhang, Jiangmiao Pang, Kai Chen, Chen Change Loy
HIGHLIGHT:	This paper presents Dense Siamese Network (DenseSiam), a simple unsupervised learning framework for dense prediction tasks.

1254, TITLE:	Multi-Granularity Distillation Scheme towards Lightweight Semi-Supervised Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2732_ECCV_2022_paper.php
AUTHORS:	Jie Qin, Jie Wu, Ming Li, Xuefeng Xiao, Min Zheng, Xingang Wang
HIGHLIGHT:	Consequently, we offer the first attempt to provide lightweight SSSS models via a novel multi-granularity distillation (MGD) scheme, where multi-granularity is captured from three aspects: i) complementary teacher structure; ii) labeled-unlabeled data cooperative distillation; iii) hierarchical and multi-levels loss setting.

1255, TITLE:	CP2: Copy-Paste Contrastive Pretraining for Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2840_ECCV_2022_paper.php
AUTHORS:	Feng Wang, Huiyu Wang, Chen Wei, Alan Yuille, Wei Shen
HIGHLIGHT:	In this work, we propose a pixel-wise contrastive learning method called CP2 (Copy-Paste Contrastive Pretraining), which facilitates both image- and pixel-level representation learning and therefore is more suitable for downstream dense prediction tasks.

1256, TITLE:	Self-Filtering: A Noise-Aware Sample Selection for Label Noise with Confidence Penalization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3017_ECCV_2022_paper.php
AUTHORS:	Qi Wei, Haoliang Sun, Xiankai Lu, Yilong Yin
HIGHLIGHT:	In this paper, we propose a novel selection strategy, $\textbf{S}$elf-$\textbf{F}$il$\textbf{t}$ering (SFT), that utilizes the fluctuation of noisy examples in historical predictions to filter them, which can avoid the selection bias of the small-loss criterion for the boundary examples.

1257, TITLE:	RDA: Reciprocal Distribution Alignment for Robust Semi-Supervised Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3058_ECCV_2022_paper.php
AUTHORS:	Yue Duan, Lei Qi, Lei Wang, Luping Zhou, Yinghuan Shi
HIGHLIGHT:	In this work, we propose Reciprocal Distribution Alignment (RDA) to address semi-supervised learning (SSL), which is a hyperparameter-free framework that is independent of confidence threshold and works with both the matched (conventionally) and the mismatched class distributions.

1258, TITLE:	MemSAC: Memory Augmented Sample Consistency for Large Scale Domain Adaptation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3093_ECCV_2022_paper.php
AUTHORS:	Tarun Kalluri, Astuti Sharma, Manmohan Chandraker
HIGHLIGHT:	In this work we propose MemSAC, which exploits sample level similarity across source and target domains to achieve discriminative transfer, along with architectures that scale to a large number of categories.

1259, TITLE:	United Defocus Blur Detection and Deblurring via Adversarial Promoting Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3308_ECCV_2022_paper.php
AUTHORS:	Wenda Zhao, Fei Wei, You He, Huchuan Lu
HIGHLIGHT:	This paper makes the earliest effort to jointly learn both defocus detection and deblurring without using pixel-level defocus detection annotation and paired defocus deblurring ground truth.

1260, TITLE:	Synergistic Self-Supervised and Quantization Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3332_ECCV_2022_paper.php
AUTHORS:	Yun-Hao Cao, Peiqin Sun, Yechang Huang, Jianxin Wu, Shuchang Zhou
HIGHLIGHT:	In this paper, we propose a method called synergistic self-supervised and quantization learning (SSQL) to pretrain quantization-friendly self-supervised models facilitating downstream deployment.

1261, TITLE:	Semi-Supervised Vision Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3393_ECCV_2022_paper.php
AUTHORS:	Zejia Weng, Xitong Yang, Ang Li, Zuxuan Wu, Yu-Gang Jiang
HIGHLIGHT:	Surprisingly, we show Vision Transformers perform significantly worse than Convolutional Neural Networks when only a small set of labeled data is available. Inspired by this observation, we introduce a joint semi-supervised learning framework, Semiformer, which contains a transformer stream, a convolutional stream and a carefully designed fusion module for knowledge sharing between these streams.

1262, TITLE:	Domain Adaptive Video Segmentation via Temporal Pseudo Supervision
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3438_ECCV_2022_paper.php
AUTHORS:	Yun Xing, Dayan Guan, Jiaxing Huang, Shijian Lu

HIGHLIGHT: We design temporal pseudo supervision (TPS), a simple and effective method that explores the idea of consistency training for learning effective representations from unlabelled target videos.

1263, TITLE: Diverse Learner: Exploring Diverse Supervision for Semi-Supervised Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3442_ECCV_2022_paper.php
AUTHORS: Linfeng Li, Minyue Jiang, Yue Yu, Wei Zhang, Xiangru Lin, Yingying Li, Xiao Tan, Jingdong Wang, Errui Ding
HIGHLIGHT: Although the performance is desirable, many remaining issues still need to be resolved, for example: (1) the teacher updated by the student using EMA tends to lose its distinctiveness and hence generates similar predictions comparing with student and cause potential noise accumulation as the training proceeds (2) the exploitation of pseudo labels still has much room for improvement. We present a diverse learner semi-supervised object detection framework to tackle these issues.

1264, TITLE: A Closer Look at Invariances in Self-Supervised Pre-training for 3D Vision
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3681_ECCV_2022_paper.php
AUTHORS: Lanxiao Li, Michael Heizmann
HIGHLIGHT: Although they have achieved promising results, previous researches lack a systematic and fair comparison of these invariances. To address this issue, our work, for the first time, introduces a unified framework, into which previous works fit.

1265, TITLE: ConMatch: Semi-Supervised Learning with Confidence-Guided Consistency Regularization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3758_ECCV_2022_paper.php
AUTHORS: Jiwon Kim, Youngjo Min, Daehwan Kim, Gyuseong Lee, Junyoung Seo, Kwangrok Ryoo, Seungryong Kim
HIGHLIGHT: We present a novel semi-supervised learning framework that intelligently leverages the consistency regularization between the model's predictions from two strongly-augmented views of an image, weighted by a confidence of pseudo-label, dubbed ConMatch.

1266, TITLE: FedX: Unsupervised Federated Learning with Cross Knowledge Distillation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3932_ECCV_2022_paper.php
AUTHORS: Sungwon Han, Sungwon Park, Fangzhao Wu, Sundong Kim, Chuhan Wu, Xing Xie, Meeyoung Cha
HIGHLIGHT: This paper presents FedX, an unsupervised federated learning framework.

1267, TITLE: W2N: Switching from Weak Supervision to Noisy Supervision for Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4020_ECCV_2022_paper.php
AUTHORS: Zitong Huang, Yiping Bao, Bowen Dong, Erjin Zhou, Wangmeng Zuo
HIGHLIGHT: However, these approaches simply divide the training set into labeled and unlabeled sets according to the image-level criteria, such that sufficient mislabeled or wrongly localized box predictions are chosen as pseudo ground-truths, resulting in a sub-optimal solution of detection performance. To overcome this issue, we propose a novel WSOD framework with a new paradigm that switches from weak supervision to noisy supervision (W2N).

1268, TITLE: Decoupled Adversarial Contrastive Learning for Self-Supervised Adversarial Robustness
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4028_ECCV_2022_paper.php
AUTHORS: Chaoning Zhang, Kang Zhang, Chenshuang Zhang, Axi Niu, Jiu Feng, Chang D. Yoo, In So Kweon
HIGHLIGHT: This motivation shifts the focus of the task from seeking an optimal integrating strategy for a coupled problem to finding sub-solutions for sub-problems. With this said, this work discards prior practices of directly introducing AT to SSL frameworks and proposed a two-stage framework termed \underline{De}coupled \underline{A}dversarial \underline{C}ontrastive \underline{L}earning (DeACL).

1269, TITLE: GOCA: Guided Online Cluster Assignment for Self-Supervised Video Representation Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4208_ECCV_2022_paper.php
AUTHORS: Huseyin Coskun, Alireza Zareian, Joshua L. Moore, Federico Tombari, Chen Wang
HIGHLIGHT: In this paper, we propose a principled way to combine two modalities.

1270, TITLE: Constrained Mean Shift Using Distant Yet Related Neighbors for Representation Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4300_ECCV_2022_paper.php
AUTHORS: K L Navaneet, Soroush Abbasi Koohpayegani, Ajinkya Tejankar, Kossar Pourahmadi, Akshayvarun Subramanya, Hamed Pirsiavash
HIGHLIGHT: We generalize the mean-shift idea by constraining the search space of NNs using another source of knowledge so that NNs are far from the query while still being semantically related.

1271, TITLE: Revisiting the Critical Factors of Augmentation-Invariant Representation Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4349_ECCV_2022_paper.php
AUTHORS: Junqiang Huang, Xiangwen Kong, Xiangyu Zhang
HIGHLIGHT: We focus on better understanding the critical factors of augmentation-invariant representation learning.

1272, TITLE: CA-SSL: Class-Agnostic Semi-Supervised Learning for Detection and Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4440_ECCV_2022_paper.php
AUTHORS: Lu Qi, Jason Kuen, Zhe Lin, Jiuxiang Gu, Fengyun Rao, Dian Li, Weidong Guo, Zhen Wen, Ming-Hsuan Yang, Jiaya Jia
HIGHLIGHT: To this end, we propose a novel Class-Agnostic Semi-Supervised Learning (CA-SSL) framework to achieve a more favorable task-specificity balance in extracting training signals from unlabeled data.

1273, TITLE: Dual Adaptive Transformations for Weakly Supervised Point Cloud Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4481_ECCV_2022_paper.php
AUTHORS: Zhonghua Wu, Yicheng Wu, Guosheng Lin, Jianfei Cai, Chen Qian
HIGHLIGHT: Specifically, we propose a novel DAT (Dual Adaptive Transformations) model for weakly supervised point cloud segmentation, where the dual adaptive transformations are performed via an adversarial strategy at both point-level and region-level, aiming at enforcing the local and structural smoothness constraints on 3D point clouds.

1274, TITLE: Semantic-Aware Fine-Grained Correspondence
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4824_ECCV_2022_paper.php
AUTHORS: Yingdong Hu, Renhao Wang, Kaifeng Zhang, Yang Gao
HIGHLIGHT: In contrast, human vision is capable of distinguishing between distinct objects as a pretext to tracking. Inspired by this paradigm, we propose to learn semantic-aware fine-grained correspondence.

1275, TITLE: Self-Supervised Classification Network
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4857_ECCV_2022_paper.php
AUTHORS: Elad Amrani, Leonid Karlinsky, Alex Bronstein
HIGHLIGHT: We present Self-Classifier -- a novel self-supervised end-to-end classification learning approach.

1276, TITLE: Data Invariants to Understand Unsupervised Out-of-Distribution Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4951_ECCV_2022_paper.php
AUTHORS: Lars Doorenbos, Raphael Sznitman, Pablo M&aacute;rquez-Neila
HIGHLIGHT: By performing a large-scale evaluation on different benchmarks and image modalities, we show in this work that most popular state-of-the-art methods are unable to consistently outperform a simple anomaly detector based on pre-trained features and the Mahalanobis distance (MahaAD).

1277, TITLE: Domain Invariant Masked Autoencoders for Self-Supervised Learning from Multi-Domains
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4983_ECCV_2022_paper.php
AUTHORS: Haiyang Yang, Shixiang Tang, Meilin Chen, Yizhou Wang, Feng Zhu, Lei Bai, Rui Zhao, Wanli Ouyang
HIGHLIGHT: In this paper, we propose a Domain-invariant Masked AutoEncoder (DiMAE) for self-supervised learning from multi-domains, which designs a new pretext task, i.e., the cross-domain reconstruction task, to learn domain-invariant features.

1278, TITLE: Semi-Supervised Object Detection via Virtual Category Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5010_ECCV_2022_paper.php
AUTHORS: Changrui Chen, Kurt Debattista, Jungong Han
HIGHLIGHT: However, handling confusing samples is nontrivial: discarding valuable confusing samples would compromise the model generalisation while using them for training would exacerbate the confirmation bias issue caused by inevitable mislabelling. To solve this problem, this paper proposes to use confusing samples proactively without label correction.

1279, TITLE: Completely Self-Supervised Crowd Counting via Distribution Matching
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5122_ECCV_2022_paper.php
AUTHORS: Deepak Babu Sam, Abhinav Agarwalla, Jimmy Joseph, Vishwanath A. Sindagi, R. Venkatesh Babu, Vishal M. Patel
HIGHLIGHT: Though existing self-supervised approaches could learn good representations, they require some labeled data to map these features to the end task of density estimation. We mitigate this issue with the proposed paradigm of complete self-supervision, which does not need even a single labeled image.

1280, TITLE: Coarse-to-Fine Incremental Few-Shot Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5156_ECCV_2022_paper.php
AUTHORS: Xiang Xiang, Yuwen Tan, Qian Wan, Jing Ma, Alan Yuille, Gregory D. Hager
HIGHLIGHT: Such images form a new training set (i.e., support set) so that the incremental model is hoped to recognize a basenji (i.e., query) as a basenji next time. This paper formulates such a hybrid natural problem of coarse-to-fine few-shot (C2FS) recognition as a CIL problem named C2FSCIL, and proposes a simple, effective, and theoretically-sound strategy Knowe: to learn, normalize, and freeze a classifier's weights from fine labels, once learning an embedding space contrastively from coarse labels.

1281, TITLE: Learning Unbiased Transferability for Domain Adaptation by Uncertainty Modeling
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5157_ECCV_2022_paper.php
AUTHORS: Jian Hu, Haowen Zhong, Fei Yang, Shaogang Gong, Guile Wu, Junchi Yan
HIGHLIGHT: However, due to the significant imbalance between the amount of annotated data in the source and target domains, usually only the target distribution is aligned to the source domain, leading to adapting unnecessary source specific knowledge to the target domain, i.e., biased domain adaptation. To resolve this problem, in this work, we delve into the transferability estimation problem in domain adaptation, proposing a non-intrusive Unbiased Transferability Estimation Plug-in (UTEP) by modeling the uncertainty of a discriminator in adversarial-based DA methods to optimize unbiased transfer.

1282, TITLE: Learn2Augment: Learning to Composite Videos for Data Augmentation in Action Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5234_ECCV_2022_paper.php
AUTHORS: Shreyank N Gowda, Marcus Rohrbach, Frank Keller, Laura Sevilla-Lara
HIGHLIGHT: We propose to learn what makes a "good" video for action recognition and select only high-quality samples for augmentation.

1283, TITLE: CYBORGS: Contrastively Bootstrapping Object Representations by Grounding in Segmentation

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http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5373_ECCV_2022_paper.php
AUTHORS:            Renhao Wang, Hang Zhao, Yang Gao
HIGHLIGHT:          Previous works use preprocessing pipelines to localize salient objects for improved cropping, but an end-to-end solution is still elusive. In this work, we propose a framework which accomplishes this goal via joint learning of representations and segmentation.

1284, TITLE:        PSS: Progressive Sample Selection for Open-World Visual Representation Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5405_ECCV_2022_paper.php
AUTHORS:            Tianyue Cao, Yongxin Wang, Yifan Xing, Tianjun Xiao, Tong He, Zheng Zhang, Hao Zhou, Joseph Tighe
HIGHLIGHT:          We propose a novel progressive approach which, at each iteration, selects unlabeled samples that attain a high homogeneity while belonging to classes that are distant to the current set of known classes in the feature space.

1285, TITLE:        Improving Self-Supervised Lightweight Model Learning via Hard-Aware Metric Distillation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5415_ECCV_2022_paper.php
AUTHORS:            Hao Liu, Mang Ye
HIGHLIGHT:          Existing SSL methods suffer a precipitous drop in lightweight models, which is important for many mobile devices. To address this problem, we propose a method to improve the lightweight network (as student) via distilling the metric knowledge in a larger SSL model (as teacher).

1286, TITLE:        Object Discovery via Contrastive Learning for Weakly Supervised Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5458_ECCV_2022_paper.php
AUTHORS:            Jinhwan Seo, Wonho Bae, Danica J. Sutherland, Junhyug Noh, Daijin Kim
HIGHLIGHT:          Current state-of-the-art models benefit from self-supervised instance-level supervision, but since weak supervision does not include count or location information, the most common "argmax" labeling method often ignores many instances of objects. To alleviate this issue, we propose a novel multiple instance labeling method called object discovery.

1287, TITLE:        Stochastic Consensus: Enhancing Semi-Supervised Learning with Consistency of Stochastic Classifiers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6009_ECCV_2022_paper.php
AUTHORS:            Hui Tang, Lin Sun, Kui Jia
HIGHLIGHT:          Semi-supervised learning (SSL) has achieved new progress recently with the emerging framework of self-training deep networks, where the criteria for selection of unlabeled samples with pseudo labels play a key role in the empirical success. In this work, we propose such a new criterion based on consistency among multiple, stochastic classifiers, termed Stochastic Consensus (STOCO).

1288, TITLE:        DiffuseMorph: Unsupervised Deformable Image Registration Using Diffusion Model
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6455_ECCV_2022_paper.php
AUTHORS:            Boah Kim, Inhwa Han, Jong Chul Ye
HIGHLIGHT:          Although deep-learning-based methods have been developed for fast image registration, it is still challenging to obtain realistic continuous deformations from a moving image to a fixed image with less topological folding problem. To address this, here we present a novel diffusion-model-based image registration method, called DiffuseMorph.

1289, TITLE:        Semi-Leak: Membership Inference Attacks against Semi-Supervised Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6562_ECCV_2022_paper.php
AUTHORS:            Xinlei He, Hongbin Liu, Neil Zhenqiang Gong, Yang Zhang
HIGHLIGHT:          In this work, we take a different angle by studying the training data privacy of SSL.

1290, TITLE:        OpenLDN: Learning to Discover Novel Classes for Open-World Semi-Supervised Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6665_ECCV_2022_paper.php
AUTHORS:            Mamshad Nayeem Rizve, Navid Kardan, Salman Khan, Fahad Shahbaz Khan, Mubarak Shah
HIGHLIGHT:          However, this is hardly the case in many real-world scenarios, which limits their applicability. In this work, instead, we attempt to solve the challenging open-world SSL problem that does not make such an assumption.

1291, TITLE:        Embedding Contrastive Unsupervised Features to Cluster in- and Out-of-Distribution Noise in Corrupted Image Datasets
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6827_ECCV_2022_paper.php
AUTHORS:            Paul Albert, Eric Arazo, Noel E. O'Connor, Kevin McGuinness
HIGHLIGHT:          The latter are, in practice, the dominant type of noisy images retrieved. To tackle this noise duality, we propose a two stage algorithm starting with a detection step where we use unsupervised contrastive feature learning to represent images in a feature space.

1292, TITLE:        Unsupervised Few-Shot Image Classification by Learning Features into Clustering Space
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7167_ECCV_2022_paper.php
AUTHORS:            Shuo Li, Fang Liu, Zehua Hao, Kaibo Zhao, Licheng Jiao
HIGHLIGHT:          Based on our LF2CS, we put forward an image sampling and c-way k-shot task building method. With this, we propose a novel unsupervised few-shot image classification method, which jointly learns the learnable model, clustering and few-shot image classification.

1293, TITLE:        Towards Realistic Semi-Supervised Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7402_ECCV_2022_paper.php
AUTHORS:            Mamshad Nayeem Rizve, Navid Kardan, Mubarak Shah

HIGHLIGHT:　　　　In this paper, we propose a novel pseudo-label based approach to tackle SSL in open-world setting.

1294, TITLE:　　　　Masked Siamese Networks for Label-Efficient Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7427_ECCV_2022_paper.php
AUTHORS:　　　　Mahmoud Assran, Mathilde Caron, Ishan Misra, Piotr Bojanowski, Florian Bordes, Pascal Vincent, Armand Joulin, Michael Rabbat, Nicolas Ballas
HIGHLIGHT:　　　　We propose Masked Siamese Networks (MSN), a self-supervised learning framework for learning image representations.

1295, TITLE:　　　　Natural Synthetic Anomalies for Self-Supervised Anomaly Detection and Localization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7519_ECCV_2022_paper.php
AUTHORS:　　　　Hannah M. Schl&uuml;ter, Jeremy Tan, Benjamin Hou, Bernhard Kainz
HIGHLIGHT:　　　　We introduce a simple and intuitive self-supervision task, Natural Synthetic Anomalies (NSA), for training an end-to-end model for anomaly detection and localization using only normal training data.

1296, TITLE:　　　　Understanding Collapse in Non-Contrastive Siamese Representation Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7626_ECCV_2022_paper.php
AUTHORS:　　　　Alexander C. Li, Alexei A. Efros, Deepak Pathak
HIGHLIGHT:　　　　We empirically analyze these non-contrastive methods and find that SimSiam is extraordinarily sensitive to model size.

1297, TITLE:　　　　Federated Self-Supervised Learning for Video Understanding
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7693_ECCV_2022_paper.php
AUTHORS:　　　　Yasar Abbas Ur Rehman, Yan Gao, Jiajun Shen, Pedro Porto Buarque de Gusm&atilde;o, Nicholas Lane
HIGHLIGHT:　　　　In this work, we evaluate the performance of current state-of-the-art (SOTA) video-SSL techniques and identify their shortcomings when integrated into the large-scale FL setting simulated with kinetics-400 dataset.

1298, TITLE:　　　　Towards Efficient and Effective Self-Supervised Learning of Visual Representations
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7719_ECCV_2022_paper.php
AUTHORS:　　　　Sravanti Addepalli, Kaushal Bhogale, Priyam Dey, R. Venkatesh Babu
HIGHLIGHT:　　　　In this work, we explore reasons for the slow convergence of these methods, and further propose to strengthen them using well-posed auxiliary tasks that converge significantly faster, and are also useful for representation learning.

1299, TITLE:　　　　DSR – A Dual Subspace Re-Projection Network for Surface Anomaly Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7955_ECCV_2022_paper.php
AUTHORS:　　　　Vitjan Zavrtanik, Matej Kristan, Danijel Sko?aj
HIGHLIGHT:　　　　We propose an architecture based on quantized feature space representation with dual decoders, DSR, that avoids the image-level anomaly synthesis requirement.

