

- 1, TITLE: Ensemble Block Co-clustering: A Unified Framework for Text Data  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412058>  
AUTHORS: S&eacute;verine Affeldt, Lazhar Labiod, Mohamed Nadif  
HIGHLIGHT: In this paper, we propose a unified framework for Ensemble Block Co-clustering (EBCO), which aims to fuse multiple basic co-clusterings into a consensus structured affinity matrix.
- 2, TITLE: Learning to Personalize for Web Search Sessions  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412050>  
AUTHORS: Saad Aloteibi, Stephen Clark  
HIGHLIGHT: In this paper, we formulate session search as a personalization task under the framework of learning to rank.
- 3, TITLE: Optimization of Answer Set Programs for Consistent Query Answering by Means of First-Order Rewriting  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411911>  
AUTHORS: Aziz Amezian El Khalfioui, Jonathan Joertz, Dorian Labeeuw, Ga&euml;tan Staquet, Jef Wijsen  
HIGHLIGHT: Optimization of Answer Set Programs for Consistent Query Answering by Means of First-Order Rewriting
- 4, TITLE: Spectral Relaxations and Fair Densest Subgraphs  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412036>  
AUTHORS: Aris Anagnostopoulos, Luca Becchetti, Adriano Fazzone, Cristina Menghini, Chris Schwiegelshohn  
HIGHLIGHT: In this paper, we address the problem of identifying a densest subgraph, while ensuring that none of one binary protected attribute is disparately impacted.
- 5, TITLE: The Impact of Negative Triple Generation Strategies and Anomalies on Knowledge Graph Completion  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412023>  
AUTHORS: Iti Bansal, Sudhanshu Tiwari, Carlos R. Rivero  
HIGHLIGHT: In this paper, we analyze the impact of negative triple generation during both training and testing on translation-based completion models.
- 6, TITLE: tdGraphEmbed: Temporal Dynamic Graph-Level Embedding  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411953>  
AUTHORS: Moran Beladev, Lior Rokach, Gilad Katz, Ido Guy, Kira Radinsky  
HIGHLIGHT: In this study, we present tdGraphEmbed, a novel temporal graph-level embedding approach that extend the random-walk based node embedding methods to globally embed both the nodes of the graph and its representation at each time step, thus creating representation of the entire graph at each step.
- 7, TITLE: Learning to Match Jobs with Resumes from Sparse Interaction Data using Multi-View Co-Teaching Network  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411929>  
AUTHORS: Shuqing Bian, Xu Chen, Wayne Xin Zhao, Kun Zhou, Yupeng Hou, Yang Song, Tao Zhang, Ji-Rong Wen  
HIGHLIGHT: To alleviate these problems, in this paper, we propose a novel multi-view co-teaching network from sparse interaction data for job-resume matching.
- 8, TITLE: Incremental and Parallel Computation of Structural Graph Summaries for Evolving Graphs  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411878>  
AUTHORS: Till Blume, David Richerby, Ansgar Scherp  
HIGHLIGHT: Existing graph summarization algorithms are tailored to specific graph summary models, only support one-time batch computation, are designed and implemented for a specific task, or evaluated using static graphs. Our novel, incremental, parallel algorithm addresses all these shortcomings.
- 9, TITLE: Do People and Neural Nets Pay Attention to the Same Words: Studying Eye-tracking Data for Non-factoid QA Evaluation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412043>  
AUTHORS: Valeria Bolotova, Vladislav Blinov, Yukun Zheng, W. Bruce Croft, Falk Scholer, Mark Sanderson  
HIGHLIGHT: Similarity was found, consequently, we propose a method to exploit the BERT attention map to generate suggestions that simulate eye gaze during user evaluation.
- 10, TITLE: Fast and Scalable Outlier Detection with Sorted Hypercubes  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412033>  
AUTHORS: Eug&ecirc;nio F. Cabral, Robson L.F. Cordeiro  
HIGHLIGHT: This paper proposes HySortOD -- a novel algorithm that uses an efficient hypercube-ordering-and-searching strategy for fast outlier detection.

- 11, TITLE: SenticNet 6: Ensemble Application of Symbolic and Subsymbolic AI for Sentiment Analysis  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412003>  
AUTHORS: Erik Cambria, Yang Li, Frank Z. Xing, Soujanya Poria, Kenneth Kwok  
HIGHLIGHT: In this work, we integrate top-down and bottom-up learning via an ensemble of symbolic and subsymbolic AI tools, which we apply to the interesting problem of polarity detection from text.
- 12, TITLE: Laconic Image Classification: Human vs. Machine Performance  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411984>  
AUTHORS: Javier Carrasco, Aidan Hogan, Jorge P&eacute;rez  
HIGHLIGHT: We propose laconic classification as a novel way to understand and compare the performance of diverse image classifiers.
- 13, TITLE: Retrieval-based Document Selection for Relevance Feedback with Automatically Generated Query Variants  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412032>  
AUTHORS: Anirban Chakraborty, Debasis Ganguly, Owen Conlan  
HIGHLIGHT: To mitigate the problem of over-dependence of a pseudo-relevance feedback algorithm on the top-M document set, we make use of a set of equivalence classes of queries rather than one single query.
- 14, TITLE: Learning Graph-Based Geographical Latent Representation for Point-of-Interest Recommendation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411905>  
AUTHORS: Buru Chang, Gwanghoon Jang, Seoyoon Kim, Jaewoo Kang  
HIGHLIGHT: In this paper, we propose a new graph-based geographical latent representation model (GGLR) which can capture highly non-linear geographical influences from complex user-POI networks.
- 15, TITLE: Continuous-Time Dynamic Graph Learning via Neural Interaction Processes  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411946>  
AUTHORS: Xiaofu Chang, Xuqin Liu, Jianfeng Wen, Shuang Li, Yanming Fang, Le Song, Yuan Qi  
HIGHLIGHT: To achieve this, we propose a principled graph-neural-based approach to learn continuous-time dynamic embeddings.
- 16, TITLE: TGCN: Tag Graph Convolutional Network for Tag-Aware Recommendation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411927>  
AUTHORS: Bo Chen, Wei Guo, Ruiming Tang, Xin Xin, Yue Ding, Xiuqiang He, Dong Wang  
HIGHLIGHT: In this paper, we propose a novel tag-aware recommendation model named Tag Graph Convolutional Network (TGCN), which leverages the contextual semantics of multi-hop neighbors in the user-tag-item graph to alleviate the above issues.
- 17, TITLE: An Adaptive Embedding Framework for Heterogeneous Information Networks  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411989>  
AUTHORS: Daoyuan Chen, Yaliang Li, Bolin Ding, Ying Shen  
HIGHLIGHT: In this paper, we propose a novel adaptive embedding framework, which integrates these two kinds of methods to preserve both topological information and relational information.
- 18, TITLE: Improving End-to-End Sequential Recommendations with Intent-aware Diversification  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411897>  
AUTHORS: Wanyu Chen, Pengjie Ren, Fei Cai, Fei Sun, Maarten de Rijke  
HIGHLIGHT: We consider both accuracy and diversity by reformulating&nbsp;SRs&nbsp;as a list generation task, and propose an integrated approach with an end-to-end neural model, called intent-aware&nbsp;diversified&nbsp;sequential recommendation (IDSR).
- 19, TITLE: Unsupervised Cyberbullying Detection via Time-Informed Gaussian Mixture Model  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411934>  
AUTHORS: Lu Cheng, Kai Shu, Siqi Wu, Yasin N. Silva, Deborah L. Hall, Huan Liu  
HIGHLIGHT: To address these limitations, this work introduces a principled approach for unsupervised cyberbullying detection.
- 20, TITLE: Product Quality Prediction with Convolutional Encoder-Decoder Architecture and Transfer Learning  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412007>  
AUTHORS: Hao-Yi Chih, Yao-Chung Fan, Wen-Chih Peng, Hai-Yuan Kuo  
HIGHLIGHT: In this paper, we propose a deep convolutional model for predicting wafer fabrication quality in an intelligent integrated-circuit manufacturing application.