1300, TITLE:　　　　PseudoAugment: Learning to Use Unlabeled Data for Data Augmentation in Point Clouds
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/8063_ECCV_2022_paper.php
AUTHORS:　　　　Zhaoqi Leng, Shuyang Cheng, Benjamin Caine, Weiyue Wang, Xiao Zhang, Jonathon Shlens, Mingxing Tan, Dragomir Anguelov
HIGHLIGHT:　　　　In this paper, we recognize that pseudo labeling and data augmentation are complementary, thus propose to leverage unlabeled data for data augmentation to enrich the training data.

1301, TITLE:　　　　MVSTER: Epipolar Transformer for Efficient Multi-View Stereo
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/460_ECCV_2022_paper.php
AUTHORS:　　　　Xiaofeng Wang, Zheng Zhu, Guan Huang, Fangbo Qin, Yun Ye, Yijia He, Xu Chi, Xingang Wang
HIGHLIGHT:　　　　However, previous methods utilize extra networks to learn 2D information as fusing cues, underusing 3D spatial correlations and bringing additional computation costs. Therefore, we present MVSTER, which leverages the proposed epipolar Transformer to learn both 2D semantics and 3D spatial associations efficiently.

1302, TITLE:　　　　RelPose: Predicting Probabilistic Relative Rotation for Single Objects in the Wild
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/602_ECCV_2022_paper.php
AUTHORS:　　　　Jason Y. Zhang, Deva Ramanan, Shubham Tulsiani
HIGHLIGHT:　　　　We describe a data-driven method for inferring the camera viewpoints given multiple images of an arbitrary object.

1303, TITLE:　　　　R2L: Distilling Neural \textit{Radiance} Field to Neural \textit{Light} Field for Efficient Novel View Synthesis
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/626_ECCV_2022_paper.php
AUTHORS:　　　　Huan Wang, Jian Ren, Zeng Huang, Kyle Olszewski, Menglei Chai, Yun Fu, Sergey Tulyakov
HIGHLIGHT:　　　　In this work, we present a \textit{deep residual MLP} network (88 layers) to effectively learn the light field.

1304, TITLE:　　　　KD-MVS: Knowledge Distillation Based Self-Supervised Learning for Multi-View Stereo
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/671_ECCV_2022_paper.php
AUTHORS:　　　　Yikang Ding, Qingtian Zhu, Xiangyue Liu, Wentao Yuan, Haotian Zhang, Chi Zhang
HIGHLIGHT:　　　　In this paper, we propose a novel self-supervised training pipeline for MVS based on knowledge distillation, termed KD-MVS, which mainly consists of self-supervised teacher training and distillation-based student training.

1305, TITLE: SALVe: Semantic Alignment Verification for Floorplan Reconstruction from Sparse Panoramas
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1039_ECCV_2022_paper.php
AUTHORS: John Lambert, Yuguang Li, Ivaylo Boyadzhiev, Lambert Wixson, Manjunath Narayana, Will Hutchcroft, James Hays, Frank Dellaert, Sing Bing Kang
HIGHLIGHT: We propose a new system for automatic 2D floorplan reconstruction that is enabled by SALVe, our novel pairwise learned alignment verifier.

1306, TITLE: RC-MVSNet: Unsupervised Multi-View Stereo with Neural Rendering
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1336_ECCV_2022_paper.php
AUTHORS: Di Chang, Aljaž Boži?, Tong Zhang, Qingsong Yan, Yingcong Chen, Sabine S&uuml,sstrunk, Matthias Nie&szlig,ner
HIGHLIGHT: However, multi-view images in real scenarios observe non-Lambertian surfaces and experience occlusions. In this work, we propose a novel approach with neural rendering (RC-MVSNet) to solve such ambiguity issues of correspondences among views.

1307, TITLE: Box2Mask: Weakly Supervised 3D Semantic Instance Segmentation Using Bounding Boxes
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1407_ECCV_2022_paper.php
AUTHORS: Julian Chibane, Francis Engelmann, Tuan Anh Tran, Gerard Pons-Moll
HIGHLIGHT: In this work, we look at weakly-supervised 3D semantic instance segmentation.

1308, TITLE: NeILF: Neural Incident Light Field for Physically-Based Material Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1415_ECCV_2022_paper.php
AUTHORS: Yao Yao, Jingyang Zhang, Jingbo Liu, Yihang Qu, Tian Fang, David McKinnon, Yanghai Tsin, Long Quan
HIGHLIGHT: We present a differentiable rendering framework for material and lighting estimation from multi-view images and a reconstructed geometry.

1309, TITLE: ARF: Artistic Radiance Fields
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1424_ECCV_2022_paper.php
AUTHORS: Kai Zhang, Nick Kolkin, Sai Bi, Fujun Luan, Zexiang Xu, Eli Shechtman, Noah Snavely
HIGHLIGHT: We present a method for transferring the artistic features of an arbitrary style image to a 3D scene.

1310, TITLE: Multiview Stereo with Cascaded Epipolar RAFT
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1425_ECCV_2022_paper.php
AUTHORS: Zeyu Ma, Zachary Teed, Jia Deng
HIGHLIGHT: We propose CER-MVS (Cascaded Epipolar RAFT Multiview Stereo), a new approach based on the RAFT (Recurrent All-Pairs Field Transforms) architecture developed for optical flow.

1311, TITLE: ARAH: Animatable Volume Rendering of Articulated Human SDFs
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1469_ECCV_2022_paper.php
AUTHORS: Shaofei Wang, Katja Schwarz, Andreas Geiger, Siyu Tang
HIGHLIGHT: Further, animating avatars in out-of-distribution poses is not yet possible because the mapping from observation space to canonical space does not generalize faithfully to unseen poses. In this work, we address these shortcomings and propose a model to create animatable clothed human avatars with detailed geometry that generalize well to out-of-distribution poses.

1312, TITLE: ASpanFormer: Detector-Free Image Matching with Adaptive Span Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1701_ECCV_2022_paper.php
AUTHORS: Hongkai Chen, Zixin Luo, Lei Zhou, Yurun Tian, Mingmin Zhen, Tian Fang, David McKinnon, Yanghai Tsin, Long Quan
HIGHLIGHT: To capture context at both global and local granularity, we propose ASpanFormer, a Transformer-based detector-free matcher that is built on hierarchical attention structure, adopting a novel attention operation which is capable of adjusting attention span in a self-adaptive manner.

1313, TITLE: NDF: Neural Deformable Fields for Dynamic Human Modelling
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1757_ECCV_2022_paper.php
AUTHORS: Ruiqi Zhang, Jie Chen
HIGHLIGHT: In this paper, we propose to learn a neural deformable field wrapped around a fitted parametric body model to represent the dynamic human.

1314, TITLE: Neural Density-Distance Fields
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1761_ECCV_2022_paper.php
AUTHORS: Itsuki Ueda, Yoshihiro Fukuhara, Hirokatsu Kataoka, Hiroaki Aizawa, Hidehiko Shishido, Itaru Kitahara
HIGHLIGHT: This paper proposes Neural Distance-Density Field (NeDDF), a novel 3D representation that reciprocally constrains the distance and density fields.

1315, TITLE: NeXT: Towards High Quality Neural Radiance Fields via Multi-Skip Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1810_ECCV_2022_paper.php
AUTHORS: Yunxiao Wang, Yanjie Li, Peidong Liu, Tao Dai, Shu-Tao Xia
HIGHLIGHT: However, most existing NeRF based methods, including its variants, treat each sample point individually as input, while ignoring the inherent relationships between adjacent sample points from the corresponding rays, thus hindering the

reconstruction performance. To address this issue, we explore a brand new scheme, namely NeXT, introducing a multi-skip transformer to capture the rich relationships between various sample points in a ray-level query.

1316, TITLE: Learning Online Multi-sensor Depth Fusion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1860_ECCV_2022_paper.php
AUTHORS: Erik Sandstr&ouml,m, Martin R. Oswald, Suryansh Kumar, Silvan Weder, Fisher Yu, Cristian Sminchisescu, Luc Van Gool
HIGHLIGHT: To this end, we introduce SenFuNet, a depth fusion approach that learns sensor-specific noise and outlier statistics and combines the data streams of depth frames from different sensors in an online fashion.

1317, TITLE: BungeeNeRF: Progressive Neural Radiance Field for Extreme Multi-Scale Scene Rendering
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1947_ECCV_2022_paper.php
AUTHORS: Yuanbo Xiangli, Linning Xu, Xingang Pan, Nanxuan Zhao, Anyi Rao, Christian Theobalt, Bo Dai, Dahua Lin
HIGHLIGHT: In this work, we focus on multi-scale cases where large changes in imagery are observed at drastically different scales.

1318, TITLE: Decomposing the Tangent of Occluding Boundaries according to Curvatures and Torsions
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2170_ECCV_2022_paper.php
AUTHORS: Huizong Yang, Anthony Yezzi
HIGHLIGHT: This paper develops new insight into the local structure of occluding boundaries on 3D surfaces.

1319, TITLE: NeuRIS: Neural Reconstruction of Indoor Scenes Using Normal Priors
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2234_ECCV_2022_paper.php
AUTHORS: Jiepeng Wang, Peng Wang, Xiaoxiao Long, Christian Theobalt, Taku Komura, Lingjie Liu, Wenping Wang
HIGHLIGHT: We propose a new method, dubbed NeuRIS, for high-quality reconstruction of indoor scenes.

1320, TITLE: Generalizable Patch-Based Neural Rendering
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2290_ECCV_2022_paper.php
AUTHORS: Mohammed Suhail, Carlos Esteves, Leonid Sigal, Ameesh Makadia
HIGHLIGHT: We propose a different paradigm, where no deep features and no NeRF-like volume rendering are needed.

1321, TITLE: Improving RGB-D Point Cloud Registration by Learning Multi-Scale Local Linear Transformation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2369_ECCV_2022_paper.php
AUTHORS: Ziming Wang, Xiaoliang Huo, Zhenghao Chen, Jing Zhang, Lu Sheng, Dong Xu
HIGHLIGHT: However, it is not trivial to effectively fuse the geometric and visual information from these two distinctive modalities, especially for the registration problem. In this work, we propose a new Geometry-Aware Visual Feature Extractor (GAVE) that employs multi-scale local linear transformation to progressively fuse these two modalities, where the geometric features from the depth data act as the geometry-dependent convolution kernels to transform the visual features from the RGB data.

1322, TITLE: Real-Time Neural Character Rendering with Pose-Guided Multiplane Images
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2511_ECCV_2022_paper.php
AUTHORS: Hao Ouyang, Bo Zhang, Pan Zhang, Hao Yang, Jiaolong Yang, Dong Chen, Qifeng Chen, Fang Wen
HIGHLIGHT: We propose pose-guided multiplane image (MPI) synthesis which can render an animatable character in real scenes with photorealistic quality.

1323, TITLE: SparseNeuS: Fast Generalizable Neural Surface Reconstruction from Sparse Views
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2516_ECCV_2022_paper.php
AUTHORS: Xiaoxiao Long, Cheng Lin, Peng Wang, Taku Komura, Wenping Wang
HIGHLIGHT: We introduce SparseNeuS, a novel neural rendering based method for the task of surface reconstruction from multi-view images.

1324, TITLE: Disentangling Object Motion and Occlusion for Unsupervised Multi-Frame Monocular Depth
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2584_ECCV_2022_paper.php
AUTHORS: Ziyue Feng, Liang Yang, Longlong Jing, Haiyan Wang, YingLi Tian, Bing Li
HIGHLIGHT: Existing dynamic-object-focused methods only partially solved the mismatch problem at the training loss level. In this paper, we accordingly propose a novel multi-frame monocular depth prediction method to solve these problems at both the prediction and supervision loss levels.

1325, TITLE: Depth Field Networks for Generalizable Multi-View Scene Representation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2598_ECCV_2022_paper.php
AUTHORS: Vitor Guizilini, Igor Vasiljevic, Jiading Fang, Rare? Ambru?, Greg Shakhnarovich, Matthew R. Walter, Adrien Gaidon
HIGHLIGHT: Recently, generalist Transformer architectures have achieved impressive results in tasks such as optical flow and depth estimation by encoding geometric priors as inputs rather than as enforced constraints. In this paper, we extend this idea and propose to learn an implicit, multi-view consistent scene representation, introducing a series of 3D data augmentation techniques as a geometric inductive prior to increase view diversity.

1326, TITLE: Context-Enhanced Stereo Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2649_ECCV_2022_paper.php

AUTHORS: Weiyu Guo, Zhaoshuo Li, Yongkui Yang, Zheng Wang, Russell H. Taylor, Mathias Unberath, Alan Yuille, Yingwei Li
HIGHLIGHT: However, existing methods struggles to generalize and predict reliably in hazardous regions, such as large uniform regions. To overcome these limitations, we propose Context Enhanced Path (CEP).

1327, TITLE: PCW-Net: Pyramid Combination and Warping Cost Volume for Stereo Matching
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3086_ECCV_2022_paper.php
AUTHORS: Zhelun Shen, Yuchao Dai, Xibin Song, Zhibo Rao, Dingfu Zhou, Liangjun Zhang
HIGHLIGHT: Existing deep learning based stereo matching methods either focus on achieving optimal performances on the target dataset while with poor generalization for other datasets or focus with handling the cross-domain generalization by suppressing the domain sensitive features which results in a significant sacrifice on the performance. To tackle these problems, we propose PCW-Net, a Pyramid Combination and Warping cost volume-based network to achieve good performance on both cross-domain generalization and stereo matching accuracy on various benchmarks.

1328, TITLE: Gen6D: Generalizable Model-Free 6-DoF Object Pose Estimation from RGB Images
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3378_ECCV_2022_paper.php
AUTHORS: Yuan Liu, Yilin Wen, Sida Peng, Cheng Lin, Xiaoxiao Long, Taku Komura, Wenping Wang
HIGHLIGHT: In this paper, we present a generalizable model-free 6-DoF object pose estimator called Gen6D.

1329, TITLE: Latency-Aware Collaborative Perception
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3474_ECCV_2022_paper.php
AUTHORS: Zixing Lei, Shunli Ren, Yue Hu, Wenjun Zhang, Siheng Chen
HIGHLIGHT: To mitigate the e&iuml&not€ect caused by the inevitable latency, from a machine learning perspective, we present the first latency-aware collaborative perception system, which actively adapts asynchronous perceptual features from multiple agents to the same time stamp, promoting the robustness and e&iuml&not€ectiveness of collaboration.

1330, TITLE: TensoRF: Tensorial Radiance Fields
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3555_ECCV_2022_paper.php
AUTHORS: Anpei Chen, Zexiang Xu, Andreas Geiger, Jingyi Yu, Hao Su
HIGHLIGHT: We present TensoRF, a novel approach to model and reconstruct radiance fields.

1331, TITLE: NeFSAC: Neurally Filtered Minimal Samples
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3658_ECCV_2022_paper.php
AUTHORS: Luca Cavalli, Marc Pollefeys, Daniel Barath
HIGHLIGHT: To this end, we propose NeFSAC, an efficient algorithm for neural filtering of motion-inconsistent and poorly-conditioned minimal samples.

1332, TITLE: SNeS: Learning Probably Symmetric Neural Surfaces from Incomplete Data
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3686_ECCV_2022_paper.php
AUTHORS: Eldar Insafutdinov, Dylan Campbell, Jo&atilde,o F. Henriques, Andrea Vedaldi
HIGHLIGHT: We present a method for the accurate 3D reconstruction of partly-symmetric objects.

1333, TITLE: HDR-Plenoxels: Self-Calibrating High Dynamic Range Radiance Fields
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3703_ECCV_2022_paper.php
AUTHORS: Kim Jun-Seong, Kim Yu-Ji, Moon Ye-Bin, Tae-Hyun Oh
HIGHLIGHT: We propose high dynamic range radiance (HDR) fields, HDR-Plenoxels, that learns a plenoptic function of 3D HDR radiance fields, geometry information, and varying camera settings inherent in 2D low dynamic range (LDR) images.

1334, TITLE: NeuMan: Neural Human Radiance Field from a Single Video
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3737_ECCV_2022_paper.php
AUTHORS: Wei Jiang, Kwang Moo Yi, Golnoosh Samei, Oncel Tuzel, Anurag Ranjan
HIGHLIGHT: We propose a novel framework to reconstruct the human and the scene that can be rendered with novel human poses and views from just a single in-the-wild video.

1335, TITLE: TAVA: Template-Free Animatable Volumetric Actors
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3781_ECCV_2022_paper.php
AUTHORS: Ruilong Li, Julian Tanke, Minh Vo, Michael Zollh&ouml,fer, J&uuml,rgen Gall, Angjoo Kanazawa, Christoph Lassner
HIGHLIGHT: In this paper, we propose TAVA, a method to create Template-free Animatable Volumetric Actors, based on neural representations.

1336, TITLE: EASNet: Searching Elastic and Accurate Network Architecture for Stereo Matching
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3794_ECCV_2022_paper.php
AUTHORS: Qiang Wang, Shaohuai Shi, Kaiyong Zhao, Xiaowen Chu
HIGHLIGHT: To this end, we propose to train an \underline{e}lastic and \underline{a}ccurate network for \underline{s}tereo matching (EASNet) that supports various 3D architectural settings on devices with different compute capability.

1337, TITLE: Relative Pose from SIFT Features
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3998_ECCV_2022_paper.php
AUTHORS: Daniel Barath, Zuzana Kukelova

HIGHLIGHT:		This paper proposes the geometric relationship of epipolar geometry and orientation- and scale-covariant, e.g., SIFT, features.

1338, TITLE:		Selection and Cross Similarity for Event-Image Deep Stereo
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4130_ECCV_2022_paper.php
AUTHORS:		Hoonhee Cho, Kuk-Jin Yoon
HIGHLIGHT:		In this paper, we aim to effectively deal with events that continuously occur with different disparity in the scene depending on the camera's movement.

1339, TITLE:		D3Net: A Unified Speaker-Listener Architecture for 3D Dense Captioning and Visual Grounding
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4452_ECCV_2022_paper.php
AUTHORS:		Zhenyu Chen, Qirui Wu, Matthias Nie&szlig,ner, Angel X. Chang
HIGHLIGHT:		Also, how to discriminatively describe objects in complex 3D environments is not fully studied yet. To address these challenges, we present D3Net, an end-to-end neural speaker-listener architecture that can detect, describe and discriminate.

1340, TITLE:		CIRCLE: Convolutional Implicit Reconstruction and Completion for Large-Scale Indoor Scene
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4658_ECCV_2022_paper.php
AUTHORS:		Hao-Xiang Chen, Jiahui Huang, Tai-Jiang Mu, Shi-Min Hu
HIGHLIGHT:		We present CIRCLE, a framework for large-scale scene completion and geometric refinement based on local implicit signed distance functions.

1341, TITLE:		ParticleSfM: Exploiting Dense Point Trajectories for Localizing Moving Cameras in the Wild
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4715_ECCV_2022_paper.php
AUTHORS:		Wang Zhao, Shaohui Liu, Hengkai Guo, Wenping Wang, Yong-Jin Liu
HIGHLIGHT:		Estimating the pose of a moving camera from monocular video is a challenging problem, especially due to the presence of moving objects in dynamic environments, where the performance of existing camera pose estimation methods are susceptible to pixels that are not geometrically consistent. To tackle this challenge, we present a robust dense indirect structure-from-motion method for videos that is based on dense correspondence initialized from pairwise optical flow.

1342, TITLE:		4DContrast: Contrastive Learning with Dynamic Correspondences for 3D Scene Understanding
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4908_ECCV_2022_paper.php
AUTHORS:		Yujin Chen, Matthias Nie&szlig,ner, Angela Dai
HIGHLIGHT:		We present a new approach to instill 4D dynamic object priors into learned 3D representations by unsupervised pre-training.

1343, TITLE:		Few `\textit{Zero Level Set}'-Shot Learning of Shape Signed Distance Functions in Feature Space
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4940_ECCV_2022_paper.php
AUTHORS:		Amine Ouasfi, Adnane Boukhayma
HIGHLIGHT:		We explore a new idea for learning based shape reconstruction from a point cloud, based on the recently popularized implicit neural shape representations.

1344, TITLE:		Solution Space Analysis of Essential Matrix Based on Algebraic Error Minimization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5096_ECCV_2022_paper.php
AUTHORS:		Gaku Nakano
HIGHLIGHT:		This paper reports on a solution space analysis of the essential matrix based on algebraic error minimization.

1345, TITLE:		Approximate Differentiable Rendering with Algebraic Surfaces
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5285_ECCV_2022_paper.php
AUTHORS:		Leonid Keselman, Martial Hebert
HIGHLIGHT:		In this work, we develop an approximate differentiable renderer for a compact, interpretable representation, which we call Fuzzy Metaballs.

1346, TITLE:		CoVisPose: Co-Visibility Pose Transformer for Wide-Baseline Relative Pose Estimation in 360&deg Indoor Panoramas
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5330_ECCV_2022_paper.php
AUTHORS:		Will Hutchcroft, Yuguang Li, Ivaylo Boyadzhiev, Zhiqiang Wan, Haiyan Wang, Sing Bing Kang
HIGHLIGHT:		We present CoVisPose, a new end-to-end supervised learning method for relative camera pose estimation in wide baseline 360 indoor panoramas.

1347, TITLE:		Affine Correspondences between Multi-Camera Systems for 6DOF Relative Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5358_ECCV_2022_paper.php
AUTHORS:		Banglei Guan, Ji Zhao
HIGHLIGHT:		We present a novel method to compute the 6DOF relative pose of multi-camera systems using two affine correspondences (ACs).

1348, TITLE:		GraphFit: Learning Multi-Scale Graph-Convolutional Representation for Point Cloud Normal Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5419_ECCV_2022_paper.php
AUTHORS:		Keqiang Li, Mingyang Zhao, Huaiyu Wu, Dong-Ming Yan, Zhen Shen, Fei-Yue Wang, Gang Xiong
HIGHLIGHT:		We propose a precise and efficient normal estimation method that can deal with noise and nonuniform density for unstructured 3D point clouds.