- 21, TITLE: Matching in Selective and Balanced Representation Space for Treatment Effects Estimation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412037>  
AUTHORS: Zhixuan Chu, Stephen L. Rathbun, Sheng Li  
HIGHLIGHT: We propose a feature selection representation matching (FSRM) method based on deep representation learning and matching, which maps the original covariate space into a selective, nonlinear, and balanced representation space, and then conducts matching in the learned representation space.
- 22, TITLE: TPR: Text-aware Preference Ranking for Recommender Systems  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411969>  
AUTHORS: Yu-Neng Chuang, Chih-Ming Chen, Chuan-Ju Wang, Ming-Feng Tsai, Yuan Fang, Ee-Peng Lim  
HIGHLIGHT: In this work, we present a framework of text-aware preference ranking (TPR) for top- recommendation, in which we comprehensively model the joint association of user-item interaction and relations between items and associated text.
- 23, TITLE: Offline Evaluation by Maximum Similarity to an Ideal Ranking  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411915>  
AUTHORS: Charles L. A. Clarke, Mark D. Smucker, Alexandra Vtyurina  
HIGHLIGHT: Rather than propose extensions to these measures, we instead propose a radical simplification to replace them.
- 24, TITLE: EPNet: Learning to Exit with Flexible Multi-Branch Network  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411973>  
AUTHORS: Xin Dai, Xiangnan Kong, Tian Guo  
HIGHLIGHT: In this paper, we investigate the problem of designing a flexible multi-branch network and early-exiting policies that can adapt to the resource consumption to individual inference request without impacting the inference accuracy.
- 25, TITLE: Cola-GNN: Cross-location Attention based Graph Neural Networks for Long-term ILI Prediction  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411975>  
AUTHORS: Songgaojun Deng, Shusen Wang, Huzefa Rangwala, Lijing Wang, Yue Ning  
HIGHLIGHT: In this paper, we design a cross-location attention based graph neural network (Cola-GNN) for learning time series embeddings in long-term ILI predictions.
- 26, TITLE: Opinion-aware Answer Generation for Review-driven Question Answering in E-Commerce  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411904>  
AUTHORS: Yang Deng, Wenxuan Zhang, Wai Lam  
HIGHLIGHT: In this paper, we tackle opinion-aware answer generation by jointly learning answer generation and opinion mining tasks with a unified model.
- 27, TITLE: UPON: User Profile Transferring across Networks  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411964>  
AUTHORS: Mengting Diao, Zhongbao Zhang, Sen Su, Shuai Gao, Huafeng Cao  
HIGHLIGHT: Motivated by such observations, in this paper, we for the first time propose to study the user profiling problem from the transfer learning perspective.
- 28, TITLE: Evaluating Stochastic Rankings with Expected Exposure  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411962>  
AUTHORS: Fernando Diaz, Bhaskar Mitra, Michael D. Ekstrand, Asia J. Biega, Ben Carterette  
HIGHLIGHT: We introduce the concept of expected exposure as the average attention ranked items receive from users over repeated samples of the same query.
- 29, TITLE: Towards Plausible Differentially Private ADMM Based Distributed Machine Learning  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411860>  
AUTHORS: Jiahao Ding, Jingyi Wang, Guannan Liang, Jinbo Bi, Miao Pan  
HIGHLIGHT: In this paper, we address these concerns by proposing a novel (Improved) Plausible differentially Private ADMM algorithm, called PP-ADMM and IPP-ADMM.
- 30, TITLE: Graph Prototypical Networks for Few-shot Learning on Attributed Networks  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411922>  
AUTHORS: Kaize Ding, Jianling Wang, Jundong Li, Kai Shu, Chenghao Liu, Huan Liu  
HIGHLIGHT: To answer these questions, in this paper, we propose a graph meta-learning framework -- Graph Prototypical Networks (GPN).

- 31, TITLE: Neural Formatting for Spreadsheet Tables  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411943>  
AUTHORS: Haoyu Dong Dong, Jinyu Wang, Zhouyu Fu, Shi Han, Dongmei Zhang  
HIGHLIGHT: In this paper, we propose CellGAN, a neural formatting model for learning and recommending formats of spreadsheet tables.
- 32, TITLE: Enhancing Graph Neural Network-based Fraud Detectors against Camouflaged Fraudsters  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411903>  
AUTHORS: Yingtong Dou, Zhiwei Liu, Li Sun, Yutong Deng, Hao Peng, Philip S. Yu  
HIGHLIGHT: Alternatively, we propose a new model named CAouflage-RESistant GNN (CARE-GNN), to enhance the GNN aggregation process with three unique modules against camouflages.
- 33, TITLE: Towards Generalizable Deepfake Detection with Locality-aware AutoEncoder  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411892>  
AUTHORS: Mengnan Du, Shiva Pentylala, Yuening Li, Xia Hu  
HIGHLIGHT: Motivated by the fine-grained nature and spatial locality characteristics of deepfakes, we propose Locality-Aware AutoEncoder (LAE) to bridge the generalization gap.
- 34, TITLE: Quality-Aware Ranking of Arguments  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411960>  
AUTHORS: Lorik Dumani, Ralf Schenkel  
HIGHLIGHT: We present a quality-aware ranking framework for arguments already extracted from texts and represented as argument graphs, considering multiple established quality measures.
- 35, TITLE: RelSen: An Optimization-based Framework for Simultaneously Sensor Reliability Monitoring and Data Cleaning  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411942>  
AUTHORS: Cheng Feng, Xiao Liang, Daniel Schneegass, PengWei Tian  
HIGHLIGHT: In this work, we propose RelSen, a novel optimization-based framework to address the two problems simultaneously via utilizing the mutual dependence between them.
- 36, TITLE: Critically Examining the Claimed Value of Convolutions over User-Item Embedding Maps for Recommender Systems  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411901>  
AUTHORS: Maurizio Ferrari Dacrema, Federico Parroni, Paolo Cremonesi, Dietmar Jannach  
HIGHLIGHT: In this work, we show through analytical considerations and empirical evaluations that the claimed gains reported in the literature cannot be attributed to the ability of CNNs to model embedding correlations, as argued in the original papers.
- 37, TITLE: Query-to-Session Matching: Do NOT Forget History and Future during Response Selection for Multi-Turn Dialogue Systems  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411938>  
AUTHORS: Zhenxin Fu, Shaobo Cui, Feng Ji, Ji Zhang, Haiqing Chen, Dongyan Zhao, Rui Yan  
HIGHLIGHT: Inspired by such motivation, we propose a query-to-session matching (QSM) framework to make full use of the session information: matching the query with the candidate session instead of the response only.
- 38, TITLE: Learning from Textual Data in Database Systems  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412056>  
AUTHORS: Michael G&uuml;nther, Philipp Oehme, Maik Thiele, Wolfgang Lehner  
HIGHLIGHT: We defined relation retrofitting as an optimization problem, present an efficient algorithm solving it, and investigate the influence of various hyperparameters.
- 39, TITLE: Rotate3D: Representing Relations as Rotations in Three-Dimensional Space for Knowledge Graph Embedding  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411889>  
AUTHORS: Chang Gao, Chengjie Sun, Lili Shan, Lei Lin, Mingjiang Wang  
HIGHLIGHT: To address this issue, we propose a new model called Rotate3D, which maps entities to the three-dimensional space and defines relations as rotations from head entities to tail entities.
- 40, TITLE: Set-Sequence-Graph: A Multi-View Approach Towards Exploiting Reviews for Recommendation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411939>