1349, TITLE: IS-MVSNet: Importance Sampling-Based MVSNet
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5494_ECCV_2022_paper.php
AUTHORS: Likang Wang, Yue Gong, Xinjun Ma, Qirui Wang, Kaixuan Zhou, Lei Chen
HIGHLIGHT: This paper presents a novel coarse-to-fine multi-view stereo (MVS) algorithm called importance-sampling-based MVSNet (IS-MVSNet) to address a crucial problem of limited depth resolution adopted by current learning-based MVS methods.

1350, TITLE: Point Scene Understanding via Disentangled Instance Mesh Reconstruction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5542_ECCV_2022_paper.php
AUTHORS: Jiaxiang Tang, Xiaokang Chen, Jingbo Wang, Gang Zeng
HIGHLIGHT: To circumvent the hurdle, we propose a Disentangled Instance Mesh Reconstruction (DIMR) framework for effective point scene understanding.

1351, TITLE: DiffuStereo: High Quality Human Reconstruction via Diffusion-Based Stereo Using Sparse Cameras
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5622_ECCV_2022_paper.php
AUTHORS: Ruizhi Shao, Zerong Zheng, Hongwen Zhang, Jingxiang Sun, Yebin Liu
HIGHLIGHT: We propose DiffuStereo, a novel system using only sparse cameras (8 in this work) for high-quality 3D human reconstruction.

1352, TITLE: Space-Partitioning RANSAC
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5702_ECCV_2022_paper.php
AUTHORS: Daniel Barath, G&aacute,bor Valasek
HIGHLIGHT: A new algorithm is proposed to accelerate the RANSAC model quality calculations.

1353, TITLE: SimpleRecon: 3D Reconstruction without 3D Convolutions
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5721_ECCV_2022_paper.php
AUTHORS: Mohamed Sayed, John Gibson, Jamie Watson, Victor Prisacariu, Michael Firman, Cl&eacute,ment Godard
HIGHLIGHT: In this work, we instead go back to the traditional route, and show how focusing on high quality multi-view depth prediction leads to highly accurate 3D reconstructions using simple off-the-shelf depth fusion.

1354, TITLE: Structure and Motion from Casual Videos
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5771_ECCV_2022_paper.php
AUTHORS: Zhoutong Zhang, Forrester Cole, Zhengqi Li, Noah Snavely, Michael Rubinstein, William T. Freeman
HIGHLIGHT: Under such conditions, state-of-the-art SfM methods tend to produce erroneous results, often failing entirely. To address these issues, we propose CasualSAM, a method to estimate camera poses and dense depth maps from a monocular, casually-captured video.

1355, TITLE: What Matters for 3D Scene Flow Network
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5923_ECCV_2022_paper.php
AUTHORS: Guangming Wang, Yunzhe Hu, Zhe Liu, Yiyang Zhou, Masayoshi Tomizuka, Wei Zhan, Hesheng Wang
HIGHLIGHT: In addition, the estimated correspondence is usually from the forward direction of the adjacent point clouds, and may not be consistent with the estimated correspondence acquired from the backward direction. To tackle these problems, we propose a novel all-to-all flow embedding layer with backward reliability validation during the initial scene flow estimation.

1356, TITLE: Correspondence Reweighted Translation Averaging
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5988_ECCV_2022_paper.php
AUTHORS: Lalit Manam, Venu Madhav Govindu
HIGHLIGHT: To this end, we introduce weights for individual correspondences which are iteratively refined to yield improved translation directions.

1357, TITLE: Neural Strands: Learning Hair Geometry and Appearance from Multi-View Images
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6112_ECCV_2022_paper.php
AUTHORS: Radu Alexandru Rosu, Shunsuke Saito, Ziyan Wang, Chenglei Wu, Sven Behnke, Giljoo Nam
HIGHLIGHT: We present Neural Strands, a novel learning framework for modeling accurate hair geometry and appearance from multi-view image inputs.

1358, TITLE: GraphCSPN: Geometry-Aware Depth Completion via Dynamic GCNs
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6129_ECCV_2022_paper.php
AUTHORS: Xin Liu, Xiaofei Shao, Bo Wang, Yali Li, Shengjin Wang
HIGHLIGHT: In this work, we propose a Graph Convolution based Spatial Propagation Network (GraphCSPN) as a general approach for depth completion.

1359, TITLE: Objects Can Move: 3D Change Detection by Geometric Transformation Consistency
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6194_ECCV_2022_paper.php
AUTHORS: Aikaterini Adam, Torsten Sattler, Konstantinos Karantzalos, Tomas Pajdla
HIGHLIGHT: We propose a 3D object discovery method that is based only on scene changes.

1360, TITLE: Language-Grounded Indoor 3D Semantic Segmentation in the Wild
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6493_ECCV_2022_paper.php

AUTHORS:	Dávid Rozenberszki, Or Litany, Angela Dai
HIGHLIGHT:	This large number of class categories also induces a large natural class imbalance, both of which are challenging for existing 3D semantic segmentation methods. To learn more robust 3D features in this context, we propose a language-driven pre-training method to encourage learned 3D features that might have limited training examples to lie close to their pre-trained text embeddings.

1361, TITLE:	Beyond Periodicity: Towards a Unifying Framework for Activations in Coordinate-MLPs
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6571_ECCV_2022_paper.php
AUTHORS:	Sameera Ramasinghe, Simon Lucey
HIGHLIGHT:	In this paper, we attempt to broaden the current understanding of the effect of activations in coordinate-MLPs, and show that there exists a broader class of activations that are suitable for encoding signals.

1362, TITLE:	Deforming Radiance Fields with Cages
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6719_ECCV_2022_paper.php
AUTHORS:	Tianhan Xu, Tatsuya Harada
HIGHLIGHT:	In this paper, we propose a method that enables a new type of deformation of the radiance field: free-form radiance field deformation.

1363, TITLE:	FLEX: Extrinsic Parameters-Free Multi-View 3D Human Motion Reconstruction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6730_ECCV_2022_paper.php
AUTHORS:	Brian Gordon, Sigal Raab, Guy Azov, Raja Giryes, Daniel Cohen-Or
HIGHLIGHT:	We introduce FLEX (Free muLti-view rEconstruXion), an end-to-end extrinsic parameter-free multi-view model.

1364, TITLE:	MODE: Multi-View Omnidirectional Depth Estimation with 360&deg Cameras
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6884_ECCV_2022_paper.php
AUTHORS:	Ming Li, Xueqian Jin, Xuejiao Hu, Jingzhao Dai, Sidan Du, Yang Li
HIGHLIGHT:	In this paper, we propose a two-stage omnidirectional depth estimation framework with multi-view 360-degree cameras.

1365, TITLE:	GigaDepth: Learning Depth from Structured Light with Branching Neural Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7110_ECCV_2022_paper.php
AUTHORS:	Simon Schreiberhuber, Jean-Baptiste Weibel, Timothy Patten, Markus Vincze
HIGHLIGHT:	We propose to split the regression problem into smaller classification sub-problems in a coarse-to-fine manner with the use of a weight-adaptive layer that efficiently implements branching per-pixel Multilayer Perceptrons applied to features extracted by a Convolutional Neural Network.

1366, TITLE:	ActiveNeRF: Learning Where to See with Uncertainty Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7175_ECCV_2022_paper.php
AUTHORS:	Xuran Pan, Zihang Lai, Shiji Song, Gao Huang
HIGHLIGHT:	In this paper, we present a novel learning framework, \textit{ActiveNeRF}, aiming to model a 3D scene with a constrained input budget.

1367, TITLE:	PoserNet: Refining Relative Camera Poses Exploiting Object Detections
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7218_ECCV_2022_paper.php
AUTHORS:	Matteo Taiana, Matteo Toso, Stuart James, Alessio Del Bue
HIGHLIGHT:	We propose Pose Refiner Network (PoserNet) a light-weight Graph Neural Network to refine the approximate pair-wise relative camera poses.

1368, TITLE:	Gaussian Activated Neural Radiance Fields for High Fidelity Reconstruction \&amp Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7838_ECCV_2022_paper.php
AUTHORS:	Shin-Fang Chng, Sameera Ramasinghe, Jamie Sherrah, Simon Lucey
HIGHLIGHT:	We present Gaussian Activated Neural Radiance Fields (GARF), a new positional embedding-free neural radiance field architecture -- employing Gaussian activations -- that is competitive with the current state-of-the-art in terms of high fidelity reconstruction and pose estimation.

1369, TITLE:	Unbiased Gradient Estimation for Differentiable Surface Splatting via Poisson Sampling
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7886_ECCV_2022_paper.php
AUTHORS:	Jan U. Müller, Michael Weinmann, Reinhard Klein
HIGHLIGHT:	We propose an efficient and GPU-accelerated sampling framework which enables unbiased gradient approximation for differentiable point cloud rendering based on surface splatting.

1370, TITLE:	Towards Learning Neural Representations from Shadows
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/8081_ECCV_2022_paper.php
AUTHORS:	Kushagra Tiwary, Tzofi Klinghoffer, Ramesh Raskar
HIGHLIGHT:	We present a method that learns neural shadow fields, which are neural scene representations that are only learnt from the shadows present in the scene.

1371, TITLE:	Class-Incremental Novel Class Discovery
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/101_ECCV_2022_paper.php

AUTHORS: Subhankar Roy, Mingxuan Liu, Zhun Zhong, Nicu Sebe, Elisa Ricci
HIGHLIGHT: Inspired by rehearsal-based incremental learning methods, in this paper we propose a novel approach for class-iNCD which prevents forgetting of past information about the base classes by jointly exploiting base class feature prototypes and feature-level knowledge distillation.

1372, TITLE: Unknown-Oriented Learning for Open Set Domain Adaptation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/249_ECCV_2022_paper.php
AUTHORS: Jie Liu, Xiaoqing Guo, Yixuan Yuan
HIGHLIGHT: Though impressing performance, existing works neglect the complex semantic information and huge intra-category variation of unknown category, incapable of representing the complicated distribution. To overcome this, we propose a novel Unknown-Oriented Learning (UOL) framework for OSDA, and it is composed of three stages: true unknown excavation, false unknown suppression and known alignment.

1373, TITLE: Prototype-Guided Continual Adaptation for Class-Incremental Unsupervised Domain Adaptation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/268_ECCV_2022_paper.php
AUTHORS: Hongbin Lin, Yifan Zhang, Zhen Qiu, Shuaicheng Niu, Chuang Gan, Yanxia Liu, Mingkui Tan
HIGHLIGHT: This paper studies a new, practical but challenging problem, called Class-Incremental Unsupervised Domain Adaptation (CI-UDA), where the labeled source domain contains all classes, but the classes in the unlabeled target domain increase sequentially.

1374, TITLE: DecoupleNet: Decoupled Network for Domain Adaptive Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/303_ECCV_2022_paper.php
AUTHORS: Xin Lai, Zhuotao Tian, Xiaogang Xu, Yingcong Chen, Shu Liu, Hengshuang Zhao, Liwei Wang, Jiaya Jia
HIGHLIGHT: In this paper, we observe two main issues of existing domain-invariant learning framework.

1375, TITLE: Class-Agnostic Object Counting Robust to Intraclass Diversity
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/642_ECCV_2022_paper.php
AUTHORS: Shenjian Gong, Shanshan Zhang, Jian Yang, Dengxin Dai, Bernt Schiele
HIGHLIGHT: In this paper, we focus on classagnostic counting, i.e., counting object instances in an image by simply specifying a few exemplar boxes of interest.

1376, TITLE: Burn after Reading: Online Adaptation for Cross-Domain Streaming Data
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/721_ECCV_2022_paper.php
AUTHORS: Luyu Yang, Mingfei Gao, Zeyuan Chen, Ran Xu, Abhinav Shrivastava, Chetan Ramaiah
HIGHLIGHT: We propose an online framework called Burn After Reading, i.e. each online sample is permanently deleted after it is processed.

1377, TITLE: Mind the Gap in Distilling StyleGANs
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/776_ECCV_2022_paper.php
AUTHORS: Guodong Xu, Yuenan Hou, Ziwei Liu, Chen Change Loy
HIGHLIGHT: Our key insight is that the main challenge of StyleGAN distillation lies in the output discrepancy issue, where the teacher and student model yield different outputs given the same input latent code.

1378, TITLE: Improving Test-Time Adaptation via Shift-Agnostic Weight Regularization and Nearest Source Prototypes
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1026_ECCV_2022_paper.php
AUTHORS: Sungha Choi, Seunghan Yang, Seokeon Choi, Sungrack Yun
HIGHLIGHT: This paper proposes a novel test-time adaptation strategy that adjusts the model pre-trained on the source domain using only unlabeled online data from the target domain to alleviate the performance degradation due to the distribution shift between the source and target domains.

1379, TITLE: Learning Instance-Specific Adaptation for Cross-Domain Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1035_ECCV_2022_paper.php
AUTHORS: Yuliang Zou, Zizhao Zhang, Chun-Liang Li, Han Zhang, Tomas Pfister, Jia-Bin Huang
HIGHLIGHT: We propose a test-time adaptation method for cross-domain image segmentation.

1380, TITLE: RegionCL: Exploring Contrastive Region Pairs for Self-Supervised Representation Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1165_ECCV_2022_paper.php
AUTHORS: Yufei Xu, Qiming Zhang, Jing Zhang, Dacheng Tao
HIGHLIGHT: In this paper, we make the first attempt to demonstrate the importance of both regions in cropping from a complete perspective and the effectiveness of using both regions via designing a simple yet effective pretext task called Region Contrastive Learning (RegionCL).

1381, TITLE: Long-Tailed Class Incremental Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1243_ECCV_2022_paper.php
AUTHORS: Xialei Liu, Yu-Song Hu, Xu-Sheng Cao, Andrew D. Bagdanov, Ke Li, Ming-Ming Cheng
HIGHLIGHT: In this work we propose two long-tailed CIL scenarios, which we term Ordered and Shuffled LT-CIL.

1382, TITLE: DLCFT: Deep Linear Continual Fine-Tuning for General Incremental Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1576_ECCV_2022_paper.php
AUTHORS: Hyounguk Shon, Janghyeon Lee, Seung Hwan Kim, Junmo Kim

HIGHLIGHT:        In this paper, we explore an alternative framework to incremental learning where we continually fine-tune the model from a pre-trained representation.

1383, TITLE:        Adversarial Partial Domain Adaptation by Cycle Inconsistency
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1819_ECCV_2022_paper.php
AUTHORS:        Kun-Yu Lin, Jiaming Zhou, Yukun Qiu, Wei-Shi Zheng
HIGHLIGHT:        Accordingly, we propose to filter out source samples of outlier classes by weight suppression and align the distributions of shared classes between the source and target domains by adversarial learning.

1384, TITLE:        Combating Label Distribution Shift for Active Domain Adaptation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2012_ECCV_2022_paper.php
AUTHORS:        Sehyun Hwang, Sohyun Lee, Sungyeon Kim, Jungseul Ok, Suha Kwak
HIGHLIGHT:        We consider the problem of active domain adaptation (ADA) to unlabeled target data, of which subset is actively selected and labeled given a budget constraint.

1385, TITLE:        GIPSO: Geometrically Informed Propagation for Online Adaptation in 3D LiDAR Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2016_ECCV_2022_paper.php
AUTHORS:        Cristiano Saltori, Evgeny Krivosheev, St&eacute;phane Lathuili&egrave;re, Nicu Sebe, Fabio Galasso, Giuseppe Fiameni, Elisa Ricci, Fabio Poiesi
HIGHLIGHT:        Most approaches in the literature neglect an important aspect, i.e., how to deal with domain shift when handling dynamic scenes. This can significantly hinder the navigation capabilities of self-driving vehicles. This paper advances the state of the art in this research field.

1386, TITLE:        CoSMix: Compositional Semantic Mix for Domain Adaptation in 3D LiDAR Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2050_ECCV_2022_paper.php
AUTHORS:        Cristiano Saltori, Fabio Galasso, Giuseppe Fiameni, Nicu Sebe, Elisa Ricci, Fabio Poiesi
HIGHLIGHT:        We propose a new approach of sample mixing for point cloud UDA, namely Compositional Semantic Mix (CoSMix), the first UDA approach for point cloud segmentation based on sample mixing.

1387, TITLE:        A Unified Framework for Domain Adaptive Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2861_ECCV_2022_paper.php
AUTHORS:        Donghyun Kim, Kaihong Wang, Kate Saenko, Margrit Betke, Stan Sclaroff
HIGHLIGHT:        In this paper, we investigate the problem of domain adaptive 2D pose estimation that transfers knowledge learned on a synthetic source domain to a target domain without supervision.

1388, TITLE:        A Broad Study of Pre-training for Domain Generalization and Adaptation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2862_ECCV_2022_paper.php
AUTHORS:        Donghyun Kim, Kaihong Wang, Stan Sclaroff, Kate Saenko
HIGHLIGHT:        In this paper, we provide a broad study and in-depth analysis of pre-training for domain adaptation and generalization, namely: network architectures, size, pre-training loss, and datasets.

1389, TITLE:        Prior Knowledge Guided Unsupervised Domain Adaptation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2872_ECCV_2022_paper.php
AUTHORS:        Tao Sun, Cheng Lu, Haibin Ling
HIGHLIGHT:        The waive of labels in the target domain makes Unsupervised Domain Adaptation (UDA) an attractive technique in many real-world applications, though it also brings great challenges as model adaptation becomes harder without labeled target data. In this paper, we address this issue by seeking compensation from target domain prior knowledge, which is often (partially) available in practice, e.g., from human expertise.

1390, TITLE:        GCISG: Guided Causal Invariant Learning for Improved Syn-to-Real Generalization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3094_ECCV_2022_paper.php
AUTHORS:        Gilhyun Nam, Gyeongjae Choi, Kyungmin Lee
HIGHLIGHT:        In this paper, we characterize the domain gap by using a causal framework for data generation.

1391, TITLE:        AcroFOD: An Adaptive Method for Cross-Domain Few-Shot Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3661_ECCV_2022_paper.php
AUTHORS:        Yipeng Gao, Lingxiao Yang, Yunmu Huang, Song Xie, Shiyong Li, Wei-Shi Zheng
HIGHLIGHT:        There exists two significant challenges: (1) Highly insufficient target domain data (2) Potential over-adaptation and misleading caused by inappropriately amplified target samples without any restriction. To address these challenges, we propose an adaptive method consisting of two parts.

1392, TITLE:        Unsupervised Domain Adaptation for One-Stage Object Detector Using Offsets to Bounding Box
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3958_ECCV_2022_paper.php
AUTHORS:        Jayeon Yoo, Inseop Chung, Nojun Kwak
HIGHLIGHT:        With a very simple and effective conditioning method, we propose OADA (Offset-Aware Domain Adaptive object detector) that achieves state-of-the-art performances in various experimental settings.

1393, TITLE:        Visual Prompt Tuning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4175_ECCV_2022_paper.php
AUTHORS:        Menglin Jia, Luming Tang, Bor-Chun Chen, Claire Cardie, Serge Belongie, Bharath Hariharan, Ser-Nam Lim

HIGHLIGHT: This paper introduces Visual Prompt Tuning (VPT) as an efficient and effective alternative to full fine-tuning for large-scale Transformer models in vision.

1394, TITLE: Quasi-Balanced Self-Training on Noise-Aware Synthesis of Object Point Clouds for Closing Domain Gap
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4534_ECCV_2022_paper.php
AUTHORS: Yongwei Chen, Zihao Wang, Longkun Zou, Ke Chen, Kui Jia
HIGHLIGHT: To this end, we propose an integrated scheme consisting of physically realistic synthesis of object point clouds via rendering stereo images via projection of speckle patterns onto CAD models and a novel quasi-balanced self-training designed for more balanced data distribution by sparsity-driven selection of pseudo labeled samples for long tailed classes.

1395, TITLE: Interpretable Open-Set Domain Adaptation via Angular Margin Separation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4962_ECCV_2022_paper.php
AUTHORS: Xinhao Li, Jingjing Li, Zhekai Du, Lei Zhu, Wen Li
HIGHLIGHT: Following that line, in this work, we propose a representation learning framework termed Angular Margin Separation (AMS) that unveils the power of discriminative and robust representation for both open-set domain adaptation and cross-domain semantic recovery.

1396, TITLE: TACS: Taxonomy Adaptive Cross-Domain Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4977_ECCV_2022_paper.php
AUTHORS: Rui Gong, Martin Danelljan, Dengxin Dai, Danda Pani Paudel, Ajad Chhatkuli, Fisher Yu, Luc Van Gool
HIGHLIGHT: In many real-world settings, the target domain task requires a different taxonomy than the one imposed by the source domain. We therefore introduce the more general taxonomy adaptive cross-domain semantic segmentation (TACS) problem, allowing for inconsistent taxonomies between the two domains.

1397, TITLE: Prototypical Contrast Adaptation for Domain Adaptive Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4992_ECCV_2022_paper.php
AUTHORS: Zhengkai Jiang, Yuxi Li, Ceyuan Yang, Peng Gao, Yabiao Wang, Ying Tai, Chengjie Wang
HIGHLIGHT: In this paper, we present Prototypical Contrast Adaptation (ProCA), a simple and efficient contrastive learning method for unsupervised domain adaptive semantic segmentation.

1398, TITLE: RBC: Rectifying the Biased Context in Continual Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5049_ECCV_2022_paper.php
AUTHORS: Hanbin Zhao, Fengyu Yang, Xinghe Fu, Xi Li
HIGHLIGHT: To tackle the obstacle, we propose a biased-context-rectified CSS framework with a context-rectified image-duplet learning scheme and a biased-context-insensitive consistency loss.

1399, TITLE: Factorizing Knowledge in Neural Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5076_ECCV_2022_paper.php
AUTHORS: Xingyi Yang, Jingwen Ye, Xinchao Wang
HIGHLIGHT: In this paper, we explore a novel and ambitious knowledge-transfer task, termed Knowledge Factorization (KF).

1400, TITLE: Contrastive Vicinal Space for Unsupervised Domain Adaptation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5082_ECCV_2022_paper.php
AUTHORS: Jaemin Na, Dongyoon Han, Hyung Jin Chang, Wonjun Hwang
HIGHLIGHT: In this paper, we propose an instance-wise minimax strategy that minimizes the entropy of high uncertainty instances in the vicinal space to tackle the stated problem.

1401, TITLE: Cross-Modal Knowledge Transfer without Task-Relevant Source Data
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5271_ECCV_2022_paper.php
AUTHORS: Sk Miraj Ahmed, Suhas Lohit, Kuan-Chuan Peng, Michael J. Jones, Amit K. Roy-Chowdhury
HIGHLIGHT: For reasons like memory and privacy, it may not be possible to access the source data, and knowledge transfer needs to work with only the source models. We describe an effective solution, SOCKET: SOurce-free Cross-modal KnowledgE Transfer for this challenging task of transferring knowledge from one source modality to a different target modality without access to task-relevant source data.

1402, TITLE: Online Domain Adaptation for Semantic Segmentation in Ever-Changing Conditions
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5541_ECCV_2022_paper.php
AUTHORS: Theodoros Panagiotakopoulos, Pier Luigi Dovesi, Linus Häumlrenstam-Nielsen, Matteo Poggi
HIGHLIGHT: In this paper, we tackle Online Domain Adaptation (OnDA) for semantic segmentation.

1403, TITLE: Source-Free Video Domain Adaptation by Learning Temporal Consistency for Action Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5619_ECCV_2022_paper.php
AUTHORS: Yuecong Xu, Jianfei Yang, Haozhi Cao, Keyu Wu, Min Wu, Zhenghua Chen
HIGHLIGHT: In this paper, we propose a novel Attentive Temporal Consistent Network (ATCoN) to address SFVDA by learning temporal consistency, guaranteed by two novel consistency objectives, namely feature consistency and source prediction consistency, performed across local temporal features.

1404, TITLE: BMD: A General Class-Balanced Multicentric Dynamic Prototype Strategy for Source-Free Domain Adaptation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5922_ECCV_2022_paper.php
AUTHORS: Sanqing Qu, Guang Chen, Jing Zhang, Zhijun Li, Wei He, Dacheng Tao

HIGHLIGHT: In addition, we found that a monocentric feature prototype may be ineffective to represent each category and introduce negative transfer, especially for those hard-transfer data. To address these issues, we propose a general class-Balanced Multicentric Dynamic prototype (BMD) strategy for the SFDA task.

1405, TITLE: Generalized Brain Image Synthesis with Transferable Convolutional Sparse Coding Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6123_ECCV_2022_paper.php
AUTHORS: Yawen Huang, Feng Zheng, Xu Sun, Yuexiang Li, Ling Shao, Yefeng Zheng
HIGHLIGHT: In this paper, we present a novel generalized brain image synthesis method, powered by our transferable convolutional sparse coding networks, to address the lack of interpretable cross-modal medical image representation learning.

1406, TITLE: Incomplete Multi-View Domain Adaptation via Channel Enhancement and Knowledge Transfer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6247_ECCV_2022_paper.php
AUTHORS: Haifeng Xia, Pu Wang, Zhengming Ding
HIGHLIGHT: This scenario is defined as incomplete multi-view domain adaptation (IMVDA), which considers that the source domain consists of multi-view data while the target domain only includes single-view instances. To overcome this practical demand, this paper proposes a novel Channel Enhancement and Knowledge Transfer (CEKT) framework with two modules.

1407, TITLE: DistPro: Searching a Fast Knowledge Distillation Process via Meta Optimization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6323_ECCV_2022_paper.php
AUTHORS: Xueqing Deng, Dawei Sun, Shawn Newsam, Peng Wang
HIGHLIGHT: In this paper, we propose DistPro, a novel framework which searches for an optimal KD process via differentiable meta-learning.

1408, TITLE: ML-BPM: Multi-Teacher Learning with Bidirectional Photometric Mixing for Open Compound Domain Adaptation in Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6380_ECCV_2022_paper.php
AUTHORS: Fei Pan, Sungsu Hur, Seokju Lee, Junsik Kim, In So Kweon
HIGHLIGHT: In this work, we introduce a multi-teacher framework with bidirectional photometric mixing to adapt to every target subdomain separately.

1409, TITLE: PACTran: PAC-Bayesian Metrics for Estimating the Transferability of Pretrained Models to Classification Tasks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6568_ECCV_2022_paper.php
AUTHORS: Nan Ding, Xi Chen, Tomer Levinboim, Soravit Changpinyo, Radu Soricut
HIGHLIGHT: In this paper we present PACTran, a theoretically grounded family of metrics for pretrained model selection and transferability measurement.

1410, TITLE: Personalized Education: Blind Knowledge Distillation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6615_ECCV_2022_paper.php
AUTHORS: Xiang Deng, Jian Zheng, Zhongfei Zhang
HIGHLIGHT: By designing exploratory experiments with theoretical analysis, we find that model capacity differences are not necessarily the root reason instead the distillation data matter when the student capacity is greater than a threshold. In light of this, we propose personalized education (PE) to first help each student adaptively find its own blind knowledge region (BKR) where the student has not captured the knowledge from the teacher, and then teach the student on this region.

1411, TITLE: Not All Models Are Equal: Predicting Model Transferability in a Self-Challenging Fisher Space
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6972_ECCV_2022_paper.php
AUTHORS: Wenqi Shao, Xun Zhao, Yixiao Ge, Zhaoyang Zhang, Lei Yang, Xiaogang Wang, Ying Shan, Ping Luo
HIGHLIGHT: This paper addresses an important problem of ranking the pre-trained deep neural networks and screening the most transferable ones for downstream tasks.

1412, TITLE: How Stable Are Transferability Metrics Evaluations?
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7061_ECCV_2022_paper.php
AUTHORS: Andrea Agostinelli, Michal P&aacute;ndy, Jasper Uijlings, Thomas Mensink, Vittorio Ferrari
HIGHLIGHT: In this paper we conduct a large-scale study by systematically constructing a broad range of 715k experimental setup variations.

1413, TITLE: Attention Diversification for Domain Generalization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7710_ECCV_2022_paper.php
AUTHORS: Rang Meng, Xianfeng Li, Weijie Chen, Shicai Yang, Jie Song, Xinchao Wang, Lei Zhang, Mingli Song, Di Xie, Shiliang Pu
HIGHLIGHT: After investigating this issue from the perspective of shortcut learning, we find the devils lie in the fact that models trained on different domains merely bias to different domain-specific features yet overlook diverse task-related features. Under this guidance, a novel Attention Diversification framework is proposed, in which Intra-Model and Inter-Model Attention Diversification Regularization are collaborated to reassign appropriate attention to diverse task-related features.

1414, TITLE: ESS: Learning Event-Based Semantic Segmentation from Still Images
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7785_ECCV_2022_paper.php
AUTHORS: Zhaoning Sun, Nico Messikommer, Daniel Gehrig, Davide Scaramuzza

HIGHLIGHT: In this work, we introduce ESS (Event-based Semantic Segmentation), which tackles this problem by directly transferring the semantic segmentation task from existing labeled image datasets to unlabeled events via unsupervised domain adaptation (UDA).

1415, TITLE: An Efficient Spatio-Temporal Pyramid Transformer for Action Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/433_ECCV_2022_paper.php
AUTHORS: Yuetian Weng, Zizheng Pan, Mingfei Han, Xiaojun Chang, Bohan Zhuang
HIGHLIGHT: To this end, we present an efficient hierarchical Spatio-Temporal Pyramid Transformer (STPT) for action detection, building upon the fact that the early self-attention layers in Transformers still focus on local patterns.

1416, TITLE: Human Trajectory Prediction via Neural Social Physics
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/609_ECCV_2022_paper.php
AUTHORS: Jiangbei Yue, Dinesh Manocha, He Wang
HIGHLIGHT: In this paper, we propose a new method combining both methodologies based on a new Neural Differential Equation model.

1417, TITLE: Towards Open Set Video Anomaly Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/629_ECCV_2022_paper.php
AUTHORS: Yuansheng Zhu, Wentao Bao, Qi Yu
HIGHLIGHT: Specifically, we propose to use graph neural networks and triplet loss to learn discriminative features for training the EDL classifier, where the EDL is capable of identifying the unknown anomalies by quantifying the uncertainty.

1418, TITLE: ECLIPSE: Efficient Long-Range Video Retrieval Using Sight and Sound
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/735_ECCV_2022_paper.php
AUTHORS: Yan-Bo Lin, Jie Lei, Mohit Bansal, Gedas Bertasius
HIGHLIGHT: We introduce an audiovisual method for long-range text-to-video retrieval.

1419, TITLE: Joint-Modal Label Denoising for Weakly-Supervised Audio-Visual Video Parsing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/785_ECCV_2022_paper.php
AUTHORS: Haoyue Cheng, Zhaoyang Liu, Hang Zhou, Chen Qian, Wayne Wu, Limin Wang
HIGHLIGHT: In this work, we propose a training strategy to identify and remove modality-specific noisy labels dynamically.

1420, TITLE: Less than Few: Self-Shot Video Instance Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/839_ECCV_2022_paper.php
AUTHORS: Pengwan Yang, Yuki M. Asano, Pascal Mettes, Cees G. M. Snoek
HIGHLIGHT: The goal of this paper is to bypass the need for labelled examples in few-shot video understanding at run time.

1421, TITLE: Adaptive Face Forgery Detection in Cross Domain
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/945_ECCV_2022_paper.php
AUTHORS: Luchuan Song, Zheng Fang, Xiaodan Li, Xiaoyi Dong, Zhenchao Jin, Yuefeng Chen, Siwei Lyu
HIGHLIGHT: In addition to this, the inconsistency problem in the previous methods is significantly exacerbated due to the diversities among various forgery methods. To address this problem, we propose a novel deep learning framework for face forgery detection in cross domain.

1422, TITLE: Real-Time Online Video Detection with Temporal Smoothing Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1055_ECCV_2022_paper.php
AUTHORS: Yue Zhao, Philipp Kr&auml,henb&uuml,hl
HIGHLIGHT: Unfortunately, in most existing methods, the computational complexity grows linearly or quadratically with the length of the considered dynamics. This issue is particularly pronounced in transformer-based architectures. To address this issue, we reformulate the cross-attention in a video transformer through the lens of kernel and apply two kinds of temporal smoothing kernel: A box kernel or a Laplace kernel.

1423, TITLE: TALLFormer: Temporal Action Localization with a Long-Memory Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1084_ECCV_2022_paper.php
AUTHORS: Feng Cheng, Gedas Bertasius
HIGHLIGHT: This issue becomes even worse with the recent video transformer models, many of which have quadratic memory complexity. To address these issues, we propose TALLFormer, a memory-efficient and end-to-end trainable Temporal Action Localization Transformer with Long-term memory.

1424, TITLE: Mining Relations among Cross-Frame Affinities for Video Semantic Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1412_ECCV_2022_paper.php
AUTHORS: Guolei Sun, Yun Liu, Hao Tang, Ajad Chhatkuli, Le Zhang, Luc Van Gool
HIGHLIGHT: Inspired by traditional feature processing, we propose Single-scale Affinity Refinement (SAR) and Multi-scale Affinity Aggregation (MAA).

1425, TITLE: TLDW? Summarizing Instructional Videos with Task Relevance \&amp Cross-Modal Saliency
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1541_ECCV_2022_paper.php
AUTHORS: Medhini Narasimhan, Arsha Nagrani, Chen Sun, Michael Rubinstein, Trevor Darrell, Anna Rohrbach, Cordelia Schmid
HIGHLIGHT: In this work, we focus on summarizing instructional videos, an under-explored area of video summarization.

1426, TITLE: Rethinking Learning Approaches for Long-Term Action Anticipation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1544_ECCV_2022_paper.php
AUTHORS: Megha Nawhal, Akash Abdu Jyothi, Greg Mori
HIGHLIGHT: We introduce ANTICIPATR which performs long-term action anticipation leveraging segment-level representations learned using individual segments from different activities, in addition to a video-level representation.

1427, TITLE: DualFormer: Local-Global Stratified Transformer for Efficient Video Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1596_ECCV_2022_paper.php
AUTHORS: Yuxuan Liang, Pan Zhou, Roger Zimmermann, Shuicheng Yan
HIGHLIGHT: In this paper, we present a new transformer architecture termed DualFormer, which can efficiently perform space-time attention for video recognition.

1428, TITLE: Hierarchical Feature Alignment Network for Unsupervised Video Object Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1676_ECCV_2022_paper.php
AUTHORS: Gensheng Pei, Fumin Shen, Yazhou Yao, Guo-Sen Xie, Zhenmin Tang, Jinhui Tang
HIGHLIGHT: However, optical flow is intrinsically an instantaneous velocity of all pixels among consecutive frames, thus making the motion features not aligned well with the primary objects among the corresponding frames. To solve the above challenge, we propose a concise, practical, and efficient architecture for appearance and motion feature alignment, dubbed hierarchical feature alignment network (HFAN).

1429, TITLE: PAC-Net: Highlight Your Video via History Preference Modeling
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1853_ECCV_2022_paper.php
AUTHORS: Hang Wang, Penghao Zhou, Chong Zhou, Zhao Zhang, Xing Sun
HIGHLIGHT: In this work, we propose a Preference-Adaptive Classification (PAC-Net) framework, which can model users' personalized preferences from their user history.

1430, TITLE: How Severe Is Benchmark-Sensitivity in Video Self-Supervised Learning?
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1980_ECCV_2022_paper.php
AUTHORS: Fida Mohammad Thoker, Hazel Doughty, Piyush Bagad, Cees G. M. Snoek
HIGHLIGHT: In this paper, we investigate how sensitive video self-supervised learning is to the current conventional benchmark and whether methods generalize beyond the canonical evaluation setting.

1431, TITLE: A Sliding Window Scheme for Online Temporal Action Localization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2307_ECCV_2022_paper.php
AUTHORS: Young Hwi Kim, Hyolim Kang, Seon Joo Kim
HIGHLIGHT: To this end, we propose Online Anchor Transformer (OAT) to extend the anchor-based action localization model to the online setting.

1432, TITLE: ERA: Expert Retrieval and Assembly for Early Action Prediction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2327_ECCV_2022_paper.php
AUTHORS: Lin Geng Foo, Tianjiao Li, Hossein Rahmani, Qiuhong Ke, Jun Liu
HIGHLIGHT: In this paper, we propose a novel Expert Retrieval and Assembly (ERA) module that retrieves and assembles a set of experts most specialized at using discriminative subtle differences, to distinguish an input sample from other highly similar samples.

1433, TITLE: Dual Perspective Network for Audio-Visual Event Localization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2538_ECCV_2022_paper.php
AUTHORS: Varshanth Rao, Md Ibrahim Khalil, Haoda Li, Peng Dai, Juwei Lu
HIGHLIGHT: Past works have traditionally viewed videos as temporally sequenced multi-modal streams. We improve and extend on this view by proposing a novel architecture, the Dual Perspective Network (DPNet), that - (1) additionally operates on an intuitive graph perspective of a video to simultaneously facilitate cross-modal guidance and short-term temporal aggregation using a Graph NeuralNetwork (GNN), (2) deploys a Temporal Convolutional Network (TCN)to achieve long-term dependency resolution, and (3) encourages interactive feature learning using an acyclic feature refinement process that alternates between the GNN and TCN.

1434, TITLE: NSNet: Non-Saliency Suppression Sampler for Efficient Video Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2652_ECCV_2022_paper.php
AUTHORS: Boyang Xia, Wenhao Wu, Haoran Wang, Rui Su, Dongliang He, Haosen Yang, Xiaoran Fan, Wanli Ouyang
HIGHLIGHT: Taking all frames as positive samples, few of them pay attention to the discrimination between positive samples (salient frames) and negative samples (non-salient frames) in supervisions. To fill this gap, in this paper, we propose a novel Non-saliency Suppression Network (NSNet), which effectively suppresses the responses of non-salient frames.

1435, TITLE: Video Activity Localisation with Uncertainties in Temporal Boundary
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2818_ECCV_2022_paper.php
AUTHORS: Jiabo Huang, Hailin Jin, Shaogang Gong, Yang Liu
HIGHLIGHT: Such uncertainties in temporal labelling are currently ignored in model training, resulting in learning mismatched video-text correlation with poor generalisation in test. In this work, we solve this problem by introducing Elastic Moment Bounding (EMB) to accommodate flexible and adaptive activity temporal boundaries towards modelling universally interpretable video-text correlation with tolerance to underlying temporal uncertainties in pre-fixed annotations.

1436, TITLE: Temporal Saliency Query Network for Efficient Video Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3101_ECCV_2022_paper.php
AUTHORS: Boyang Xia, Zhihao Wang, Wenhao Wu, Haoran Wang, Jungong Han
HIGHLIGHT: To achieve it, we propose a Temporal Saliency Query Network (TSQNet) that includes two instantiations of the TSQ mechanism based on visual appearance similarities and textual event-object relations.

1437, TITLE: Efficient One-Stage Video Object Detection by Exploiting Temporal Consistency
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3247_ECCV_2022_paper.php
AUTHORS: Guanxiong Sun, Yang Hua, Guosheng Hu, Neil Robertson
HIGHLIGHT: Based on the analysis, we present a simple yet efficient framework to address the computational bottlenecks and achieve efficient one-stage VOD by exploiting the temporal consistency in video frames.

1438, TITLE: Leveraging Action Affinity and Continuity for Semi-Supervised Temporal Action Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3254_ECCV_2022_paper.php
AUTHORS: Guodong Ding, Angela Yao
HIGHLIGHT: We present a semi-supervised learning approach to the temporal action segmentation task.

1439, TITLE: Spotting Temporally Precise, Fine-Grained Events in Video
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3387_ECCV_2022_paper.php
AUTHORS: James Hong, Haotian Zhang, Micha&euml;l Gharbi, Matthew Fisher, Kayvon Fatahalian
HIGHLIGHT: In response, we propose E2E-Spot, a compact, end-to-end model that performs well on the precise spotting task and can be trained quickly on a single GPU.

1440, TITLE: Unified Fully and Timestamp Supervised Temporal Action Segmentation via Sequence to Sequence Translation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3672_ECCV_2022_paper.php
AUTHORS: Nadine Behrmann, S. Alireza Golestaneh, Zico Kolter, J&uuml;rgen Gall, Mehdi Noroozi
HIGHLIGHT: This paper introduces a unified framework for video action segmentation via sequence to sequence (seq2seq) translation in a fully and timestamp supervised setup.

1441, TITLE: Efficient Video Transformers with Spatial-Temporal Token Selection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3837_ECCV_2022_paper.php
AUTHORS: Junke Wang, Xitong Yang, Hengduo Li, Li Liu, Zuxuan Wu, Yu-Gang Jiang
HIGHLIGHT: In this paper, we present STTS, a token selection framework that dynamically selects a few informative tokens in both temporal and spatial dimensions conditioned on input video samples.

1442, TITLE: Long Movie Clip Classification with State-Space Video Models
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4136_ECCV_2022_paper.php
AUTHORS: Md Mohaiminul Islam, Gedas Bertasius
HIGHLIGHT: Instead, we propose ViS4mer, an efficient long-range video model that combines the strengths of self-attention and the recently introduced structured state-space sequence (S4) layer.

1443, TITLE: Prompting Visual-Language Models for Efficient Video Understanding
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4310_ECCV_2022_paper.php
AUTHORS: Chen Ju, Tengda Han, Kunhao Zheng, Ya Zhang, Weidi Xie
HIGHLIGHT: This paper presents a simple but strong baseline to efficiently adapt the pre-trained I-VL model for video understanding tasks, with minimal training.

1444, TITLE: Asymmetric Relation Consistency Reasoning for Video Relation Grounding
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4416_ECCV_2022_paper.php
AUTHORS: Huan Li, Ping Wei, Jiapeng Li, Zeyu Ma, Jiahui Shang, Nanning Zheng
HIGHLIGHT: In this paper, we propose a novel Asymmetric Relation Consistency (ARC) reasoning model to solve the video relation grounding problem.

1445, TITLE: Self-Supervised Social Relation Representation for Human Group Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4640_ECCV_2022_paper.php
AUTHORS: Jiacheng Li, Ruize Han, Haomin Yan, Zekun Qian, Wei Feng, Song Wang
HIGHLIGHT: In this paper, we propose a new two-stage multi-head framework for human group detection.

1446, TITLE: K-Centered Patch Sampling for Efficient Video Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4672_ECCV_2022_paper.php
AUTHORS: Seong Hyeon Park, Jihoon Tack, Byeongho Heo, Jung-Woo Ha, Jinwoo Shin
HIGHLIGHT: For decades, it has been a common practice to choose a subset of video frames for reducing the computational burden of a video understanding model. In this paper, we argue that this popular heuristic might be sub-optimal under recent transformer-based models.

1447, TITLE: A Deep Moving-Camera Background Model
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4790_ECCV_2022_paper.php
AUTHORS: Guy Erez, Ron Shapira Weber, Oren Freifeld
HIGHLIGHT: This paper proposes a new method, called DeepMCBM, that eliminates all the aforementioned issues and achieves state-of-the-art results.

1448, TITLE: GraphVid: It Only Takes a Few Nodes to Understand a Video
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4861_ECCV_2022_paper.php
AUTHORS: Eitan Kosman, Dotan Di Castro
HIGHLIGHT: We propose a concise representation of videos that encode perceptually meaningful features into graphs.

1449, TITLE: Delta Distillation for Efficient Video Processing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5020_ECCV_2022_paper.php
AUTHORS: Amirhossein Habibian, Haitam Ben Yahia, Davide Abati, Efstratios Gavves, Fatih Porikli
HIGHLIGHT: This paper aims to accelerate video stream processing, such as object detection and semantic segmentation, by leveraging the temporal redundancies that exist between video frames.

1450, TITLE: MorphMLP: An Efficient MLP-Like Backbone for Spatial-Temporal Representation Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5207_ECCV_2022_paper.php
AUTHORS: David Junhao Zhang, Kunchang Li, Yali Wang, Yunpeng Chen, Shashwat Chandra, Yu Qiao, Luoqi Liu, Mike Zheng Shou
HIGHLIGHT: However, whether it is possible to build a generic MLP-Like architecture on video domain has not been explored, due to complex spatial-temporal modeling with large computation burden. To fill this gap, we present an efficient self-attention free backbone, namely MorphMLP, which flexibly leverages the concise Fully-Connected (FC) layer for video representation learning.