AUTHORS: Jingyue Gao, Yang Lin, Yasha Wang, Xiting Wang, Zhao Yang, Yuanduo He, Xu Chu  
HIGHLIGHT: To overcome these limitations, we propose a multi-view approach named Set-Sequence-Graph (SSG), to augment existing single-view (i.e., view of set) methods by introducing two additional views of exploiting reviews: sequence and graph.

41, TITLE: How and Why is An Answer (Still) Correct? Maintaining Provenance in Dynamic Knowledge Graphs  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411958>

AUTHORS: Garima Gaur, Arnab Bhattacharya, Srikanta Bedathur  
HIGHLIGHT: Addressing this issue, we present a framework HUKA that uses provenance polynomials for tracking the derivation of query results over knowledge graphs by encoding the edges involved in generating the answer.

42, TITLE: MICK: A Meta-Learning Framework for Few-shot Relation Classification with Small Training Data  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411858>

AUTHORS: Xiaoqing Geng, Xiwen Chen, Kenny Q. Zhu, Libin Shen, Yingdong Zhao  
HIGHLIGHT: In this paper, we tackle an even harder problem by further limiting the amount of data available at training time.

43, TITLE: Knowledge Graph Embedding Preserving Soft Logical Regularity  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412055>

AUTHORS: Shu Guo, Lin Li, Zhen Hui, Lingshuai Meng, Bingnan Ma, Wei Liu, Lihong Wang, Haibin Zhai, Hong Zhang  
HIGHLIGHT: This paper proposes a highly scalable and effective method for preserving soft logical regularities by imposing soft rule constraints on relation representations.

44, TITLE: GraSeq: Graph and Sequence Fusion Learning for Molecular Property Prediction  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411981>

AUTHORS: Zhichun Guo, Wenhao Yu, Chuxu Zhang, Meng Jiang, Nitesh V. Chawla  
HIGHLIGHT: In this paper, we propose GraSeq, a joint graph and sequence representation learning model for molecular property prediction.

45, TITLE: Modelling User Behavior Dynamics with Embeddings

<https://dl.acm.org/doi/abs/10.1145/3340531.3411985>

AUTHORS: Lei Han, Alessandro Checco, Djellel Difallah, Gianluca Demartini, Shazia Sadiq  
HIGHLIGHT: In this paper, we present a user behavior model built using behavior embeddings to compare behaviors and their change over time.

46, TITLE: Genetic Meta-Structure Search for Recommendation on Heterogeneous Information Network  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412015>

AUTHORS: Zhenyu Han, Fengli Xu, Jinghan Shi, Yu Shang, Haorui Ma, Pan Hui, Yong Li  
HIGHLIGHT: To address these challenges, we propose Genetic Meta-Structure Search (GEMS) to automatically optimize meta-structure designs for recommendation on HINs.

47, TITLE: Ranking Enhanced Dialogue Generation

<https://dl.acm.org/doi/abs/10.1145/3340531.3411918>

AUTHORS: Changying Hao, Liang Pang, Yanyan Lan, Fei Sun, Jiafeng Guo, Xueqi Cheng  
HIGHLIGHT: To tackle this problem, we propose a Ranking Enhanced Dialogue generation framework in this paper.

48, TITLE: Privacy-Preserving Classification with Secret Vector Machines

<https://dl.acm.org/doi/abs/10.1145/3340531.3412051>

AUTHORS: Valentin Hartmann, Konark Modi, Josep M. Pujol, Robert West  
HIGHLIGHT: We address this issue by proposing a novel way of training a supervised classifier in a distributed setting akin to the recently proposed federated learning paradigm, but under the stricter privacy requirement that the server that trains the model is assumed to be untrusted and potentially malicious.

49, TITLE: Learning to Selectively Update State Neurons in Recurrent Networks

<https://dl.acm.org/doi/abs/10.1145/3340531.3412018>

AUTHORS: Thomas Hartvigsen, Cansu Sen, Xiangnan Kong, Elke Rundensteiner  
HIGHLIGHT: To overcome this, we instead design the first fully-learned approach, SA-RNN, that augments any RNN by predicting discrete update patterns at the fine granularity of individual hidden state neurons.

50, TITLE: Hypergraph Random Walks, Laplacians, and Clustering

<https://dl.acm.org/doi/abs/10.1145/3340531.3412034>

AUTHORS: Koby Hayashi, Sinan G. Aksoy, Cheong Hee Park, Haesun Park  
HIGHLIGHT: We propose a flexible framework for clustering hypergraph-structured data based on recently proposed random walks utilizing edge-dependent vertex weights.

51, TITLE: VN Network: Embedding Newly Emerging Entities with Virtual Neighbors  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411865>  
AUTHORS: Yongquan He, Zhihan Wang, Peng Zhang, Zhaopeng Tu, Zhaochun Ren  
HIGHLIGHT: In this paper, we propose a novel framework, namely Virtual Neighbor (VN) network, to address three key challenges.

52, TITLE: WMEgo: Willingness Maximization for Ego Network Data Extraction in Online Social Networks  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411867>  
AUTHORS: Bay-Yuan Hsu, Chih-Ya Shen, Ming-Yi Chang  
HIGHLIGHT: Therefore, in this paper, we make our first attempt to address this issue by proposing a new research problem, named Willingness Maximization for Ego Network Extraction in Online Social Networks (WMEgo), to identify a set of ego networks from the OSN such that the willingness of the users to contribute their data is maximized.

53, TITLE: Learning to Detect Relevant Contexts and Knowledge for Response Selection in Retrieval-based Dialogue Systems  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411967>  
AUTHORS: Kai Hua, Zhiyuan Feng, Chongyang Tao, Rui Yan, Lu Zhang  
HIGHLIGHT: To address this problem, we propose a multi-turn Response Selection Model that can Detect the relevant parts of the Context and Knowledge collection (RSM-DCK).