1451, TITLE: COMPOSER: Compositional Reasoning of Group Activity in Videos with Keypoint-Only Modality
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5270_ECCV_2022_paper.php
AUTHORS: Honglu Zhou, Asim Kadav, Aviv Shamsian, Shijie Geng, Farley Lai, Long Zhao, Ting Liu, Mubbasir Kapadia, Hans Peter Graf
HIGHLIGHT: We propose COMPOSER, a Multiscale Transformer based architecture that performs attention-based reasoning over tokens at each scale and learns group activity compositionally.

1452, TITLE: E-NeRV: Expedite Neural Video Representation with Disentangled Spatial-Temporal Context
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5463_ECCV_2022_paper.php
AUTHORS: Zizhang Li, Mengmeng Wang, Huaijin Pi, Kechun Xu, Jianbiao Mei, Yong Liu
HIGHLIGHT: In this paper, we propose E-NeRV, which dramatically expedites NeRV by decomposing the image-wise implicit neural representation into separate spatial and temporal context.

1453, TITLE: TDViT: Temporal Dilated Video Transformer for Dense Video Tasks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5559_ECCV_2022_paper.php
AUTHORS: Guanxiong Sun, Yang Hua, Guosheng Hu, Neil Robertson
HIGHLIGHT: Specifically, these models are expensive for deployment, less effective when handling redundant frames and difficult to capture long-range temporal correlations. To overcome these issues, we propose a Temporal Dilated Video Transformer (TDViT) that consists of carefully-designed temporal dilated transformer blocks (TDTB).

1454, TITLE: Semi-Supervised Learning of Optical Flow by Flow Supervisor
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5591_ECCV_2022_paper.php
AUTHORS: Woobin Im, Sebin Lee, Sung-Eui Yoon
HIGHLIGHT: Specifically, we propose a flow supervisor for self-supervision, which consists of parameter separation and a student output connection.

1455, TITLE: Flow Graph to Video Grounding for Weakly-Supervised Multi-step Localization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6132_ECCV_2022_paper.php
AUTHORS: Nikita Dvornik, Isma Hadji, Hai Pham, Dhaivat Bhatt, Brais Martinez, Afsaneh Fazly, Allan D. Jepson
HIGHLIGHT: In this work, we consider the problem of weakly-supervised multi-step localization in instructional videos.To this end, we introduce the new problem of flow graph to video grounding.

1456, TITLE: Deep 360&deg; Optical Flow Estimation Based on Multi-Projection Fusion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6182_ECCV_2022_paper.php
AUTHORS: Yiheng Li, Connelly Barnes, Kun Huang, Fang-Lue Zhang
HIGHLIGHT: To address the distortions of panoramic representations when applying convolutional neural networks, we propose a novel multi-projection fusion framework that fuses the optical flow predicted by the models trained using different projection methods.

1457, TITLE: MaCLR: Motion-Aware Contrastive Learning of Representations for Videos
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6218_ECCV_2022_paper.php
AUTHORS: Fanyi Xiao, Joseph Tighe, Davide Modolo
HIGHLIGHT: We present MaCLR, a novel method to explicitly perform cross-modal self-supervised video representations learning from visual and motion modalities.

1458, TITLE: Learning Long-Term Spatial-Temporal Graphs for Active Speaker Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6599_ECCV_2022_paper.php
AUTHORS: Kyle Min, Sourya Roy, Subarna Tripathi, Tanaya Guha, Somdeb Majumdar

HIGHLIGHT: In this paper, we present SPELL, a novel spatial-temporal graph learning framework that can solve complex tasks such as ASD.

1459, TITLE: Frozen CLIP Models Are Efficient Video Learners
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6715_ECCV_2022_paper.php
AUTHORS: Ziyi Lin, Shijie Geng, Renrui Zhang, Peng Gao, Gerard de Melo, Xiaogang Wang, Jifeng Dai, Yu Qiao, Hongsheng Li
HIGHLIGHT: In this paper, we present Efficient Video Learning (EVL) - an efficient framework for directly training high-quality video recognition models with frozen CLIP features.

1460, TITLE: PIP: Physical Interaction Prediction via Mental Simulation with Span Selection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6912_ECCV_2022_paper.php
AUTHORS: Jiafei Duan, Samson Yu, Soujanya Poria, Bihan Wen, Cheston Tan
HIGHLIGHT: With these motivations, we propose a novel scheme: \textbf{P}hysical \textbf{I}nteraction \textbf{P}rediction via Mental Simulation with Span Selection (PIP).

1461, TITLE: Panoramic Vision Transformer for Saliency Detection in 360&deg Videos
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7174_ECCV_2022_paper.php
AUTHORS: Heeseung Yun, Sehun Lee, Gunhee Kim
HIGHLIGHT: We present a new framework named Panoramic Vision Transformer (PAVER).

1462, TITLE: Bayesian Tracking of Video Graphs Using Joint Kalman Smoothing and Registration
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7248_ECCV_2022_paper.php
AUTHORS: Aditi Basu Bal, Ramy Mounir, Sathyanarayanan Aakur, Sudeep Sarkar, Anuj Srivastava
HIGHLIGHT: This paper develops a Kalman-smoothing method for estimating graphs from noisy, cluttered, and incomplete data.

1463, TITLE: Motion Sensitive Contrastive Learning for Self-Supervised Video Representation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7562_ECCV_2022_paper.php
AUTHORS: Jingcheng Ni, Nan Zhou, Jie Qin, Qian Wu, Junqi Liu, Boxun Li, Di Huang
HIGHLIGHT: In this paper, we propose Motion Sensitive Contrastive Learning (MSCL) that injects the motion information captured by optical flows into RGB frames to strengthen feature learning.

1464, TITLE: Dynamic Temporal Filtering In Video Models
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7756_ECCV_2022_paper.php
AUTHORS: Fuchen Long, Zhaofan Qiu, Yingwei Pan, Ting Yao, Chong-Wah Ngo, Tao Mei
HIGHLIGHT: In this paper, we present a new recipe of temporal feature learning, namely Dynamic Temporal Filter (DTF), that novelly performs spatial-aware temporal modeling in frequency domain with large temporal receptive field.

1465, TITLE: Tip-Adapter: Training-Free Adaption of CLIP for Few-Shot Classification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/154_ECCV_2022_paper.php
AUTHORS: Renrui Zhang, Wei Zhang, Rongyao Fang, Peng Gao, Kunchang Li, Jifeng Dai, Yu Qiao, Hongsheng Li
HIGHLIGHT: In this paper, we propose a training-free adaption method for CLIP to conduct few-shot classification, termed as Tip-Adapter, which not only inherits the training-free advantage of zero-shot CLIP but also performs comparably to those training-required approaches.

1466, TITLE: Temporal Lift Pooling for Continuous Sign Language Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/160_ECCV_2022_paper.php
AUTHORS: Lianyu Hu, Liqing Gao, Zekang Liu, Wei Feng
HIGHLIGHT: In this paper, we derive temporal lift pooling (TLP) from the Lifting Scheme in signal processing to intelligently downsample features of different temporal hierarchies.

1467, TITLE: MORE: Multi-Order RElation Mining for Dense Captioning in 3D Scenes
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/167_ECCV_2022_paper.php
AUTHORS: Yang Jiao, Shaoxiang Chen, Zequn Jie, Jingjing Chen, Lin Ma, Yu-Gang Jiang
HIGHLIGHT: In this paper, aiming at improving 3D dense captioning via capturing and utilizing the complex relations in the 3D scene, we propose MORE, a Multi-Order RElation mining model, to support generating more descriptive and comprehensive captions.

1468, TITLE: SiRi: A Simple Selective Retraining Mechanism for Transformer-Based Visual Grounding
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/283_ECCV_2022_paper.php
AUTHORS: Mengxue Qu, Yu Wu, Wu Liu, Qiqi Gong, Xiaodan Liang, Olga Russakovsky, Yao Zhao, Yunchao Wei
HIGHLIGHT: In this paper, we investigate how to achieve better referring visual grounding with modern vision-language transformers, and propose a simple yet powerful Selective Retraining (SiRi) mechanism.

1469, TITLE: Cross-Modal Prototype Driven Network for Radiology Report Generation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/541_ECCV_2022_paper.php
AUTHORS: Jun Wang, Abhir Bhalerao, Yulan He
HIGHLIGHT: Here we propose a Cross-modal PROtotype driven NETwork (XPRONET) to promote cross-modal pattern learning and exploit it to improve the task of radiology report generation.

1470, TITLE: TM2T: Stochastic and Tokenized Modeling for the Reciprocal Generation of 3D Human Motions and Texts
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/650_ECCV_2022_paper.php
AUTHORS: Chuan Guo, Xinxin Zuo, Sen Wang, Li Cheng
HIGHLIGHT: Inspired by the strong ties between vision and language, the two intimate human sensing and communication modalities, our paper aims to explore the generation of 3D human full-body motions from texts, as well as its reciprocal task, shorthanded for text2motion and motion2text, respectively.

1471, TITLE: SeqTR: A Simple Yet Universal Network for Visual Grounding
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/669_ECCV_2022_paper.php
AUTHORS: Chaoyang Zhu, Yiyi Zhou, Yunhang Shen, Gen Luo, Xingjia Pan, Mingbao Lin, Chao Chen, Liujuan Cao, Xiaoshuai Sun, Rongrong Ji
HIGHLIGHT: In this paper, we propose a simple yet universal network termed SeqTR for visual grounding tasks, e.g., phrase localization, referring expression comprehension (REC) and segmentation (RES).

1472, TITLE: VTC: Improving Video-Text Retrieval with User Comments
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/833_ECCV_2022_paper.php
AUTHORS: Laura Hanu, James Thewlis, Yuki M. Asano, Christian Rupprecht
HIGHLIGHT: In this paper, we a) introduce a new dataset of videos, titles and comments b) present an attention-based mechanism that allows the model to learn from sometimes irrelevant data such as comments c) show that by using comments, our method is able to learn better, more contextualised, representations for image, video and audio representations.

1473, TITLE: FashionViL: Fashion-Focused Vision-and-Language Representation Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/940_ECCV_2022_paper.php
AUTHORS: Xiao Han, Licheng Yu, Xiatian Zhu, Li Zhang, Yi-Zhe Song, Tao Xiang
HIGHLIGHT: In this work, we propose a novel fashion-focused V+L representation learning framework, dubbed as FashionViL.

1474, TITLE: Weakly Supervised Grounding for VQA in Vision-Language Transformers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1011_ECCV_2022_paper.php
AUTHORS: Aisha Urooj, Hilde Kuehne, Chuang Gan, Niels Da Vitoria Lobo, Mubarak Shah
HIGHLIGHT: However, most systems that show good performance of those tasks still rely on pre-trained object detectors during training, which limits their applicability to the object classes available for those detectors. To mitigate this limitation, this paper focuses on the problem of weakly supervised grounding in the context of visual question answering in transformers.

1475, TITLE: Automatic Dense Annotation of Large-Vocabulary Sign Language Videos
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1028_ECCV_2022_paper.php
AUTHORS: Liliane Momeni, Hannah Bull, K R Prajwal, Samuel Albanie, G&uuml;l Varol, Andrew Zisserman
HIGHLIGHT: In this work, we propose a simple, scalable framework to vastly increase the density of automatic annotations.

1476, TITLE: MILES: Visual BERT Pre-training with Injected Language Semantics for Video-Text Retrieval
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1159_ECCV_2022_paper.php
AUTHORS: Yuying Ge, Yixiao Ge, Xihui Liu, Jinpeng Wang, Jianping Wu, Ying Shan, Xiaohu Qie, Ping Luo
HIGHLIGHT: In this work, we for the first time investigate masked visual modeling in video-text pre-training with the dual-encoder architecture.

1477, TITLE: GEB+: A Benchmark for Generic Event Boundary Captioning, Grounding and Retrieval
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1214_ECCV_2022_paper.php
AUTHORS: Yuxuan Wang, Difei Gao, Licheng Yu, Weixian Lei, Matt Feiszli, Mike Zheng Shou
HIGHLIGHT: In this paper, we introduce a new dataset called Kinetic-GEB+.

1478, TITLE: A Simple and Robust Correlation Filtering Method for Text-Based Person Search
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1479_ECCV_2022_paper.php
AUTHORS: Wei Suo, Mengyang Sun, Kai Niu, Yiqi Gao, Peng Wang, Yanning Zhang, Qi Wu
HIGHLIGHT: In this paper, we present a novel end-to-end Simple and Robust Correlation Filtering (SRCF) method which can effectively extract key clues and adaptively align the discriminative features.

1479, TITLE: Making the Most of Text Semantics to Improve Biomedical Vision-Language Processing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1557_ECCV_2022_paper.php
AUTHORS: Benedikt Boecking, Naoto Usuyama, Shruthi Bannur, Daniel C. Castro, Anton Schwaighofer, Stephanie Hyland, Maria Wetscherek, Tristan Naumann, Aditya Nori, Javier Alvarez-Valle, Hoifung Poon, Ozan Oktay
HIGHLIGHT: In this paper, we show that principled textual semantic modelling can substantially improve contrastive learning in self-supervised vision-language processing.

1480, TITLE: Generative Negative Text Replay for Continual Vision-Language Pretraining
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1693_ECCV_2022_paper.php
AUTHORS: Shipeng Yan, Lanqing Hong, Hang Xu, Jianhua Han, Tinne Tuytelaars, Zhenguo Li, Xuming He
HIGHLIGHT: In this work, we focus on learning a VLP model with sequential data chunks of image-text pairs.

1481, TITLE: Video Graph Transformer for Video Question Answering

http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1735_ECCV_2022_paper.php
AUTHORS:            Junbin Xiao, Pan Zhou, Tat-Seng Chua, Shuicheng Yan
HIGHLIGHT:          This paper proposes a Video Graph Transformer (VGT) model for Video Quetion Answering (VideoQA).

1482, TITLE:        Trace Controlled Text to Image Generation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1894_ECCV_2022_paper.php
AUTHORS:            Kun Yan, Lei Ji, Chenfei Wu, Jianmin Bao, Ming Zhou, Nan Duan, Shuai Ma
HIGHLIGHT:          Motivated by this, we propose a Trace Controlled Text to Image Generation model (TCTIG), which takes trace as a bridge between semantic concepts and spatial conditions.

1483, TITLE:        Video Question Answering with Iterative Video-Text Co-Tokenization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2144_ECCV_2022_paper.php
AUTHORS:            AJ Piergiovanni, Kairo Morton, Weicheng Kuo, Michael S. Ryoo, Anelia Angelova
HIGHLIGHT:          In this paper, we propose a novel multi-stream video encoder for video question answering that uses multiple video inputs and a new video-text iterative co-tokenization approach to answer a variety of questions related to videos.

1484, TITLE:        Rethinking Data Augmentation for Robust Visual Question Answering
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2237_ECCV_2022_paper.php
AUTHORS:            Long Chen, Yuhang Zheng, Jun Xiao
HIGHLIGHT:          To this end, we propose a new Knowledge Distillation based Data Augmentation for VQA, dubbed KDDAug.

1485, TITLE:        Explicit Image Caption Editing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2242_ECCV_2022_paper.php
AUTHORS:            Zhen Wang, Long Chen, Wenbo Ma, Guangxing Han, Yulei Niu, Jian Shao, Jun Xiao
HIGHLIGHT:          In this paper, we introduce a new task: Explicit Caption Editing (ECE).To further facilitate ECE research, we propose two new ECE benchmarks by re-organizing two existing datasets, dubbed COCO-EE and Flickr30K-EE, respectively.

1486, TITLE:        Can Shuffling Video Benefit Temporal Bias Problem: A Novel Training Framework for Temporal Grounding
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2488_ECCV_2022_paper.php
AUTHORS:            Jiachang Hao, Haifeng Sun, Pengfei Ren, Jingyu Wang, Qi Qi, Jianxin Liao
HIGHLIGHT:          To this end, this paper proposes a novel training framework for grounding models to use shuffled videos to address temporal bias problem without losing grounding accuracy.

1487, TITLE:        Reliable Visual Question Answering: Abstain Rather Than Answer Incorrectly
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2576_ECCV_2022_paper.php
AUTHORS:            Spencer Whitehead, Suzanne Petryk, Vedaad Shakib, Joseph Gonzalez, Trevor Darrell, Anna Rohrbach, Marcus Rohrbach
HIGHLIGHT:          In this work, we promote a problem formulation for reliable VQA, where we prefer abstention over providing an incorrect answer.

1488, TITLE:        GRIT: Faster and Better Image Captioning Transformer Using Dual Visual Features
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2605_ECCV_2022_paper.php
AUTHORS:            Van-Quang Nguyen, Masanori Suganuma, Takayuki Okatani
HIGHLIGHT:          This paper proposes a Transformer-only neural architecture, dubbed GRIT (Grid- and Region-based Image captioning Transformer), that effectively utilizes the two visual features to generate better captions.

1489, TITLE:        Selective Query-Guided Debiasing for Video Corpus Moment Retrieval
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2686_ECCV_2022_paper.php
AUTHORS:            Sunjae Yoon, Ji Woo Hong, Eunseop Yoon, Dahyun Kim, Junyeong Kim, Hee Suk Yoon, Chang D. Yoo
HIGHLIGHT:          Although recent debiasing methods have focused on removing this retrieval bias, we argue that these biased predictions sometimes should be preserved because there are many queries where biased predictions are rather helpful. To conjugate this retrieval bias, we propose a Selective Query-guided Debiasing network (SQuiDNet), which incorporates the following two main properties: (1) Biased Moment Retrieval that intentionally uncovers the biased moments inherent in objects of the query and (2) Selective Query-guided Debiasing that performs selective debiasing guided by the meaning of the query.

1490, TITLE:        Spatial and Visual Perspective-Taking via View Rotation and Relation Reasoning for Embodied Reference Understanding
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2948_ECCV_2022_paper.php
AUTHORS:            Cheng Shi, Sibei Yang
HIGHLIGHT:          In this paper, we propose a REasoning from your Perspective (REP) method to tackle the challenge by modeling relations between the receiver and the sender as well as the sender and the objects via the proposed novel view rotation and relation reasoning.

1491, TITLE:        Object-Centric Unsupervised Image Captioning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3214_ECCV_2022_paper.php
AUTHORS:            Zihang Meng, David Yang, Xuefei Cao, Ashish Shah, Ser-Nam Lim
HIGHLIGHT:          In this paper, we explore the task of unsupervised image captioning which utilizes unpaired images and texts to train the model so that the texts can come from different sources than the images.

1492, TITLE:        Contrastive Vision-Language Pre-training with Limited Resources

http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3302_ECCV_2022_paper.php
AUTHORS: Quan Cui, Boyan Zhou, Yu Guo, Weidong Yin, Hao Wu, Osamu Yoshie, Yubo Chen
HIGHLIGHT: To this end, we propose a stack of novel methods, which significantly cut down the heavy resource dependency and allow us to conduct dual-encoder multi-modal representation alignment with limited resources.

1493, TITLE: Learning Linguistic Association towards Efficient Text-Video Retrieval
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3305_ECCV_2022_paper.php
AUTHORS: Sheng Fang, Shuhui Wang, Junbao Zhuo, Xinzhe Han, Qingming Huang
HIGHLIGHT: In this paper, we propose a general framework, LINguistic ASsociation (LINAS), which utilizes the complementarity between captions corresponding to the same video.

1494, TITLE: ASSISTER: Assistive Navigation via Conditional Instruction Generation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3324_ECCV_2022_paper.php
AUTHORS: Zanming Huang, Zhongkai Shangguan, Jimuyang Zhang, Gilad Bar, Matthew Boyd, Eshed Ohn-Bar
HIGHLIGHT: We introduce a novel vision-and-language navigation (VLN) task of learning to provide real-time guidance to a blind follower situated in complex dynamic navigation scenarios.

1495, TITLE: X-DETR: A Versatile Architecture for Instance-Wise Vision-Language Tasks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3525_ECCV_2022_paper.php
AUTHORS: Zhaowei Cai, Gukyeong Kwon, Avinash Ravichandran, Erhan Bas, Zhuowen Tu, Rahul Bhotika, Stefano Soatto
HIGHLIGHT: In this paper, we study the challenging instance-wise vision-language tasks, where the free-form language is required to align with the objects instead of the whole image.

1496, TITLE: Learning Disentanglement with Decoupled Labels for Vision-Language Navigation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3622_ECCV_2022_paper.php
AUTHORS: Wenhao Cheng, Xingping Dong, Salman Khan, Jianbing Shen
HIGHLIGHT: However, most methods only utilize the whole complex instruction or inaccurate sub-instructions due to the lack of accurate disentanglement as an intermediate supervision stage. To address this problem, we propose a new Disentanglement framework with Decoupled Labels (DDL) for VLN.

1497, TITLE: Switch-BERT: Learning to Model Multimodal Interactions by Switching Attention and Input
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3834_ECCV_2022_paper.php
AUTHORS: Qingpei Guo, Kaisheng Yao, Wei Chu
HIGHLIGHT: They can achieve exceptional performances on specific tasks, but face a particularly challenging problem of modality mismatch because of diversity of input modalities and their fixed structures. In this paper, we present Switch-BERT for joint vision and language representation learning to address this problem.

1498, TITLE: Word-Level Fine-Grained Story Visualization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4195_ECCV_2022_paper.php
AUTHORS: Bowen Li
HIGHLIGHT: Current works still struggle with output images' quality and consistency, and rely on additional semantic information or auxiliary captioning networks. To address these challenges, we first introduce a new sentence representation, which incorporates word information from all story sentences to mitigate the inconsistency problem. Then, we propose a new discriminator with fusion features and further extend the spatial attention to improve image quality and story consistency.

1499, TITLE: Unifying Event Detection and Captioning as Sequence Generation via Pre-training
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4243_ECCV_2022_paper.php
AUTHORS: Qi Zhang, Yuqing Song, Qin Jin
HIGHLIGHT: Besides, previous event detection methods normally ignore temporal dependencies between events, leading to event redundancy or inconsistency problems. To tackle above the two defects, in this paper, we define event detection as a sequence generation task and propose a unified pre-training and fine-tuning framework to naturally enhance the inter-task association between event detection and captioning.

1500, TITLE: Multimodal Transformer with Variable-Length Memory for Vision-and-Language Navigation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4278_ECCV_2022_paper.php
AUTHORS: Chuang Lin, Yi Jiang, Jianfei Cai, Lizhen Qu, Gholamreza Haffari, Zehuan Yuan
HIGHLIGHT: Considering a single fixed-length vector is often insufficient to capture long-term temporal context, in this paper, we introduce Multimodal Transformer with Variable-length Memory (MTVM) for visually-grounded natural language navigation by modeling the temporal context explicitly.

1501, TITLE: Fine-Grained Visual Entailment
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4411_ECCV_2022_paper.php
AUTHORS: Christopher Thomas, Yipeng Zhang, Shih-Fu Chang
HIGHLIGHT: Visual entailment is a recently proposed multimodal reasoning task where the goal is to predict the logical relationship of a piece of text to an image. In this paper, we propose an extension of this task, where the goal is to predict the logical relationship of fine-grained knowledge elements within a piece of text to an image.

1502, TITLE: Bottom Up Top down Detection Transformers for Language Grounding in Images and Point Clouds
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4656_ECCV_2022_paper.php

AUTHORS:	Ayush Jain, Nikolaos Gkanatsios, Ishita Mediratta, Katerina Fragkiadaki
HIGHLIGHT:	We propose a language grounding model that attends on the referential utterance and on the object proposal pool computed from a pre-trained detector to decode referenced objects with a detection head, without selecting them from the pool.

1503, TITLE:	New Datasets and Models for Contextual Reasoning in Visual Dialog
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4826_ECCV_2022_paper.php
AUTHORS:	Yifeng Zhang, Ming Jiang, Qi Zhao
HIGHLIGHT:	In this work, we focus on developing new datasets and models to highlight the role of contextual reasoning in VD.

1504, TITLE:	VisageSynTalk: Unseen Speaker Video-to-Speech Synthesis via Speech-Visage Feature Selection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5018_ECCV_2022_paper.php
AUTHORS:	Joanna Hong, Minsu Kim, Yong Man Ro
HIGHLIGHT:	The goal of this work is to reconstruct speech from a silent talking face video.

1505, TITLE:	Classification-Regression for Chart Comprehension
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5040_ECCV_2022_paper.php
AUTHORS:	Matan Levy, Rami Ben-Ari, Dani Lischinski
HIGHLIGHT:	Most existing CQA datasets and models are based on simplifying assumptions that often enable surpassing human performance. In this work, we address this outcome and propose a new model that jointly learns classification and regression.

1506, TITLE:	AssistQ: Affordance-Centric Question-Driven Task Completion for Egocentric Assistant
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5044_ECCV_2022_paper.php
AUTHORS:	Benita Wong, Joya Chen, You Wu, Stan Weixian Lei, Dongxing Mao, Difei Gao, Mike Zheng Shou
HIGHLIGHT:	In this paper, we define a new task called Affordance-centric Question-driven Task Completion, where the AI assistant should learn from instructional videos to provide step-by-step help in the user's view.

1507, TITLE:	FindIt: Generalized Localization with Natural Language Queries
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5217_ECCV_2022_paper.php
AUTHORS:	Weicheng Kuo, Fred Bertsch, Wei Li, AJ Piergiovanni, Mohammad Saffar, Anelia Angelova
HIGHLIGHT:	We propose FindIt, a simple and versatile framework that unifies a variety of visual grounding and localization tasks including referring expression comprehension, text-based localization, and object detection.

1508, TITLE:	UniTAB: Unifying Text and Box Outputs for Grounded Vision-Language Modeling
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5226_ECCV_2022_paper.php
AUTHORS:	Zhengyuan Yang, Zhe Gan, Jianfeng Wang, Xiaowei Hu, Faisal Ahmed, Zicheng Liu, Yumao Lu, Lijuan Wang
HIGHLIGHT:	We propose UniTAB that Unifies Text And Box outputs for grounded vision-language (VL) modeling.

1509, TITLE:	Scaling Open-Vocabulary Image Segmentation with Image-Level Labels
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5240_ECCV_2022_paper.php
AUTHORS:	Golnaz Ghiasi, Xiuye Gu, Yin Cui, Tsung-Yi Lin
HIGHLIGHT:	We argue that these models miss an important step of visual grouping, which organizes pixels into groups before learning visual-semantic alignments. We propose OpenSeg to address the above issue while still making use of scalable image-level supervision of captions.

1510, TITLE:	The Abduction of Sherlock Holmes: A Dataset for Visual Abductive Reasoning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5263_ECCV_2022_paper.php
AUTHORS:	Jack Hessel, Jena D. Hwang, Jae Sung Park, Rowan Zellers, Chandra Bhagavatula, Anna Rohrbach, Kate Saenko, Yejin Choi
HIGHLIGHT:	We present Sherlock, an annotated corpus of 103K images for testing machine capacity for abductive reasoning beyond literal image contents.

1511, TITLE:	Speaker-Adaptive Lip Reading with User-Dependent Padding
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5537_ECCV_2022_paper.php
AUTHORS:	Minsu Kim, Hyunjun Kim, Yong Man Ro
HIGHLIGHT:	In this paper, to remedy the performance degradation of lip reading model on unseen speakers, we propose a speaker-adaptive lip reading method, namely user-dependent padding.

1512, TITLE:	TISE: Bag of Metrics for Text-to-Image Synthesis Evaluation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5685_ECCV_2022_paper.php
AUTHORS:	Tan M. Dinh, Rang Nguyen, Binh-Son Hua
HIGHLIGHT:	In this paper, we conduct a study on the state-of-the-art methods for text-to-image synthesis and propose a framework to evaluate these methods.To overcome these issues, we propose a combined set of existing and new metrics to systematically evaluate the methods.

1513, TITLE:	SemAug: Semantically Meaningful Image Augmentations for Object Detection through Language Grounding
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5739_ECCV_2022_paper.php
AUTHORS:	Morgan Heisler, Amin Banitalebi-Dehkordi, Yong Zhang
HIGHLIGHT:	In this paper, we propose an effective technique for image augmentation by injecting contextually meaningful knowledge into the scenes.

1514, TITLE:	Referring Object Manipulation of Natural Images with Conditional Classifier-Free Guidance
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5859_ECCV_2022_paper.php
AUTHORS:	Myungsub Choi
HIGHLIGHT:	We introduce the problem of referring object manipulation (ROM), which aims to generate photo-realistic image edits regarding two textual descriptions: 1) a text referring to an object in the input image and 2) a text describing how to manipulate the referred object.

1515, TITLE:	NewsStories: Illustrating Articles with Visual Summaries
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6141_ECCV_2022_paper.php
AUTHORS:	Reuben Tan, Bryan A. Plummer, Kate Saenko, JP Lewis, Avneesh Sud, Thomas Leung
HIGHLIGHT:	However, many tasks require reasoning about multiple images and long text narratives, such as describing news articles with visual summaries. Thus, we explore a novel setting where the goal is to learn a self-supervised visual-language representation that is robust to varying text length and the number of images.

1516, TITLE:	Webly Supervised Concept Expansion for General Purpose Vision Models
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6214_ECCV_2022_paper.php
AUTHORS:	Amita Kamath, Christopher Clark, Tanmay Gupta, Eric Kolve, Derek Hoiem, Aniruddha Kembhavi
HIGHLIGHT:	This work presents an effective and inexpensive alternative: learn skills from supervised datasets, learn concepts from web image search, and leverage a key characteristic of GPVs -- the ability to transfer visual knowledge across skills.

1517, TITLE:	FedVLN: Privacy-Preserving Federated Vision-and-Language Navigation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6298_ECCV_2022_paper.php
AUTHORS:	Kaiwen Zhou, Xin Eric Wang
HIGHLIGHT:	In this work, we introduce privacy-preserving embodied agent learning for the task of Vision-and-Language Navigation (VLN), where an embodied agent navigates house environments by following natural language instructions.

1518, TITLE:	CODER: Coupled Diversity-Sensitive Momentum Contrastive Learning for Image-Text Retrieval
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6460_ECCV_2022_paper.php
AUTHORS:	Haoran Wang, Dongliang He, Wenhao Wu, Boyang Xia, Min Yang, Fu Li, Yunlong Yu, Zhong Ji, Errui Ding, Jingdong Wang
HIGHLIGHT:	In this paper, we propose our novel Coupled Diversity-Sensitive Momentum Constrastive Learning (CODER) for improving cross-modal representation.

1519, TITLE:	Language-Driven Artistic Style Transfer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6627_ECCV_2022_paper.php
AUTHORS:	Tsu-Jui Fu, Xin Eric Wang, William Yang Wang
HIGHLIGHT:	We introduce a new task---language-driven artistic style transfer (LDAST)---to manipulate the style of a content image, guided by a text.

1520, TITLE:	Single-Stream Multi-level Alignment for Vision-Language Pretraining
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7016_ECCV_2022_paper.php
AUTHORS:	Zaid Khan, Vijay Kumar B G, Xiang Yu, Samuel Schulter, Manmohan Chandraker, Yun Fu
HIGHLIGHT:	We propose a single stream architecture that aligns images and language at multiple levels: global, fine-grained patch-token, and conceptual/semantic, using two novel tasks: symmetric cross-modality reconstruction (XMM) and a pseudo-labeled key word prediction (PSL).

1521, TITLE:	Most and Least Retrievable Images in Visual-Language Query Systems
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7050_ECCV_2022_paper.php
AUTHORS:	Liuwan Zhu, Rui Ning, Jiang Li, Chunsheng Xin, Hongyi Wu
HIGHLIGHT:	Most and Least Retrievable Images in Visual-Language Query Systems

1522, TITLE:	Sports Video Analysis on Large-Scale Data
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7351_ECCV_2022_paper.php
AUTHORS:	Dekun Wu, He Zhao, Xingce Bao, Richard P. Wildes
HIGHLIGHT:	There are several major reasons: (1) The used dataset is collected from non-official providers, which naturally creates a gap between models trained on those datasets and real-world applications (2) previously proposed methods require extensive annotation efforts (i.e., player and ball segmentation at pixel level) on localizing useful visual features to yield acceptable results (3) very few public datasets are available. In this paper, we propose a novel large-scale NBA dataset for Sports Video Analysis (NSVA) with a focus on captioning, to address the above challenges.

1523, TITLE:	Grounding Visual Representations with Texts for Domain Generalization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7879_ECCV_2022_paper.php
AUTHORS:	Seonwoo Min, Nokyung Park, Siwon Kim, Seunghyun Park, Jinkyu Kim
HIGHLIGHT:	In this work, we advocate for leveraging natural language supervision for the domain generalization task.

1524, TITLE:	Bridging the Visual Semantic Gap in VLN via Semantically Richer Instructions
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/8001_ECCV_2022_paper.php
AUTHORS:	Joaquín Ossandón, Benjamín Earle, Alvaro Soto

HIGHLIGHT: To encourage a more suitable use of the visual information, we propose a new data augmentation method that fosters the inclusion of more explicit visual information in the generation of textual navigational instructions.

1525, TITLE: StoryDALL-E: Adapting Pretrained Text-to-Image Transformers for Story Continuation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/8009_ECCV_2022_paper.php
AUTHORS: Adyasha Maharana, Darryl Hannan, Mohit Bansal
HIGHLIGHT: Hence, we first propose the task of story continuation, where the generated visual story is conditioned on a source image, allowing for better generalization to narratives with new characters. Then, we enhance or 'retro-fit' the pretrained text-to-image synthesis models with task-specific modules for (a) sequential image generation and (b) copying relevant elements from an initial frame.

1526, TITLE: VQGAN-CLIP: Open Domain Image Generation and Editing with Natural Language Guidance
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/8048_ECCV_2022_paper.php
AUTHORS: Katherine Crowson, Stella Biderman, Daniel Kornis, Dashiell Stander, Eric Hallahan, Louis Castricato, Edward Raff
HIGHLIGHT: Current methods rely heavily on training to a specific domain (e.g., only faces), manual work or algorithm tuning to latent vector discovery, and manual effort in mask selection to alter only a part of an image. We address all of these usability constraints while producing images of high visual and semantic quality through a unique combination of OpenAI's CLIP (Radford et al., 2021), VQGAN (Esser et al., 2021), and a generation augmentation strategy to produce VQGAN-CLIP.

1527, TITLE: Semantic-Aware Implicit Neural Audio-Driven Video Portrait Generation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/631_ECCV_2022_paper.php
AUTHORS: Xian Liu, Yinghao Xu, Qianyi Wu, Hang Zhou, Wayne Wu, Bolei Zhou
HIGHLIGHT: In this work, we propose Semantic-aware Speaking Portrait NeRF (SSP-NeRF), which creates delicate audio-driven portraits using one unified set of NeRF.

1528, TITLE: End-to-End Active Speaker Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/784_ECCV_2022_paper.php
AUTHORS: Juan León Alcázar, Moritz Cordes, Chen Zhao, Bernard Ghanem
HIGHLIGHT: In this paper, we propose an end-to-end ASD workflow where feature learning and contextual predictions are jointly learned.

1529, TITLE: Emotion Recognition for Multiple Context Awareness
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1181_ECCV_2022_paper.php
AUTHORS: Dingkang Yang, Shuai Huang, Shunli Wang, Yang Liu, Peng Zhai, Liuzhen Su, Mingcheng Li, Lihua Zhang
HIGHLIGHT: To alleviate these issues, we present a context-aware emotion recognition framework that combines four complementary contexts.

1530, TITLE: Adaptive Fine-Grained Sketch-Based Image Retrieval
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1366_ECCV_2022_paper.php
AUTHORS: Ayan Kumar Bhunia, Aneeshan Sain, Parth Hiren Shah, Animesh Gupta, Pinaki Nath Chowdhury, Tao Xiang, Yi-Zhe Song
HIGHLIGHT: In this paper, we offer a novel perspective -- instead of asking for a model that generalises, we advocate for one that quickly adapts, with just very few samples during testing (in a few-shot manner).

1531, TITLE: Quantized GAN for Complex Music Generation from Dance Videos
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1493_ECCV_2022_paper.php
AUTHORS: Ye Zhu, Kyle Olszewski, Yu Wu, Panos Achlioptas, Menglei Chai, Yan Yan, Sergey Tulyakov
HIGHLIGHT: We present Dance2Music-GAN (D2M-GAN), a novel adversarial multi-modal framework that generates complex musical samples conditioned on dance videos.

1532, TITLE: Uncertainty-Aware Multi-modal Learning via Cross-Modal Random Network Prediction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2633_ECCV_2022_paper.php
AUTHORS: Hu Wang, Jianpeng Zhang, Yuanhong Chen, Congbo Ma, Jodie Avery, Louise Hull, Gustavo Carneiro
HIGHLIGHT: In this paper, we propose a new Uncertainty-aware Multi-modal Learner that estimates uncertainty by measuring feature density via Cross-modal Random Network Prediction (CRNP).

1533, TITLE: Localizing Visual Sounds the Easy Way
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4090_ECCV_2022_paper.php
AUTHORS: Shentong Mo, Pedro Morgado
HIGHLIGHT: In this work, we propose a simple yet effective approach for Easy Visual Sound Localization, namely EZ-VSL, without relying on the construction of positive and/or negative regions during training.

1534, TITLE: Learning Visual Styles from Audio-Visual Associations
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4304_ECCV_2022_paper.php
AUTHORS: Tingle Li, Yichen Liu, Andrew Owens, Hang Zhao
HIGHLIGHT: In this paper, we present a method for learning visual styles from unlabeled audio-visual data.

1535, TITLE: Remote Respiration Monitoring of Moving Person Using Radio Signals
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4828_ECCV_2022_paper.php

AUTHORS:          Jae-Ho Choi, Ki-Bong Kang, Kyung-Tae Kim
HIGHLIGHT:          In this study, we examine the task of estimating the respiration signal of a non-stationary subject (a person with large body movements or even walking around) based on radio signals.

1536, TITLE:          Camera Pose Estimation and Localization with Active Audio Sensing
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4904_ECCV_2022_paper.php
AUTHORS:          Karren Yang, Michael Firman, Eric Brachmann, Cl&eacute,ment Godard
HIGHLIGHT:          In this work, we show how to estimate a device's position and orientation indoors by echolocation, i.e., by interpreting the echoes of an audio signal that the device itself emits.

1537, TITLE:          PACS: A Dataset for Physical Audiovisual Commonsense Reasoning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5310_ECCV_2022_paper.php
AUTHORS:          Samuel Yu, Peter Wu, Paul Pu Liang, Ruslan Salakhutdinov, Louis-Philippe Morency
HIGHLIGHT:          Our paper takes a step towards real-world physical commonsense reasoning by contributing PACS: the first audiovisual benchmark annotated for physical commonsense attributes.

1538, TITLE:          VoViT: Low Latency Graph-Based Audio-Visual Voice Separation Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6836_ECCV_2022_paper.php
AUTHORS:          Juan F. Montesinos, Venkatesh S. Kadandale, Gloria Haro
HIGHLIGHT:          This paper presents an audio-visual approach for voice separation which produces state-of-the-art results at a low latency in two scenarios: speech and singing voice.

1539, TITLE:          Telepresence Video Quality Assessment
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6946_ECCV_2022_paper.php
AUTHORS:          Zhenqiang Ying, Deepti Ghadiyaram, Alan Bovik
HIGHLIGHT:          Here we address the significant challenges of Telepresence Video Quality Assessment (TVQA) in several ways.

1540, TITLE:          MultiMAE: Multi-modal Multi-task Masked Autoencoders
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7102_ECCV_2022_paper.php
AUTHORS:          Roman Bachmann, David Mizrahi, Andrei Atanov, Amir Zamir
HIGHLIGHT:          We propose a pre-training strategy called Multi-modal Multi-task Masked Autoencoders (MultiMAE).

1541, TITLE:          AudioScopeV2: Audio-Visual Attention Architectures for Calibrated Open-Domain On-Screen Sound Separation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7301_ECCV_2022_paper.php
AUTHORS:          Efthymios Tzinis, Scott Wisdom, Tal Remez, John R. Hershey
HIGHLIGHT:          We introduce AudioScopeV2, a state-of-the-art universal audio-visual on-screen sound separation system which is capable of learning to separate sounds and associate them with on-screen objects by looking at in-the-wild videos.

1542, TITLE:          Audio—Visual Segmentation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7368_ECCV_2022_paper.php
AUTHORS:          Jinxing Zhou, Jianyuan Wang, Jiayi Zhang, Weixuan Sun, Jing Zhang, Stan Birchfield, Dan Guo, Lingpeng Kong, Meng Wang, Yiran Zhong
HIGHLIGHT:          To deal with the AVS problem, we propose a new method that uses a temporal pixel-wise audio-visual interaction module to inject audio semantics as guidance for the visual segmentation process.

1543, TITLE:          Unsupervised Night Image Enhancement: When Layer Decomposition Meets Light-Effects Suppression
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/982_ECCV_2022_paper.php
AUTHORS:          Yeying Jin, Wenhan Yang, Robby T. Tan
HIGHLIGHT:          To address this problem, we need to suppress the light effects in bright regions while, at the same time, boosting the intensity of dark regions. With this idea in mind, we introduce an unsupervised method that integrates a layer decomposition network and a light-effects suppression network.

1544, TITLE:          Relationformer: A Unified Framework for Image-to-Graph Generation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1468_ECCV_2022_paper.php
AUTHORS:          Suprosanna Shit, Rajat Koner, Bastian Wittmann, Johannes Paetzold, Ivan Ezhov, Hongwei Li, Jiazhen Pan, Sahand Sharifzadeh, Georgios Kaissis, Volker Tresp, Bjoern Menze
HIGHLIGHT:          This work proposes a unified one-stage transformer-based framework, namely Relationformer, that jointly predicts objects and their relations.

1545, TITLE:          GAMa: Cross-view Video Geo-localization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1512_ECCV_2022_paper.php
AUTHORS:          Shruti Vyas, Chen Chen, Mubarak Shah
HIGHLIGHT:          In this work, we focus on ground videos instead of images which provides additional contextual cues which are important for this task.

1546, TITLE:          Revisiting a kNN-based Image Classification System with High-capacity Storage
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1552_ECCV_2022_paper.php
AUTHORS:          Kengo Nakata, Youyang Ng, Daisuke Miyashita, Asuka Maki, Yu-Chieh Lin, Jun Deguchi

HIGHLIGHT: In this paper, we investigate a system that stores knowledge for image classification, such as image feature maps, labels, and original images, not in model parameters but in external storage.

1547, TITLE: Geometric Representation Learning for Document Image Rectification
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1698_ECCV_2022_paper.php
AUTHORS: Hao Feng, Wengang Zhou, Jiajun Deng, Yuechen Wang, Houqiang Li
HIGHLIGHT: To this end, we present DocGeoNet for document image rectification by introducing explicit geometric representation.

1548, TITLE: S2-VER: Semi-Supervised Visual Emotion Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1870_ECCV_2022_paper.php
AUTHORS: Guoli Jia, Jufeng Yang
HIGHLIGHT: Both of them would induce the suboptimal performance of the learned model. To address these issues, we propose S2-VER, the first SSL algorithm for VER, which consists of two com- ponents.

1549, TITLE: Image Coding for Machines with Omnipotent Feature Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1954_ECCV_2022_paper.php
AUTHORS: Ruoyu Feng, Xin Jin, Zongyu Guo, Runsen Feng, Yixin Gao, Tianyu He, Zhizheng Zhang, Simeng Sun, Zhibo Chen
HIGHLIGHT: In this paper, we attempt to develop an ICM framework by learning universal features while also considering compression.

1550, TITLE: Feature Representation Learning for Unsupervised Cross-Domain Image Retrieval
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1986_ECCV_2022_paper.php
AUTHORS: Conghui Hu, Gim Hee Lee
HIGHLIGHT: In this paper, we investigate the unsupervised cross-domain image retrieval task, where class labels and pairing annotations are no longer a prerequisite for training.