54, TITLE: Image Captioning with Internal and External Knowledge  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411948>  
AUTHORS: Feicheng Huang, Zhixin Li, Shengjia Chen, Canlong Zhang, Huifang Ma  
HIGHLIGHT: In this paper, we make our efforts to reason about more accurate and meaningful captions.

55, TITLE: GNNVis: Visualize Large-Scale Data by Learning a Graph Neural Network Representation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411987>  
AUTHORS: Yajun Huang, Jingbin Zhang, Yiyang Yang, Zhiguo Gong, Zhifeng Hao  
HIGHLIGHT: In this work, we study the parametric (supervised) model which is capable to learn a mapping between high-dimensional data space  $R_d$  and low-dimensional latent space  $R_s$  with similarity structure in  $R_d$  preserved where  $s \ll d$ .

56, TITLE: Predicting Economic Growth by Region Embedding: A Multigraph Convolutional Network Approach  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411882>  
AUTHORS: Bo Hui, Da Yan, Wei-Shinn Ku, Wenlu Wang  
HIGHLIGHT: By effectively utilizing open data on the Internet such as government data (e.g., from US Census Bureau) and third-party data for supervised learning, we propose to first construct a multigraph that captures the various relationships between regions such as direct flight connections and shared school districts, and then learn region embeddings using a novel graph convolutional network architecture.

57, TITLE: Sequential Recommender via Time-aware Attentive Memory Network  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411869>  
AUTHORS: Wendi Ji, Keqiang Wang, Xiaoling Wang, Tingwei Chen, Alexandra Cristea  
HIGHLIGHT: In this paper, we propose a temporal gating methodology to improve attention mechanism and recurrent units, so that temporal information can be considered in both information filtering and state transition.

58, TITLE: MARU: Meta-context Aware Random Walks for Heterogeneous Network Representation Learning  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412040>  
AUTHORS: Jyun-Yu Jiang, Zeyu Li, Chelsea J.-T. Ju, Wei Wang  
HIGHLIGHT: In this paper, we propose Meta-context Aware Random Walks (MARU) to overcome these challenges, thereby learning richer and more unbiased representations for heterogeneous networks.

59, TITLE: Partial Relationship Aware Influence Diffusion via a Multi-channel Encoding Scheme for Social Recommendation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412016>  
AUTHORS: Bo Jin, Ke Cheng, Liang Zhang, Yanjie Fu, Minghao Yin, Lu Jiang  
HIGHLIGHT: To this end, we propose a partial relationship aware influence diffusion structure via a computationally efficient multi-channel encoding scheme.

- 60, TITLE: Social Factors in Closed-Network Content Consumption  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411935>  
AUTHORS: Parisa Kaghazgaran, Maarten Bos, Leonardo Neves, Neil Shah  
HIGHLIGHT: We propose models for patterns in users' time-spending behaviors across friends, and observe that viewers preferentially and consistently spend more time on content from certain friends, even without considering any explicit notion of intrinsic content value.
- 61, TITLE: DE-RRD: A Knowledge Distillation Framework for Recommender System  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412005>  
AUTHORS: SeongKu Kang, Junyoung Hwang, Wonbin Kweon, Hwanjo Yu  
HIGHLIGHT: In this paper, we propose a novel knowledge distillation framework for recommender system, called DE-RRD, which enables the student model to learn from the latent knowledge encoded in the teacher model as well as from the teacher's predictions.
- 62, TITLE: Collective Embedding with Feature Importance: A Unified Approach for Spatiotemporal Network Embedding  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412030>  
AUTHORS: Dakshak Keerthi Chandra, Pengyang Wang, Jennifer Leopold, Yanjie Fu  
HIGHLIGHT: In this paper, we propose a collective embedding framework that leverages the use of auto-encoders and Laplacian score to learn effective embeddings of spatiotemporal networks of urban communities.
- 63, TITLE: AutoFeature: Searching for Feature Interactions and Their Architectures for Click-through Rate Prediction  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411912>  
AUTHORS: Farhan Khawar, Xu Hang, Ruiming Tang, Bin Liu, Zhenguo Li, Xiuqiang He  
HIGHLIGHT: To address these issues, we propose a neural architecture search based approach called AutoFeature that automatically finds essential feature interactions and selects an appropriate structure to model each of these interactions.
- 64, TITLE: Selecting Influential Features by a Learnable Content-Aware Linear Threshold Model  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411886>  
AUTHORS: Ansh Khurana, Alvis Logins, Panagiotis Karras  
HIGHLIGHT: We propose a method that learns the parameters of the CALT model and adapt the SimPath diffusion estimation method to build a heuristic for the influential feature selection problem.
- 65, TITLE: Describing and Predicting Online Items with Reshare Cascades via Dual Mixture Self-exciting Processes  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411861>  
AUTHORS: Quyu Kong, Marian-Andrei Rizoiu, Lexing Xie  
HIGHLIGHT: This work addresses these shortcomings by proposing dual mixture self-exciting processes to jointly learn from groups of cascades.
- 66, TITLE: Extracting N-ary Facts from Wikipedia Table Clusters  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412027>  
AUTHORS: Benno Kruit, Peter Boncz, Jacopo Urbani  
HIGHLIGHT: We propose a novel knowledge extraction technique that tackles these problems.
- 67, TITLE: Live Multi-Streaming and Donation Recommendations via Coupled Donation-Response Tensor Factorization  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411925>  
AUTHORS: Hsu-Chao Lai, Jui-Yi Tsai, Hong-Han Shuai, Jiun-Long Huang, Wang-Chien Lee, De-Nian Yang  
HIGHLIGHT: In this paper, we introduce Multi-Stream Party (MSP) and formulate a new multi-streaming recommendation problem, called Donation and MSP Recommendation (DAMRec).
- 68, TITLE: MERL: Multi-View Edge Representation Learning in Social Networks  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412049>  
AUTHORS: Yi-Yu Lai, Jennifer Neville  
HIGHLIGHT: In this paper, we propose a new methodology, MERL, that (1) captures asymmetry in multiple views by learning well-defined edge representations that are responsive to the difference between the source and destination node roles, and (2) incorporates textual communications to identify multiple source of social signals (e.g. strength and affinity) that moderate the impact of different views between users.
- 69, TITLE: Towards Temporal Knowledge Graph Embeddings with Arbitrary Time Precision  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412028>