1551, TITLE: Fashionformer: A Simple, Effective and Unified Baseline for Human Fashion Segmentation and Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2087_ECCV_2022_paper.php
AUTHORS: Shilin Xu, Xiangtai Li, Jingbo Wang, Guangliang Cheng, Yunhai Tong, Dacheng Tao
HIGHLIGHT: In this work, we focus on joint human fashion segmentation and attribute recognition.

1552, TITLE: Semantic-Guided Multi-Mask Image Harmonization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3151_ECCV_2022_paper.php
AUTHORS: Xuqian Ren, Yifan Liu
HIGHLIGHT: In this work, we propose a novel way to edit the inharmonious images by predicting a series of operator masks.

1553, TITLE: Learning an Isometric Surface Parameterization for Texture Unwrapping
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3394_ECCV_2022_paper.php
AUTHORS: Sagnik Das, Ke Ma, Zhixin Shu, Dimitris Samaras
HIGHLIGHT: In this paper, we present a novel approach to learn texture mapping for an isometrically deformed 3D surface and apply it for texture unwrapping of documents or other objects.

1554, TITLE: Towards Regression-Free Neural Networks for Diverse Compute Platforms
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4124_ECCV_2022_paper.php
AUTHORS: Rahul Duggal, Hao Zhou, Shuo Yang, Jun Fang, Yuanjun Xiong, Wei Xia
HIGHLIGHT: We introduce REGression constrained Neural Architecture Search (REG-NAS) to design a family of highly accurate models that engender fewer negative flips.

1555, TITLE: Relationship Spatialization for Depth Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4145_ECCV_2022_paper.php
AUTHORS: Xiaoyu Xu, Jiayan Qiu, Xinchao Wang, Zhou Wang
HIGHLIGHT: To this end, we strive to spatializing the relationships by devising a novel learning-based framework.

1556, TITLE: Image2Point: 3D Point-Cloud Understanding with 2D Image Pretrained Models
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4152_ECCV_2022_paper.php
AUTHORS: Chenfeng Xu, Shijia Yang, Tomer Galanti, Bichen Wu, Xiangyu Yue, Bohan Zhai, Wei Zhan, Peter Vajda, Kurt Keutzer, Masayoshi Tomizuka
HIGHLIGHT: Our paper explores the potential of transferring 2D model architectures and weights to understand 3D point-clouds, by empirically investigating the feasibility of the transfer, the benefits of the transfer, and shedding light on why the transfer works.

1557, TITLE: FAR: Fourier Aerial Video Recognition
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4270_ECCV_2022_paper.php
AUTHORS: Divya Kothandaraman, Tianrui Guan, Xijun Wang, Shuowen Hu, Ming Lin, Dinesh Manocha
HIGHLIGHT: We present a method, Fourier Activity Recognition (FAR), for UAV video activity recognition.

1558, TITLE: Translating a Visual LEGO Manual to a Machine-Executable Plan
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4284_ECCV_2022_paper.php

AUTHORS: Ruocheng Wang, Yunzhi Zhang, Jiayuan Mao, Chin-Yi Cheng, Jiajun Wu
HIGHLIGHT: This task poses the challenge of establishing a 2D-3D correspondence between the manual image and the real 3D object, and 3D pose estimation for unseen 3D objects, since a new component to be added in a step can be an object built from previous steps. To address these two challenges, we present a novel learning-based framework, the Manual-to-Executable-Plan Network (MEPNet), which reconstructs the assembly steps from a sequence of manual images.

1559, TITLE: Fabric Material Recovery from Video Using Multi-Scale Geometric Auto-Encoder
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4331_ECCV_2022_paper.php
AUTHORS: Junbang Liang, Ming Lin
HIGHLIGHT: We propose an end-to-end network model that uses video input to estimate the fabric materials of the garment worn by a human or an avatar in a virtual world.

1560, TITLE: MegBA: A GPU-Based Distributed Library for Large-Scale Bundle Adjustment
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4366_ECCV_2022_paper.php
AUTHORS: Jie Ren, Wenteng Liang, Ran Yan, Luo Mai, Shiwen Liu, Xiao Liu
HIGHLIGHT: In this paper, we propose MegBA, a GPU-based distributed BA library.

1561, TITLE: The One Where They Reconstructed 3D Humans and Environments in TV Shows
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4525_ECCV_2022_paper.php
AUTHORS: Georgios Pavlakos, Ethan Weber, Matthew Tancik, Angjoo Kanazawa
HIGHLIGHT: However, the majority of the existing work focuses on 2D recognition tasks. In this paper, we make the observation that there is a certain persistence in TV shows, i.e., repetition of the environments and the humans, which makes possible the 3D reconstruction of this content.

1562, TITLE: TALISMAN: Targeted Active Learning for Object Detection with Rare Classes and Slices Using Submodular Mutual Information
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4820_ECCV_2022_paper.php
AUTHORS: Suraj Kothawade, Saikat Ghosh, Sumit Shekhar, Yu Xiang, Rishabh Iyer
HIGHLIGHT: We propose TALISMAN, a novel framework for Targeted Active Learning or object detectIon with rare slices using Submodular MutuAl iNformation.

1563, TITLE: An Efficient Person Clustering Algorithm for Open Checkout-Free Groceries
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5544_ECCV_2022_paper.php
AUTHORS: Junde Wu, Yu Zhang, Rao Fu, Yuanpei Liu, Jing Gao
HIGHLIGHT: Motivated by unique challenges in the open checkout-free grocery, we propose an efficient and effective person clustering method.

1564, TITLE: POP: Mining POtential Performance of New Fashion Products via Webly Cross-Modal Query Expansion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5561_ECCV_2022_paper.php
AUTHORS: Christian Joppi, Geri Skenderi, Marco Cristani
HIGHLIGHT: We propose a data-centric pipeline able to generate exogenous observation data for the New Fashion Product Performance Forecasting (NFPPF) problem, i.e., predicting the performance of a brand-new clothing probe with no available past observations.

1565, TITLE: Pose Forecasting in Industrial Human-Robot Collaboration
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5644_ECCV_2022_paper.php
AUTHORS: Alessio Sampieri, Guido Maria D'Amely di Melendugno, Andrea Avogaro, Federico Cunico, Francesco Setti, Geri Skenderi, Marco Cristani, Fabio Galasso
HIGHLIGHT: Pushing back the frontiers of collaborative robots in industrial environments, we propose a new Separable-Sparse Graph Convolutional Network (SeS-GCN) for pose forecasting.As a second contribution, we present a new benchmark of Cobots and Humans in Industrial COllaboration (CHICO).

1566, TITLE: Actor-Centered Representations for Action Localization in Streaming Videos
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5764_ECCV_2022_paper.php
AUTHORS: Sathyanarayanan Aakur, Sudeep Sarkar
HIGHLIGHT: We propose a framework driven by the notion of hierarchical predictive learning to construct actor-centered features by attention-based contextualization.

1567, TITLE: Bandwidth-Aware Adaptive Codec for DNN Inference Offloading in IoT
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5787_ECCV_2022_paper.php
AUTHORS: Xiufeng Xie, Ning Zhou, Wentao Zhu, Ji Liu
HIGHLIGHT: This paper presents AutoJPEG, a bandwidth-aware adaptive compression solution that learns the JPEG encoding parameters to optimize the DNN inference accuracy under bandwidth constraints.

1568, TITLE: Domain Knowledge-Informed Self-Supervised Representations for Workout Form Assessment
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5907_ECCV_2022_paper.php
AUTHORS: Paritosh Parmar, Amol Gharat, Helge Rhodin
HIGHLIGHT: To aggravate the problem, the errors to be detected in the workouts are very subtle. To that end, we propose to learn exercise-oriented image and video representations from unlabeled samples such that a small dataset annotated by experts suffices for supervised error detection.

1569, TITLE:　　　　　Responsive Listening Head Generation: A Benchmark Dataset and Baseline
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6056_ECCV_2022_paper.php
AUTHORS:　　　　　Mohan Zhou, Yalong Bai, Wei Zhang, Ting Yao, Tiejun Zhao, Tao Mei
HIGHLIGHT:　　　　　In this work, we propose a novel dataset ViCo, highlighting the listening head generation during a face-to-face conversation.We present a new listening head generation benchmark, for synthesizing responsive feedbacks of a listener (e.g., nod, smile) during a face-to-face conversation.

1570, TITLE:　　　　　Towards Scale-Aware, Robust, and Generalizable Unsupervised Monocular Depth Estimation by Integrating IMU Motion Dynamics
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6076_ECCV_2022_paper.php
AUTHORS:　　　　　Sen Zhang, Jing Zhang, Dacheng Tao
HIGHLIGHT:　　　　　Although current methods have reached a high up-to-scale accuracy, they usually fail to learn the true scale metric due to the inherent scale ambiguity from training with monocular sequences. In this work, we tackle this problem and propose DynaDepth, a novel scale-aware framework that integrates information from vision and IMU motion dynamics.

1571, TITLE:　　　　　TIPS: Text-Induced Pose Synthesis
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6540_ECCV_2022_paper.php
AUTHORS:　　　　　Prasun Roy, Subhankar Ghosh, Saumik Bhattacharya, Umapada Pal, Michael Blumenstein
HIGHLIGHT:　　　　　In this paper, we first present the shortcomings of current pose transfer algorithms and then propose a novel text-based pose transfer technique to address those issues.

1572, TITLE:　　　　　Addressing Heterogeneity in Federated Learning via Distributional Transformation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6551_ECCV_2022_paper.php
AUTHORS:　　　　　Haolin Yuan, Bo Hui, Yuchen Yang, Philippe Burlina, Neil Zhenqiang Gong, Yinzhi Cao
HIGHLIGHT:　　　　　In this paper, we propose a novel framework, called DisTrans, to improve FL performance (i.e., model accuracy) via train and test-time distributional transformations along with a double-input-channel model structure.

1573, TITLE:　　　　　Where in the World Is This Image? Transformer-Based Geo-Localization in the Wild
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6867_ECCV_2022_paper.php
AUTHORS:　　　　　Shraman Pramanick, Ewa M. Nowara, Joshua Gleason, Carlos D. Castillo, Rama Chellappa
HIGHLIGHT:　　　　　In this work, we focus on developing an efficient solution to planet-scale single-image geo-localization.

1574, TITLE:　　　　　Colorization for In Situ Marine Plankton Images
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6905_ECCV_2022_paper.php
AUTHORS:　　　　　Guannan Guo, Qi Lin, Tao Chen, Zhenghui Feng, Zheng Wang, Jianping Li
HIGHLIGHT:　　　　　We present a novel deep networks-based vision system IsPlanktonCLR for automatic colorization of in situ marine plankton images.

1575, TITLE:　　　　　Efficient Deep Visual and Inertial Odometry with Adaptive Visual Modality Selection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7099_ECCV_2022_paper.php
AUTHORS:　　　　　Mingyu Yang, Yu Chen, Hun-Seok Kim
HIGHLIGHT:　　　　　In this paper, we propose an adaptive deep-learning based VIO method that reduces computational redundancy by opportunistically disabling the visual modality.

1576, TITLE:　　　　　A Sketch Is Worth a Thousand Words: Image Retrieval with Text and Sketch
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7388_ECCV_2022_paper.php
AUTHORS:　　　　　Patsorn Sangkloy, Wittawat Jitkrittum, Diyi Yang, James Hays
HIGHLIGHT:　　　　　We present TASK-former (Text And SKetch transformer), an end-to-end trainable model for image retrieval using a text description and a sketch as input.

1577, TITLE:　　　　　A Cloud 3D Dataset and Application-Specific Learned Image Compression in Cloud 3D
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7443_ECCV_2022_paper.php
AUTHORS:　　　　　Tianyi Liu, Sen He, Vinodh Kumaran Jayakumar, Wei Wang
HIGHLIGHT:　　　　　This paper explores computation time reduction techniques for learned image compression to make it more suitable for cloud 3D.

1578, TITLE:　　　　　AutoTransition: Learning to Recommend Video Transition Effects
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7634_ECCV_2022_paper.php
AUTHORS:　　　　　Yaojie Shen, Libo Zhang, Kai Xu, Xiaojie Jin
HIGHLIGHT:　　　　　In this paper, we present the premier work on performing automatic video transitions recommendation (VTR): given a sequence of raw video shots and companion audio, recommend video transitions for each pair of neighboring shots.

1579, TITLE:　　　　　Online Segmentation of LiDAR Sequences: Dataset and Algorithm
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/458_ECCV_2022_paper.php
AUTHORS:　　　　　Romain Loiseau, Mathieu Aubry, Lo&iuml;c Landrieu
HIGHLIGHT:　　　　　To address this issue, we first introduce HelixNet, a 10 billion point dataset with fine-grained labels, timestamps, and sensor rotation information necessary to accurately assess the real-time readiness of segmentation algorithms. Second, we propose Helix4D, a compact and efficient spatio-temporal transformer architecture specifically designed for rotating LiDAR sequences.

1580, TITLE: Open-World Semantic Segmentation for LIDAR Point Clouds
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/710_ECCV_2022_paper.php
AUTHORS: Jun Cen, Peng Yun, Shiwei Zhang, Junhao Cai, Di Luan, Mingqian Tang, Ming Liu, Michael Yu Wang
HIGHLIGHT: We propose a REdundAncy cLassifier (REAL) framework to provide a general architecture for both open-set semantic segmentation and incremental learning.

1581, TITLE: KING: Generating Safety-Critical Driving Scenarios for Robust Imitation via Kinematics Gradients
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/843_ECCV_2022_paper.php
AUTHORS: Niklas Hanselmann, Katrin Renz, Kashyap Chitta, Apratim Bhattacharyya, Andreas Geiger
HIGHLIGHT: In this paper, we study this approach to safety-critical driving scenario generation using the CARLA simulator.

1582, TITLE: Differentiable Raycasting for Self-Supervised Occupancy Forecasting
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1105_ECCV_2022_paper.php
AUTHORS: Tarasha Khurana, Peiyun Hu, Achal Dave, Jason Ziglar, David Held, Deva Ramanan
HIGHLIGHT: In this paper, we use geometric occupancy as a natural alternative to view-dependent representations such as freespace.

1583, TITLE: InAction: Interpretable Action Decision Making for Autonomous Driving
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1109_ECCV_2022_paper.php
AUTHORS: Taotao Jing, Haifeng Xia, Renran Tian, Haoran Ding, Xiao Luo, Joshua Domeyer, Rini Sherony, Zhengming Ding
HIGHLIGHT: In this paper, we propose a novel Interpretable Action decision making (InAction) model to provide an enriched explanation from both explicit human annotation and implicit visual semantics.

1584, TITLE: CramNet: Camera-Radar Fusion with Ray-Constrained Cross-Attention for Robust 3D Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1114_ECCV_2022_paper.php
AUTHORS: Jyh-Jing Hwang, Henrik Kretzschmar, Joshua Manela, Sean Rafferty, Nicholas Armstrong-Crews, Tiffany Chen, Dragomir Anguelov
HIGHLIGHT: We propose the camera-radar matching network CramNet, an efficient approach to fuse the sensor readings from camera and radar in a joint 3D space.

1585, TITLE: CODA: A Real-World Road Corner Case Dataset for Object Detection in Autonomous Driving
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1247_ECCV_2022_paper.php
AUTHORS: Kaican Li, Kai Chen, Haoyu Wang, Lanqing Hong, Chaoqiang Ye, Jianhua Han, Yukuai Chen, Wei Zhang, Chunjing Xu, Dit-Yan Yeung, Xiaodan Liang, Zhenguo Li, Hang Xu
HIGHLIGHT: One main reason that impedes the development of truly reliably self-driving systems is the lack of public datasets for evaluating the performance of object detectors on corner cases. Hence, we introduce a challenging dataset named CODA that exposes this critical problem of vision-based detectors.

1586, TITLE: Motion Inspired Unsupervised Perception and Prediction in Autonomous Driving
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1257_ECCV_2022_paper.php
AUTHORS: Mahyar Najibi, Jingwei Ji, Yin Zhou, Charles R. Qi, Xinchen Yan, Scott Ettinger, Dragomir Anguelov
HIGHLIGHT: To address this difficulty, this paper pioneers a novel and challenging direction, i.e., training perception and prediction models to understand open-set moving objects, with no human supervision.

1587, TITLE: StretchBEV: Stretching Future Instance Prediction Spatially and Temporally
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1342_ECCV_2022_paper.php
AUTHORS: Adil Kaan Akan, Fatma Güney
HIGHLIGHT: However, the quality of future predictions degrades over time while extending to longer time horizons due to multiple plausible predictions. In this work, we address this inherent uncertainty in future predictions with a stochastic temporal model.

1588, TITLE: RCLane: Relay Chain Prediction for Lane Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1382_ECCV_2022_paper.php
AUTHORS: Shenghua Xu, Xinyue Cai, Bin Zhao, Li Zhang, Hang Xu, Yanwei Fu, Xiangyang Xue
HIGHLIGHT: In this paper, we present a new method for lane detection based on relay chain prediction.

1589, TITLE: Drive\&Segment: Unsupervised Semantic Segmentation of Urban Scenes via Cross-Modal Distillation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1396_ECCV_2022_paper.php
AUTHORS: Antonin Vobecky, David Hurych, Oriane Siméoni, Spyros Gidaris, Andrei Bursuc, Patrick Pérez, Josef Sivic
HIGHLIGHT: This work investigates learning pixel-wise semantic image segmentation in urban scenes without any manual annotation, just from the raw non-curated data collected by cars which, equipped with cameras and LiDAR sensors, drive around a city.

1590, TITLE: CenterFormer: Center-based Transformer for 3D Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1545_ECCV_2022_paper.php
AUTHORS: Zixiang Zhou, Xiangchen Zhao, Yu Wang, Panqu Wang, Hassan Foroosh
HIGHLIGHT: In this paper, we propose CenterFormer, a center-based transformer network for 3D object detection.

1591, TITLE: Physical Attack on Monocular Depth Estimation with Optimal Adversarial Patches
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1666_ECCV_2022_paper.php
AUTHORS: Zhiyuan Cheng, James Liang, Hongjun Choi, Guanhong Tao, Zhiwen Cao, Dongfang Liu, Xiangyu Zhang
HIGHLIGHT: In this work, we develop an attack against learning-based MDE.

1592, TITLE: ST-P3: End-to-End Vision-Based Autonomous Driving via Spatial-Temporal Feature Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1807_ECCV_2022_paper.php
AUTHORS: Shengchao Hu, Li Chen, Penghao Wu, Hongyang Li, Junchi Yan, Dacheng Tao
HIGHLIGHT: In particular, we propose a spatial-temporal feature learning scheme towards a set of more representative features for perception, prediction and planning tasks simultaneously, which is called ST-P3.

1593, TITLE: PersFormer: 3D Lane Detection via Perspective Transformer and the OpenLane Benchmark
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1817_ECCV_2022_paper.php
AUTHORS: Li Chen, Chonghao Sima, Yang Li, Zehan Zheng, Jiajie Xu, Xiangwei Geng, Hongyang Li, Conghui He, Jianping Shi, Yu Qiao, Junchi Yan
HIGHLIGHT: Previous work struggled in complex cases due to their simple designs of the spatial transformation between front view and bird's eye view (BEV) and the lack of a realistic dataset. Towards these issues, we present PersFormer: an end-to-end monocular 3D lane detector with a novel Transformer-based spatial feature transformation module.

1594, TITLE: PointFix: Learning to Fix Domain Bias for Robust Online Stereo Adaptation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2217_ECCV_2022_paper.php
AUTHORS: Kwonyoung Kim, Jungin Park, Jiyoung Lee, Dongbo Min, Kwanghoon Sohn
HIGHLIGHT: However, previous methods often fail to counteract particular regions related to dynamic objects with more severe environmental changes. To mitigate this issue, we propose to incorporate an auxiliary point-selective network into a meta-learning framework, called PointFix, to provide a robust initialization of stereo models for online stereo adaptation.

1595, TITLE: BRNet: Exploring Comprehensive Features for Monocular Depth Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2384_ECCV_2022_paper.php
AUTHORS: Wencheng Han, Junbo Yin, Xiaogang Jin, Xiangdong Dai, Jianbing Shen
HIGHLIGHT: In this paper, we address the comprehensive feature representation problem for self-supervised depth estimation.i.e paying attention to both local and global feature representation.

1596, TITLE: SiamDoGe: Domain Generalizable Semantic Segmentation Using Siamese Network
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2542_ECCV_2022_paper.php
AUTHORS: Zhenyao Wu, Xinyi Wu, Xiaoping Zhang, Lili Ju, Song Wang
HIGHLIGHT: In this paper, we propose a novel domain generalizable semantic segmentation method, "SiamDoGe", which builds upon a DR approach without using auxiliary domains and employs a Siamese architecture to learn domain-agnostic features from the training dataset.

1597, TITLE: Context-Aware Streaming Perception in Dynamic Environments
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2624_ECCV_2022_paper.php
AUTHORS: Gur-Eyal Sela, Ionel Gog, Justin Wong, Kumar Krishna Agrawal, Xiangxi Mo, Sukrit Kalra, Peter Schafhalter, Eric Leong, Xin Wang, Bharathan Balaji, Joseph Gonzalez, Ion Stoica
HIGHLIGHT: In this paper, we propose to maximize streaming accuracy for every environment context.

1598, TITLE: SpOT: Spatiotemporal Modeling for 3D Object Tracking
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2657_ECCV_2022_paper.php
AUTHORS: Colton Stearns, Davis Rempe, Jie Li, Rare? Ambru?, Sergey Zakharov, Vitor Guizilini, Yanchao Yang, Leonidas J. Guibas
HIGHLIGHT: In this work, we develop a holistic representation of traffic scenes that leverages both spatial and temporal information of the actors in the scene.

1599, TITLE: Multimodal Transformer for Automatic 3D Annotation and Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2756_ECCV_2022_paper.php
AUTHORS: Chang Liu, Xiaoyan Qian, Binxiao Huang, Xiaojuan Qi, Edmund Lam, Siew-Chong Tan, Ngai Wong
HIGHLIGHT: To automate the annotation and facilitate the production of various customized datasets, we propose an end-to-end multimodal transformer (MTrans) autolabeler, which leverages both LiDAR scans and images to generate precise 3D box annotations from weak 2D bounding boxes.