- AUTHORS: Julien Leblay, Melisachew Wudage Chekol, Xin Liu  
HIGHLIGHT: In this work, we introduce and evaluate an approach that gracefully adjusts to time validity of virtually any granularity.
- 70, TITLE: News Recommendation with Topic-Enriched Knowledge Graphs  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411932>  
AUTHORS: Dongho Lee, Byungkook Oh, Seungmin Seo, Kyong-Ho Lee  
HIGHLIGHT: To cope with the above problem, in this paper, we propose Topic-Enriched Knowledge Graph Recommendation System (TEKGR).
- 71, TITLE: Cross-sentence N-ary Relation Extraction using Entity Link and Discourse Relation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412011>  
AUTHORS: Sanghak Lee, Seungmin Seo, Byungkook Oh, Kyong-Ho Lee, Donghoon Shin, Yeonsoo Lee  
HIGHLIGHT: This paper presents an efficient method of extracting n-ary relations from multiple sentences which is called Entity-path and Discourse relation-centric Relation Extractor (EDCRE).
- 72, TITLE: Knowledge Adaption for Demand Prediction based on Multi-task Memory Neural Network  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411965>  
AUTHORS: Can Li, Lei Bai, Wei Liu, Lina Yao, S. Travis Waller  
HIGHLIGHT: As such, we propose to enhance the demand prediction of station-sparse modes with the data from station-intensive mode and design a Memory-Augmented Multi-task Recurrent Network (MATURE) to derive the transferable demand patterns from each mode and boost the prediction of station-sparse modes through adapting the relevant patterns from the station-intensive mode.
- 73, TITLE: Learning with Noisy Partial Labels by Simultaneously Leveraging Global and Local Consistencies  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411885>  
AUTHORS: Changchun Li, Ximing Li, Jihong Ouyang  
HIGHLIGHT: To alleviate this problem, we propose a novel PL method, namely Partial label learning by simultaneously leveraging Global and Local consistencies (Pangolin).
- 74, TITLE: Knowledge-Enhanced Personalized Review Generation with Capsule Graph Neural Network  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411893>  
AUTHORS: Junyi Li, Siqing Li, Wayne Xin Zhao, Gaole He, Zhicheng Wei, Nicholas Jing Yuan, Ji-Rong Wen  
HIGHLIGHT: To address the above issues, we propose a novel knowledge-enhanced PRG model based on capsule graph neural network (CapsGNN).
- 75, TITLE: Seed-free Graph De-anonymization with Adversarial Learning  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411970>  
AUTHORS: Kaiyang Li, Guoming Lu, Guangchun Luo, Zhipeng Cai  
HIGHLIGHT: In this paper, a seed-free graph de-anonymization method is proposed, where a deep neural network is adopted to learn features and an adversarial framework is employed for node matching.
- 76, TITLE: Generate Neural Template Explanations for Recommendation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411992>  
AUTHORS: Lei Li, Yongfeng Zhang, Li Chen  
HIGHLIGHT: In an attempt to benefit both sentence expressiveness and quality, we propose a Neural Template (NETE) explanation generation framework, which brings the best of both worlds by learning sentence templates from data and generating template-controlled sentences that comment about specific features.
- 77, TITLE: A Topic and Concept Integrated Model for Thread Recommendation in Online Health Communities  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411933>  
AUTHORS: Mingda Li, Weiting Gao, Yi Chen  
HIGHLIGHT: To help users find relevant information easily, we present CLIR, an effective system for recommending relevant discussion threads to users in OHCs.
- 78, TITLE: Trapping Malicious Crawlers in Social Networks  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412004>  
AUTHORS: Shiju Li, Chul-Ho Lee, Do Young Eun  
HIGHLIGHT: In this paper, we study a problem of trapping malicious web crawlers in social networks to minimize the attacks from crawlers with malicious intents to steal personal/private information.



- 79, TITLE: Deep Time-Aware Item Evolution Network for Click-Through Rate Prediction  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411952>  
AUTHORS: Xiang Li, Chao Wang, Bin Tong, Jiwei Tan, Xiaoyi Zeng, Tao Zhuang  
HIGHLIGHT: In this work, we propose a CTR prediction model TIEN based on the time-aware item behavior.
- 80, TITLE: Learning Better Representations for Neural Information Retrieval with Graph Information  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411957>  
AUTHORS: Xiangsheng Li, Maarten de Rijke, Yiqun Liu, Jiabin Mao, Weizhi Ma, Min Zhang, Shaoping Ma  
HIGHLIGHT: In this study, we aim to incorporate this rich information encoded in these two graphs into existing neural ranking models.
- 81, TITLE: Cooperative Multi-Agent Reinforcement Learning in Express System  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411871>  
AUTHORS: Yexin Li, Yu Zheng, Qiang Yang  
HIGHLIGHT: In this paper, we propose a reinforcement learning based framework to learn courier dispatching policies.
- 82, TITLE: Meta-Learning for Neural Relation Classification with Distant Supervision  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412039>  
AUTHORS: Zhenzhen Li, Jian-Yun Nie, Benyou Wang, Pan Du, Yuhang Zhang, Lixin Zou, Dongsheng Li  
HIGHLIGHT: In this paper, we propose a meta-learning based approach, which learns to reweight noisy training data under the guidance of reference data.
- 83, TITLE: Aspect-invariant Sentiment Features Learning: Adversarial Multi-task Learning for Aspect-based Sentiment Analysis  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411868>  
AUTHORS: Bin Liang, Rongdi Yin, Lin Gui, Jiachen Du, Yulan He, Ruifeng Xu  
HIGHLIGHT: Hence, in this paper, we propose an Adversarial Multi-task Learning framework to identify the aspect-invariant/dependent sentiment expressions without extra annotations.
- 84, TITLE: Attributed Network Embedding based on Mutual Information Estimation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412008>  
AUTHORS: Xiaomin Liang, Daifeng Li, Andrew Madden  
HIGHLIGHT: We attempt to use local embeddings to represent local aspect information and propose InfomaxANE which encodes both global and local embeddings from the perspective of mutual information.
- 85, TITLE: STP-UDGAT: Spatial-Temporal-Preference User Dimensional Graph Attention Network for Next POI Recommendation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411876>  
AUTHORS: Nicholas Lim, Bryan Hooi, See-Kiong Ng, Xueou Wang, Yong Liang Goh, Renrong Weng, Jagannadan Varadarajan  
HIGHLIGHT: In this work, we propose a Spatial-Temporal-Preference User Dimensional Graph Attention Network (STP-UDGAT), a novel explore-exploit model that concurrently exploits personalized user preferences and explores new POIs in global spatial-temporal-preference (STP) neighbourhoods, while allowing users to selectively learn from other users.
- 86, TITLE: Attacking Recommender Systems with Augmented User Profiles  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411884>  
AUTHORS: Chen Lin, Si Chen, Hui Li, Yanghua Xiao, Lianyun Li, Qian Yang  
HIGHLIGHT: In this paper, we study the shilling attack: a subsistent and profitable attack where an adversarial party injects a number of user profiles to promote or demote a target item.
- 87, TITLE: Jointly Modeling Individual Student Behaviors and Social Influence for Prediction Tasks  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411961>  
AUTHORS: Haobing Liu, Yanmin Zhu, Tianzi Zang, Jiadi Yu, Haibin Cai  
HIGHLIGHT: In this paper, we aim to propose a general deep neural network which can jointly model student heterogeneous daily behaviors generated from digital footprints and social influence to deal with prediction tasks.
- 88, TITLE: Fusing Parallel Social Contexts within Flexible-Order Proximity for Microblog Topic Detection  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412024>  
AUTHORS: Hongyu Liu, Ruifang He, Haocheng Wang, Bo Wang

**HIGHLIGHT:** To this end, we propose a novel random walk based Parallel Social Contexts Fusion Topic Model (PCFTM) for weibo conversations.

89, **TITLE:** Cross Domain Recommendation via Bi-directional Transfer Graph Collaborative Filtering Networks  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412012>  
**AUTHORS:** Meng Liu, Jianjun Li, Guohui Li, Peng Pan  
**HIGHLIGHT:** In this paper, we propose a novel Bi-directional Transfer learning method for cross-domain recommendation by using Graph Collaborative Filtering network as the base model (BiTGCF).

90, **TITLE:** Explainable Recommender Systems via Resolving Learning Representations  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411919>  
**AUTHORS:** Ninghao Liu, Yong Ge, Li Li, Xia Hu, Rui Chen, Soo-Hyun Choi  
**HIGHLIGHT:** In this paper, after formally introducing the elements that are related to model explainability, we propose a novel explainable recommendation model through improving the transparency of the representation learning process.

91, **TITLE:** Deep Spatio-Temporal Multiple Domain Fusion Network for Urban Anomalies Detection  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411920>  
**AUTHORS:** Ruiqiang Liu, Shuai Zhao, Bo Cheng, Hao Yang, Haina Tang, Taoyu Li  
**HIGHLIGHT:** In this paper, we propose a novel end-to-end deep learning based framework, namely deep spatio-temporal multiple domain fusion network to collect the impacts of urban anomalies on multiple datasets and detect anomalies in each region of the city at next time interval in turn.

92, **TITLE:** Structural Relationship Representation Learning with Graph Embedding for Personalized Product Search  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411936>  
**AUTHORS:** Shang Liu, Wanli Gu, Gao Cong, Fuzheng Zhang  
**HIGHLIGHT:** In this work, we propose to consider structural relationship in users' product search scenario with graph embedding by latent representation learning.

93, **TITLE:** Personalized Re-ranking with Item Relationships for E-commerce  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412332>  
**AUTHORS:** Weiwen Liu, Qing Liu, Ruiming Tang, Junyang Chen, Xiuqiang He, Pheng Ann Heng  
**HIGHLIGHT:** We develop a graph neural network based framework, IRGPR, to explicitly model transitive item relationships by recursively aggregating relational information from multi-hop neighborhoods.

94, **TITLE:** An NVM SSD-Optimized Query Processing Framework  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412010>  
**AUTHORS:** Xinyu Liu, Yu Pan, Yusen Li, Gang Wang, Xiaoguang Liu  
**HIGHLIGHT:** In this paper, we propose an NVM SSD-optimized query processing framework, aiming to address both the latency and bandwidth issues of using NVM in search engines.

95, **TITLE:** Shapley Values and Meta-Explanations for Probabilistic Graphical Model Inference  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411881>  
**AUTHORS:** Yifei Liu, Chao Chen, Yazheng Liu, Xi Zhang, Sihong Xie  
**HIGHLIGHT:** As brute-force computation of the Shapley values is challenging, we propose GraphShapley, an approximation algorithm that exploits the decomposability of Shapley values, the structure of MRFs, and the iterative nature of BP inference to speed up the computation.

96, **TITLE:** Recommending Inferior Results: A General and Feature-Free Model for Spam Detection  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411900>  
**AUTHORS:** Yuli Liu  
**HIGHLIGHT:** To further boost detection performance, we incorporate the pairwise ranking detection method and the widely used structure-based algorithm into an integrated framework.

97, **TITLE:** Towards Locality-Aware Meta-Learning of Tail Node Embeddings on Networks  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411910>  
**AUTHORS:** Zemin Liu, Wentao Zhang, Yuan Fang, Xinming Zhang, Steven C.H. Hoi  
**HIGHLIGHT:** To reduce overfitting in the personalization, we propose a locality-aware meta-learning framework, called meta-tail2vec, which learns to learn the regression model for the tail nodes at different localities.

98, **TITLE:** Feature Fusion Based Subgraph Classification for Link Prediction

- <https://dl.acm.org/doi/abs/10.1145/3340531.3411966>  
AUTHORS: Zheyi Liu, Darong Lai, Chuanyou Li, Meng Wang  
HIGHLIGHT: In this study, we established the Subgraph Hierarchy Feature Fusion (SHFF) model for link prediction.
- 99, TITLE: Fast Attributed Multiplex Heterogeneous Network Embedding  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411944>  
AUTHORS: Zhijun Liu, Chao Huang, Yanwei Yu, Baode Fan, Junyu Dong  
HIGHLIGHT: In this work, we propose a Fast Attributed Multiplex heterogeneous network Embedding framework (FAME) for large-scale network data, by mapping the units from different modalities (i.e., network topological structures, various node features and relations) into the same latent space in a very efficient way.
- 100, TITLE: Dynamic Representation Learning for Large-Scale Attributed Networks  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411945>  
AUTHORS: Zhijun Liu, Chao Huang, Yanwei Yu, Peng Song, Baode Fan, Junyu Dong  
HIGHLIGHT: In this work, we address these challenges by developing the DRLAN-Dynamic Representation Learning framework for large-scale Attributed Networks.
- 101, TITLE: Dual Head-wise Coattention Network for Machine Comprehension with Multiple-Choice Questions  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412013>  
AUTHORS: Zhuang Liu, Kaiyu Huang, Degen Huang, Zhuang Liu, Jun Zhao  
HIGHLIGHT: In this paper, we present a novel architecture, Dual Head-wise Coattention network (called DHC), which is a simple and efficient attention neural network designed to perform multiple-choice MC task.
- 102, TITLE: Spatiotemporal Adaptive Gated Graph Convolution Network for Urban Traffic Flow Forecasting  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411894>  
AUTHORS: Bin Lu, Xiaoying Gan, Haiming Jin, Luoyi Fu, Haisong Zhang  
HIGHLIGHT: In this paper, we exploit spatiotemporal correlation of urban traffic flow and construct a dynamic weighted graph by seeking both spatial neighbors and semantic neighbors of road nodes.
- 103, TITLE: Probabilistic Dynamic Non-negative Group Factor Model for Multi-source Text Mining  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411956>  
AUTHORS: Chien Lu, Jaakko Peltonen, Jyrki Nummenmaa, Kalervo Järvelin  
HIGHLIGHT: We introduce a probabilistic, Gaussian Process-based, more inclusive NMF-based model which jointly analyzes nonnegative data such as text data word content from multiple sources in a temporal dynamic manner.
- 104, TITLE: Hierarchical Active Learning with Overlapping Regions  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412022>  
AUTHORS: Zhipeng Luo, Milos Hauskrecht  
HIGHLIGHT: To minimize the number and complexity of region-based queries, we propose and develop a hierarchical active learning solution that aims at incrementally building a concise hierarchy of regions.
- 105, TITLE: Adaptive-Step Graph Meta-Learner for Few-Shot Graph Classification  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411951>  
AUTHORS: Ning Ma, Jiajun Bu, Jieyu Yang, Zhen Zhang, Chengwei Yao, Zhi Yu, Sheng Zhou, Xifeng Yan  
HIGHLIGHT: More specifically, (1) we propose a novel framework consisting of a graph meta-learner, which uses GNNs based modules for fast adaptation on graph data, and a step controller for the robustness and generalization of meta-learner; (2) we provide quantitative analysis for the framework and give a graph-dependent upper bound of the generalization error based on our framework; (3) the extensive experiments on real-world datasets demonstrate that our framework gets state-of-the-art results on several few-shot graph classification tasks compared to baselines.
- 106, TITLE: Feature Selection on Data Stream via Multi-Cluster Structure Preservation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411928>  
AUTHORS: Rui Ma, Yijie Wang, Li Cheng  
HIGHLIGHT: To address this issue, we propose an online unsupervised Feature Selection method via Multi-Cluster structure Preservation (FSMCP for short).
- 107, TITLE: PSTIE: Time Information Enhanced Personalized Search  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411877>  
AUTHORS: Zhengyi Ma, Zhicheng Dou, Guanyue Bian, Ji-Rong Wen  
HIGHLIGHT: In this paper, we propose PSTIE, a fine-grained Time Information Enhanced model to construct more accurate user interest representations for Personalized Search.