1600, TITLE: Dynamic 3D Scene Analysis by Point Cloud Accumulation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2787_ECCV_2022_paper.php
AUTHORS: Shengyu Huang, Zan Gojcic, Jiahui Huang, Andreas Wieser, Konrad Schindler
HIGHLIGHT: In the present paper, we explore multi-frame point cloud accumulation as a mid-level representation of 3D scan sequences, and develop a method that exploits inductive biases of outdoor street scenes, including their geometric layout and object-level rigidity.

1601, TITLE: Homogeneous Multi-modal Feature Fusion and Interaction for 3D Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3475_ECCV_2022_paper.php
AUTHORS: Xin Li, Botian Shi, Yuenan Hou, Xingjiao Wu, Tianlong Ma, Yikang Li, Liang He

HIGHLIGHT: In this paper, we propose a homogeneous multi-modal feature fusion and interaction method (HMFI) for 3D object detection.

1602, TITLE: JPerceiver: Joint Perception Network for Depth, Pose and Layout Estimation in Driving Scenes
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3644_ECCV_2022_paper.php
AUTHORS: Haimei Zhao, Jing Zhang, Sen Zhang, Dacheng Tao
HIGHLIGHT: In this paper, we address these issues by proposing a novel joint perception framework named JPerceiver, which can simultaneously estimate scale-aware depth and VO as well as BEV layout from a monocular video sequence.

1603, TITLE: Semi-Supervised 3D Object Detection with Proficient Teachers
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3655_ECCV_2022_paper.php
AUTHORS: Junbo Yin, Jin Fang, Dingfu Zhou, Liangjun Zhang, Cheng-Zhong Xu, Jianbing Shen, Wenguan Wang
HIGHLIGHT: In this work, we propose a new Pseudo-Labeling framework for semi-supervised 3D object detection, by enhancing the teacher model to a proficient one with several necessary designs.

1604, TITLE: Point Cloud Compression with Sibling Context and Surface Priors
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3870_ECCV_2022_paper.php
AUTHORS: Zhili Chen, Zian Qian, Sukai Wang, Qifeng Chen
HIGHLIGHT: We present a novel octree-based multi-level framework for large-scale point cloud compression, which can organize sparse and unstructured point clouds in a memory-efficient way.

1605, TITLE: Lane Detection Transformer Based on Multi-Frame Horizontal and Vertical Attention and Visual Transformer Module
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3918_ECCV_2022_paper.php
AUTHORS: Han Zhang, Yunchao Gu, Xinliang Wang, Junjun Pan, Minghui Wang
HIGHLIGHT: In this paper, we propose a novel lane detection Transformer based on multi-frame input to regress the parameters of lanes under a lane shape modeling.

1606, TITLE: ProposalContrast: Unsupervised Pre-training for LiDAR-Based 3D Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3936_ECCV_2022_paper.php
AUTHORS: Junbo Yin, Dingfu Zhou, Liangjun Zhang, Jin Fang, Cheng-Zhong Xu, Jianbing Shen, Wenguan Wang
HIGHLIGHT: Considering region-level representations are more suitable for 3D object detection, we devise a new unsupervised point cloud pre-training framework, called ProposalContrast, that learns robust 3D representations by contrasting region proposals.

1607, TITLE: PreTraM: Self-Supervised Pre-training via Connecting Trajectory and Map
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3965_ECCV_2022_paper.php
AUTHORS: Chenfeng Xu, Tian Li, Chen Tang, Lingfeng Sun, Kurt Keutzer, Masayoshi Tomizuka, Alireza Fathi, Wei Zhan
HIGHLIGHT: In this paper, we propose PreTraM, a self-supervised Pre-training scheme via connecting Trajectories and Maps for trajectory forecasting.

1608, TITLE: Master of All: Simultaneous Generalization of Urban-Scene Segmentation to All Adverse Weather Conditions
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4043_ECCV_2022_paper.php
AUTHORS: Nikhil Reddy, Abhinav Singhal, Abhishek Kumar, Mahsa Baktashmotlagh, Chetan Arora
HIGHLIGHT: Even then, they typically adapt to a single(specific) target domain(s). To remedy this, we propose a novel, fully test time, adaptation technique, named \textit{Master of ALL} (\mall), for simultaneous generalization to multiple target domains.

1609, TITLE: LESS: Label-Efficient Semantic Segmentation for LiDAR Point Clouds
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4350_ECCV_2022_paper.php
AUTHORS: Minghua Liu, Yin Zhou, Charles R. Qi, Boqing Gong, Hao Su, Dragomir Anguelov
HIGHLIGHT: Specifically, we leverage geometry patterns in outdoor scenes to have a heuristic pre-segmentation to reduce the manual labeling and jointly design the learning targets with the labeling process.

1610, TITLE: Visual Cross-View Metric Localization with Dense Uncertainty Estimates
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4513_ECCV_2022_paper.php
AUTHORS: Zimin Xia, Olaf Booij, Marco Manfredi, Julian F. P. Kooij
HIGHLIGHT: This work addresses visual cross-view metric localization for outdoor robotics.

1611, TITLE: V2X-ViT: Vehicle-to-Everything Cooperative Perception with Vision Transformer
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4589_ECCV_2022_paper.php
AUTHORS: Runsheng Xu, Hao Xiang, Zhengzhong Tu, Xin Xia, Ming-Hsuan Yang, Jiaqi Ma
HIGHLIGHT: In this paper, we investigate the application of Vehicle-to-Everything (V2X) communication to improve the perception performance of autonomous vehicles.

1612, TITLE: DevNet: Self-Supervised Monocular Depth Learning via Density Volume Construction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4865_ECCV_2022_paper.php
AUTHORS: Kaichen Zhou, Lanqing Hong, Changhao Chen, Hang Xu, Chaoqiang Ye, Qingyong Hu, Zhenguo Li
HIGHLIGHT: However, they neither fully exploit the 3D point-wise geometric correspondences, nor effectively tackle the ambiguities in the photometric warping caused by occlusions or illumination inconsistency. To address these problems, this work

proposes Density Volume Construction Network (DevNet), a novel self-supervised monocular depth learning framework, that can consider 3D spatial information, and exploit stronger geometric constraints among adjacent camera frustums.

1613, TITLE:        Action-Based Contrastive Learning for Trajectory Prediction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5235_ECCV_2022_paper.php
AUTHORS:        Marah Halawa, Olaf Hellwich, Pia Bideau
HIGHLIGHT:        In this work, we address the problem of predicting future pedestrian trajectories in a first person view setting with a moving camera.

1614, TITLE:        Radatron: Accurate Detection Using Multi-Resolution Cascaded MIMO Radar
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5266_ECCV_2022_paper.php
AUTHORS:        Sohrab Madani, Jayden Guan, Waleed Ahmed, Saurabh Gupta, Haitham Hassanieh
HIGHLIGHT:        In this paper, we present Radatron, a system capable of accurate object detection using mmWave radar as a stand-alone sensor.

1615, TITLE:        LiDAR Distillation: Bridging the Beam-Induced Domain Gap for 3D Object Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5404_ECCV_2022_paper.php
AUTHORS:        Yi Wei, Zibu Wei, Yongming Rao, Jiaxin Li, Jie Zhou, Jiwen Lu
HIGHLIGHT:        In this paper, we propose the LiDAR Distillation to bridge the domain gap induced by different LiDAR beams for 3D object detection.

1616, TITLE:        Efficient Point Cloud Segmentation with Geometry-Aware Sparse Networks
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5673_ECCV_2022_paper.php
AUTHORS:        Maosheng Ye, Rui Wan, Shuangjie Xu, Tongyi Cao, Qifeng Chen
HIGHLIGHT:        However, these works fail to maintain the balance among performance, efficiency, and memory consumption, showing incapability to integrate sparsity and geometry appropriately. To address these issues, we propose the Geometry-aware Sparse Networks (GASN) by utilizing the sparsity and geometry of a point cloud in a single voxel representation.

1617, TITLE:        FH-Net: A Fast Hierarchical Network for Scene Flow Estimation on Real-World Point Clouds
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5991_ECCV_2022_paper.php
AUTHORS:        Lihe Ding, Shaocong Dong, Tingfa Xu, Xinli Xu, Jie Wang, Jianan Li
HIGHLIGHT:        In this work, we propose a fast hierarchical network, FH-Net, which directly gets the key points flow through a lightweight Trans-flow layer utilizing the reliable local geometry prior, and optionally back-propagates the computed sparse flows through an inverse Trans-up layer to obtain hierarchical flows at different resolutions.

1618, TITLE:        SpatialDETR: Robust Scalable Transformer-Based 3D Object Detection from Multi-View Camera Images with Global Cross-Sensor Attention
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6227_ECCV_2022_paper.php
AUTHORS:        Simon Doll, Richard Schulz, Lukas Schneider, Viviane Benzin, Markus Enzweiler, Hendrik P.A. Lensch
HIGHLIGHT:        Based on the key idea of DETR this paper introduces an object-centric 3D object detection framework that operates on a limited number of 3D object queries instead of dense bounding box proposals followed by non-maximum suppression.

1619, TITLE:        Pixel-Wise Energy-Biased Abstention Learning for Anomaly Segmentation on Complex Urban Driving Scenes
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6295_ECCV_2022_paper.php
AUTHORS:        Yu Tian, Yuyuan Liu, Guansong Pang, Fengbei Liu, Yuanhong Chen, Gustavo Carneiro
HIGHLIGHT:        In this paper, we propose a new anomaly segmentation method, named pixel-wise energy-biased abstention learning (PEBAL), that explores pixel-wise abstention learning (AL) with a model that learns an adaptive pixel-level anomaly class, and an energy-based model (EBM) that learns inlier pixel distribution.

1620, TITLE:        Rethinking Closed-Loop Training for Autonomous Driving
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7315_ECCV_2022_paper.php
AUTHORS:        Chris Zhang, Runsheng Guo, Wenyuan Zeng, Yuwen Xiong, Binbin Dai, Rui Hu, Mengye Ren, Raquel Urtasun
HIGHLIGHT:        In this work, we present the first empirical study which analyzes the effects of different training benchmark designs on the success of learning agents, such as how to design traffic scenarios and scale training environments.

1621, TITLE:        SLiDE: Self-Supervised LiDAR De-Snowing through Reconstruction Difficulty
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7374_ECCV_2022_paper.php
AUTHORS:        Gwangtak Bae, Byungjun Kim, Seongyong Ahn, Jihong Min, Inwook Shim
HIGHLIGHT:        Semantic segmentation with snow labels would be a straightforward solution for removing them, but it requires laborious point-wise annotation. To address this problem, we propose a novel self-supervised learning framework for snow points removal in LiDAR point clouds.

1622, TITLE:        Generative Meta-Adversarial Network for Unseen Object Navigation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1315_ECCV_2022_paper.php
AUTHORS:        Sixian Zhang, Weijie Li, Xinhang Song, Yubing Bai, Shuqiang Jiang
HIGHLIGHT:        In this paper, we focus on the problem of navigating to unseen objects in new environments only based on limited training knowledge.

1623, TITLE:        Object Manipulation via Visual Target Localization
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1546_ECCV_2022_paper.php

AUTHORS:            Kiana Ehsani, Ali Farhadi, Aniruddha Kembhavi, Roozbeh Mottaghi
HIGHLIGHT:          We propose Manipulation via Visual Object Location Estimation (m-VOLE), an approach that explores the environment in search for target objects, computes their 3D coordinates once they are located, and then continues to estimate their 3D locations even when the objects are not visible, thus robustly aiding the task of manipulating these objects throughout the episode.

1624, TITLE:        MoDA: Map Style Transfer for Self-Supervised Domain Adaptation of Embodied Agents
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1762_ECCV_2022_paper.php
AUTHORS:            Eun Sun Lee, Junho Kim, SangWon Park, Young Min Kim
HIGHLIGHT:          We propose a domain adaptation method, MoDA, which adapts a pretrained embodied agent to a new, noisy environment without ground-truth supervision.

1625, TITLE:        Housekeep: Tidying Virtual Households Using Commonsense Reasoning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1790_ECCV_2022_paper.php
AUTHORS:            Yash Kant, Arun Ramachandran, Sriram Yenamandra, Igor Gilitschenski, Dhruv Batra, Andrew Szot, Harsh Agrawal
HIGHLIGHT:          We introduce Housekeep, a benchmark to evaluate commonsense reasoning in the home for embodied AI.

1626, TITLE:        Domain Randomization-Enhanced Depth Simulation and Restoration for Perceiving and Grasping Specular and Transparent Objects
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/1831_ECCV_2022_paper.php
AUTHORS:            Qiyu Dai, Jiyao Zhang, Qiwei Li, Tianhao Wu, Hao Dong, Ziyuan Liu, Ping Tan, He Wang
HIGHLIGHT:          Commercial depth sensors usually generate noisy and missing depths, especially on specular and transparent objects, which poses critical issues to downstream depth or point cloud-based tasks. To mitigate this problem, we propose a powerful RGBD fusion network, SwinDRNet, for depth restoration.

1627, TITLE:        Resolving Copycat Problems in Visual Imitation Learning via Residual Action Prediction
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/2802_ECCV_2022_paper.php
AUTHORS:            Chia-Chi Chuang, Donglin Yang, Chuan Wen, Yang Gao
HIGHLIGHT:          However, surprisingly people find that sometimes imitation from observation histories performs worse than imitation from the most recent observation. In this paper, we explain this phenomenon from the information flow within the neural network perspective.

1628, TITLE:        OPD: Single-View 3D Openable Part Detection
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/3727_ECCV_2022_paper.php
AUTHORS:            Hanxiao Jiang, Yongsen Mao, Manolis Savva, Angel X. Chang
HIGHLIGHT:          We address the task of predicting what parts of an object can open and how they move when they do so.

1629, TITLE:        AirDet: Few-Shot Detection without Fine-Tuning for Autonomous Exploration
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4293_ECCV_2022_paper.php
AUTHORS:            Bowen Li, Chen Wang, Pranay Reddy, Seungchan Kim, Sebastian Scherer
HIGHLIGHT:          We find that their major limitation is that the little but valuable information from a few support images is not fully exploited. To solve this problem, we propose a brand new architecture, AirDet, and surprisingly find that, by learning class-agnostic relation with the support images in all modules, including cross-scale object proposal network, shots aggregation module, and localization network, AirDet without fine-tuning achieves comparable or even better results than many fine-tuned methods, reaching up to 30-40% improvements.

1630, TITLE:        TransGrasp: Grasp Pose Estimation of a Category of Objects by Transferring Grasps from Only One Labeled Instance
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4338_ECCV_2022_paper.php
AUTHORS:            Hongtao Wen, Jianhang Yan, Wanli Peng, Yi Sun
HIGHLIGHT:          However, most of existing methods require exact 3D object models available beforehand or a large amount of grasp annotations for training. To avoid these problems, we propose TransGrasp, a category-level grasp pose estimation method that predicts grasp poses of a category of objects by labeling only one object instance.

1631, TITLE:        StARformer: Transformer with State-Action-Reward Representations for Visual Reinforcement Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4447_ECCV_2022_paper.php
AUTHORS:            Jinghuan Shang, Kumara Kahatapitiya, Xiang Li, Michael S. Ryoo
HIGHLIGHT:          In this work, we propose State-Action-Reward Transformer (StARformer) for visual RL, which explicitly models short-term state-action-reward representations (StAR-representations), essentially introducing a Markovian-like inductive bias to improve long-term modeling.

1632, TITLE:        TIDEE: Tidying Up Novel Rooms Using Visuo-Semantic Commonsense Priors
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4668_ECCV_2022_paper.php
AUTHORS:            Gabriel Sarch, Zhaoyuan Fang, Adam W. Harley, Paul Schydlo, Michael J. Tarr, Saurabh Gupta, Katerina Fragkiadaki
HIGHLIGHT:          We introduce TIDEE, an embodied agent that tidies up a disordered scene based on learned commonsense object placement and room arrangement priors.

1633, TITLE:        Learning Efficient Multi-agent Cooperative Visual Exploration
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/4906_ECCV_2022_paper.php

AUTHORS:  Chao Yu, Xinyi Yang, Jiaxuan Gao, Huazhong Yang, Yu Wang, Yi Wu
HIGHLIGHT:  In this paper, we propose a novel RL-based multi-agent planning module, Multi-agent Spatial Planner (MSP).

1634, TITLE:  Zero-Shot Category-Level Object Pose Estimation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5042_ECCV_2022_paper.php
AUTHORS:  Walter Goodwin, Sagar Vaze, Ioannis Havoutis, Ingmar Posner
HIGHLIGHT:  In this paper we tackle the problem of estimating the pose of novel object categories in a zero-shot manner.

1635, TITLE:  Sim-to-Real 6D Object Pose Estimation via Iterative Self-Training for Robotic Bin Picking
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5088_ECCV_2022_paper.php
AUTHORS:  Kai Chen, Rui Cao, Stephen James, Yichuan Li, Yun-Hui Liu, Pieter Abbeel, Qi Dou
HIGHLIGHT:  In this paper, we propose an iterative self-training framework for sim-to-real 6D object pose estimation to facilitate cost-effective robotic grasping.

1636, TITLE:  Active Audio-Visual Separation of Dynamic Sound Sources
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5172_ECCV_2022_paper.php
AUTHORS:  Sagnik Majumder, Kristen Grauman
HIGHLIGHT:  We propose a reinforcement learning agent equipped with a novel transformer memory that learns motion policies to control its camera and microphone to recover the dynamic target audio, using self-attention to make high-quality estimates for current timesteps and also simultaneously improve its past estimates.

1637, TITLE:  DexMV: Imitation Learning for Dexterous Manipulation from Human Videos
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5261_ECCV_2022_paper.php
AUTHORS:  Yuzhe Qin, Yueh-Hua Wu, Shaowei Liu, Hanwen Jiang, Ruihan Yang, Yang Fu, Xiaolong Wang
HIGHLIGHT:  In this paper, we propose a new platform and pipeline, DexMV (Dexterous Manipulation from Videos), for imitation learning to bridge the gap between computer vision and robot learning.

1638, TITLE:  Sim-2-Sim Transfer for Vision-and-Language Navigation in Continuous Environments
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5303_ECCV_2022_paper.php
AUTHORS:  Jacob Krantz, Stefan Lee
HIGHLIGHT:  Despite sharing the high-level task and even the underlying instruction-path data, performance on VLN-CE lags behind VLN significantly. In this work, we explore this gap by transferring an agent from the abstract environment of VLN to the continuous environment of VLN-CE.

1639, TITLE:  Style-Agnostic Reinforcement Learning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5500_ECCV_2022_paper.php
AUTHORS:  Juyong Lee, Seokjun Ahn, Jaesik Park
HIGHLIGHT:  We present a novel method of learning style-agnostic representation using both style transfer and adversarial learning in the reinforcement learning framework.

1640, TITLE:  Self-Supervised Interactive Object Segmentation through a Singulation-and-Grasping Approach
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5880_ECCV_2022_paper.php
AUTHORS:  Houjian Yu, Changhyun Choi
HIGHLIGHT:  Instance segmentation with unseen objects is a challenging problem in unstructured environments. To solve this problem, we propose a robot learning approach to actively interact with novel objects and collect each object's training label for further fine-tuning to improve the segmentation model performance, while avoiding the time-consuming process of manually labeling a dataset.

1641, TITLE:  Learning from Unlabeled 3D Environments for Vision-and-Language Navigation
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7346_ECCV_2022_paper.php
AUTHORS:  Shizhe Chen, Pierre-Louis Guhur, Makarand Tapaswi, Cordelia Schmid, Ivan Laptev
HIGHLIGHT:  In this work, we address the data scarcity issue by proposing to automatically create a large-scale VLN dataset from 900 unlabeled 3D buildings from HM3D.

1642, TITLE:  BodySLAM: Joint Camera Localisation, Mapping, and Human Motion Tracking
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/7926_ECCV_2022_paper.php
AUTHORS:  Dorian F. Henning, Tristan Laidlow, Stefan Leutenegger
HIGHLIGHT:  Many in the wild sequences of human motion are captured by a moving camera, which adds the complication of conflated camera and human motion to the estimation. We therefore present BodySLAM, a monocular SLAM system that jointly estimates the position, shape, and posture of human bodies, as well as the camera trajectory.

1643, TITLE:  FusionVAE: A Deep Hierarchical Variational Autoencoder for RGB Image Fusion
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5001_ECCV_2022_paper.php
AUTHORS:  Fabian Duffhauss, Ngo Anh Vien, Hanna Ziesche, Gerhard Neumann
HIGHLIGHT:  We overcome this shortcoming by presenting a novel deep hierarchical variational autoencoder called FusionVAE that can serve as a basis for many fusion tasks.In order to assess the fusion capabilities of our model thoroughly, we created three novel datasets for image fusion based on popular computer vision datasets.

1644, TITLE:  Learning Algebraic Representation for Systematic Generalization in Abstract Reasoning
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/5555_ECCV_2022_paper.php

AUTHORS:            Chi Zhang, Sirui Xie, Baoxiong Jia, Ying Nian Wu, Song-Chun Zhu, Yixin Zhu
HIGHLIGHT:          In this work, we follow the classicist's call and propose a hybrid approach to improve systematic generalization in reasoning.

1645, TITLE:       Video Dialog As Conversation about Objects Living in Space-Time
http://www.ecva.net/papers/eccv_2022/papers_ECCV/html/6365_ECCV_2022_paper.php
AUTHORS:            Hoang-Anh Pham, Thao Minh Le, Vuong Le, Tu Minh Phuong, Truyen Tran
HIGHLIGHT:          The task poses great visual, linguistic, and reasoning challenges that cannot be easily overcome without an appropriate representation scheme over video and dialog that supports high-level reasoning. To tackle these challenges we present a new object-centric framework for video dialog that supports neural reasoning dubbed COST - which stands for Conversation about Objects in Space-Time.