- 108, TITLE: Examining the Additivity of Top-k Query Processing Innovations  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412000>  
AUTHORS: Joel Mackenzie, Alistair Moffat  
HIGHLIGHT: We employ four query processing algorithms, four compression codecs, and all possible combinations of four distinct further optimizations, and compare the performance of the 256 resulting systems to determine when and how different optimizations interact.
- 109, TITLE: Relational Reflection Entity Alignment  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412001>  
AUTHORS: Xin Mao, Wenting Wang, Huimin Xu, Yuanbin Wu, Man Lan  
HIGHLIGHT: In this paper, we abstract existing entity alignment methods into a unified framework, Shape-Builder & Alignment, which not only successfully explains the above phenomena but also derives two key criteria for an ideal transformation operation.
- 110, TITLE: CSNE: Conditional Signed Network Embedding  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411959>  
AUTHORS: Alexandru Mara, Yoosof Mashayekhi, Jeffrey Lijffijt, Tijl de Bie  
HIGHLIGHT: In this context, we introduce conditional signed network embedding (CSNE).
- 111, TITLE: Learning to Distract: A Hierarchical Multi-Decoder Network for Automated Generation of Long Distractors for Multiple-Choice Questions for Reading Comprehension  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411997>  
AUTHORS: Kaushal Kumar Maurya, Maunendra Sankar Desarkar  
HIGHLIGHT: In this paper, we propose a novel Hierarchical Multi-Decoder Network (HMD-Net) consisting of one encoder and three decoders, where each decoder generates a single distractor.
- 112, TITLE: "Keep it Simple, Lazy" -- MetaLazy: A New MetaStrategy for Lazy Text Classification  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412180>  
AUTHORS: Luiz Felipe Mendes, Marcos Goncalves, Washington Cunha, Leonardo Rocha, Thierson Couto-Rosa, Wellington Martins  
HIGHLIGHT: We propose a shift in the paradigm to do "more with less" by focusing, at maximum extent, just on the task at hand (e.g., classify a single test instance).
- 113, TITLE: A Methodology Based on Deep Q-Learning/Genetic Algorithms for Optimizing COVID-19 Pandemic Government Actions  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412179>  
AUTHORS: Luis Miralles-Pechu, Fernando Jimenez, Hiram Ponce, L. Martineze-Villaseor  
HIGHLIGHT: To optimize the best sequences of actions governments can take, we propose a methodology with two approaches, one based on Deep Q-Learning and another one based on Genetic Algorithms.
- 114, TITLE: SWE2: SubWord Enriched and Significant Word Emphasized Framework for Hate Speech Detection  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411990>  
AUTHORS: Guanyi Mou, Pengyi Ye, Kyumin Lee  
HIGHLIGHT: In this paper, we address the hate speech problem and propose a novel hate speech detection framework called SWE2, which only relies on the content of messages and automatically identifies hate speech.
- 115, TITLE: Deep Generative Positive-Unlabeled Learning under Selection Bias  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411971>  
AUTHORS: Byeonghu Na, Hyemi Kim, Kyungwoo Song, Weonyoung Joo, Yoon-Yeong Kim, Il-Chul Moon  
HIGHLIGHT: Therefore, we introduce the VAE-PU, which is a variant of variational autoencoders to separate two latent variables that generate either features or observation indicators.
- 116, TITLE: FANG: Leveraging Social Context for Fake News Detection Using Graph Representation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412046>  
AUTHORS: Van-Hoang Nguyen, Kazunari Sugiyama, Preslav Nakov, Min-Yen Kan  
HIGHLIGHT: We propose Factual News Graph (FANG), a novel graphical social context representation and learning framework for fake news detection.
- 117, TITLE: Uncovering Semantic Bias in Neural Network Models Using a Knowledge Graph

<https://dl.acm.org/doi/abs/10.1145/3340531.3412009>

AUTHORS: Andriy Nikolov, Mathieu d'Aquin

HIGHLIGHT: In this paper we apply rule mining using knowledge graphs in combination with neural network explanation methods to uncover such systematic preferences of trained neural models and capture them in the form of conjunctive rules.

118, TITLE: STP-TrellisNets: Spatial-Temporal Parallel TrellisNets for Metro Station Passenger Flow Prediction

<https://dl.acm.org/doi/abs/10.1145/3340531.3411874>

AUTHORS: Junjie Ou, Jiahui Sun, Yichen Zhu, Haiming Jin, Yijuan Liu, Fan Zhang, Jianqiang Huang, Xinbing Wang

HIGHLIGHT: Thus, in this paper, we aim to address the problem of accurately predicting metro station passenger (MSP) flows.

119, TITLE: Star Graph Neural Networks for Session-based Recommendation

<https://dl.acm.org/doi/abs/10.1145/3340531.3412014>

AUTHORS: Zhiqiang Pan, Fei Cai, Wanyu Chen, Honghui Chen, Maarten de Rijke

HIGHLIGHT: We propose Star Graph Neural Networks with Highway Networks (SGNN-HN) for session-based recommendation.

120, TITLE: RKT: Relation-Aware Self-Attention for Knowledge Tracing

<https://dl.acm.org/doi/abs/10.1145/3340531.3411994>

AUTHORS: Shalini Pandey, Jaideep Srivastava

HIGHLIGHT: In this paper, we propose a novel Relation-aware self-attention model for Knowledge Tracing (RKT).

121, TITLE: ST-GRAT: A Novel Spatio-temporal Graph Attention Networks for Accurately Forecasting Dynamically Changing Road Speed

<https://dl.acm.org/doi/abs/10.1145/3340531.3411940>

AUTHORS: Cheonbok Park, Chunggi Lee, Hyojin Bahng, Yunwon Tae, Seungmin Jin, Kihwan Kim, Sungahn Ko, Jaegul Choo

HIGHLIGHT: This paper proposes a novel spatio-temporal graph attention (ST-GRAT) that effectively captures the spatio-temporal dynamics in road networks.

122, TITLE: Minimal Edit-Based Diffs for Large Trees

<https://dl.acm.org/doi/abs/10.1145/3340531.3412026>

AUTHORS: Mateusz Pawlik, Nikolaus Augsten

HIGHLIGHT: In this paper, we leverage the fact that the difference between two versions of a tree is typically much smaller than the overall tree size.

123, TITLE: Efficient Detection of Data Dependency Violations

<https://dl.acm.org/doi/abs/10.1145/3340531.3412062>

AUTHORS: Eduardo H. M. Pena, Edson R. Lucas Filho, Eduardo C. de Almeida, Felix Naumann

HIGHLIGHT: We describe its execution model, which operates on a compressed block of tuples at-a-time, and we present various algorithms that take advantage of the predicate form in the DCs to provide effective code patterns.

124, TITLE: EnDeA: Ensemble based Decoupled Adversarial Learning for Identifying Infrastructure Damage during Disasters

<https://dl.acm.org/doi/abs/10.1145/3340531.3412020>

AUTHORS: Shalini Priya, Apoorva Upadhyaya, Manish Bhanu, Sourav Kumar Dandapat, Joydeep Chandra

HIGHLIGHT: In this paper we introduce an Ensemble learning approach with a Decoupled Adversarial (EnDeA) model to classify infrastructure damage tweets in a target tweet dataset.

125, TITLE: G-CREWE: Graph CompREssion With Embedding for Network Alignment

<https://dl.acm.org/doi/abs/10.1145/3340531.3411924>

AUTHORS: Kyle K. Qin, Flora D. Salim, Yongli Ren, Wei Shao, Mark Heimann, Danai Koutra

HIGHLIGHT: In this paper, we propose a framework, called G-CREWE (Graph CompREssion With Embedding) to solve the network alignment problem.

126, TITLE: Diversifying Search Results using Self-Attention Network

<https://dl.acm.org/doi/abs/10.1145/3340531.3411914>

AUTHORS: Xubo Qin, Zhicheng Dou, Ji-Rong Wen

HIGHLIGHT: In this paper, we propose a new supervised diversification framework to address this issue.

- 127, TITLE: Time-Efficient Geo-Obfuscation to Protect Worker Location Privacy over Road Networks in Spatial Crowdsourcing  
https://dl.acm.org/doi/abs/10.1145/3340531.3411863  
AUTHORS: Chenxi Qiu, Anna Squicciarini, Zhouzhao Li, Ce Pang, Li Yan  
HIGHLIGHT: In this paper, we tackle the SC worker location privacy problem over road networks.
- 128, TITLE: Hierarchical Query Graph Generation for Complex Question Answering over Knowledge Graph  
https://dl.acm.org/doi/abs/10.1145/3340531.3411888  
AUTHORS: Yunqi Qiu, Kun Zhang, Yuanzhuo Wang, Xiaolong Jin, Long Bai, Saiping Guan, Xueqi Cheng  
HIGHLIGHT: This paper proposes a Director-Actor-Critic framework to overcome these challenges.
- 129, TITLE: Robust Irregular Tensor Factorization and Completion for Temporal Health Data Analysis  
https://dl.acm.org/doi/abs/10.1145/3340531.3411982  
AUTHORS: Yifei Ren, Jian Lou, Li Xiong, Joyce C. Ho  
HIGHLIGHT: We propose REPAIR, a Robust tEmporal PARAFAC2 method for IRregular tensor factorization and completion method, to complete an irregular tensor and extract phenotypes in the presence of missing and erroneous values.
- 130, TITLE: The COVID-19 Infodemic: Can the Crowd Judge Recent Misinformation Objectively?  
https://dl.acm.org/doi/abs/10.1145/3340531.3412048  
AUTHORS: Kevin Roitero, Michael Soprano, Beatrice Portelli, Damiano Spina, Vincenzo Della Mea, Giuseppe Serra, Stefano Mizzaro, Gianluca Demartini  
HIGHLIGHT: We specifically target statements related to the COVID-19 health emergency, that is still ongoing at the time of the study and has arguably caused an increase of the amount of misinformation that is spreading online (a phenomenon for which the term "infodemic" has been used).
- 131, TITLE: ZSCRGAN: A GAN-based Expectation Maximization Model for Zero-Shot Retrieval of Images from Textual Descriptions  
https://dl.acm.org/doi/abs/10.1145/3340531.3411995  
AUTHORS: Anurag Roy, Vinay Kumar Verma, Kripabandhu Ghosh, Saptarshi Ghosh  
HIGHLIGHT: In this paper, we propose a novel GAN-based model for zero-shot text to image retrieval.
- 132, TITLE: Characteristic Functions on Graphs: Birds of a Feather, from Statistical Descriptors to Parametric Models  
https://dl.acm.org/doi/abs/10.1145/3340531.3411866  
AUTHORS: Benedek Rozemberczki, Rik Sarkar  
HIGHLIGHT: In this paper, we propose a flexible notion of characteristic functions defined on graph vertices to describe the distribution of vertex features at multiple scales.
- 133, TITLE: A GAN-based Framework for Modeling Hashtag Popularity Dynamics Using Assistive Information  
https://dl.acm.org/doi/abs/10.1145/3340531.3412025  
AUTHORS: Avirup Saha, Niloy Ganguly  
HIGHLIGHT: In this paper, we propose a marked TPP based on Generative Adversarial Networks (GANs) which can seamlessly incorporate the assistive information necessary to capture the above effects and successfully forecast distant popularity trends.
- 134, TITLE: Index Obfuscation for Oblivious Document Retrieval in a Trusted Execution Environment  
https://dl.acm.org/doi/abs/10.1145/3340531.3412035  
AUTHORS: Jinjin Shao, Shiyu Ji, Alvin Oliver Glova, Yifan Qiao, Tao Yang, Tim Sherwood  
HIGHLIGHT: This paper proposes an efficiency-enhanced design that obfuscates the inverted index structure with posting bucketing and document ID masking, which aims to hide document-term association and avoid the access pattern leakage.
- 135, TITLE: Auxiliary-task Based Deep Reinforcement Learning for Participant Selection Problem in Mobile Crowdsourcing  
https://dl.acm.org/doi/abs/10.1145/3340531.3411913  
AUTHORS: Wei Shen, Xiaonan He, Chuheng Zhang, Qiang Ni, Wanchun Dou, Yan Wang  
HIGHLIGHT: To deal with this issue, we formulate the participant selection problem as a reinforcement learning problem and propose to solve it with a novel method, which we call auxiliary-task based deep reinforcement learning (ADRL).
- 136, TITLE: Neural Logic Reasoning  
https://dl.acm.org/doi/abs/10.1145/3340531.3411949  
AUTHORS: Shaoyun Shi, Hanxiong Chen, Weizhi Ma, Jiaxin Mao, Min Zhang, Yongfeng Zhang

**HIGHLIGHT:** In this paper, we propose Logic-Integrated Neural Network (LINN) to integrate the power of deep learning and logic reasoning.

137, **TITLE:** METEOR: Learning Memory and Time Efficient Representations from Multi-modal Data Streams  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411991>  
**AUTHORS:** Amila Silva, Shanika Karunasekera, Christopher Leckie, Ling Luo  
**HIGHLIGHT:** These studies aim to understand higher-level contextual information (e.g., a Twitter message) by jointly learning embeddings for the lower-level semantic units in different modalities (e.g., text, user, and location of a Twitter message).

138, **TITLE:** Carpe Diem, Seize the Samples Uncertain &quot;at the Moment&quot; for Adaptive Batch Selection  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411898>  
**AUTHORS:** Hwanjun Song, Minseok Kim, Sundong Kim, Jae-Gil Lee  
**HIGHLIGHT:** In this paper, we propose a novel adaptive batch selection algorithm called Recency Bias that exploits the uncertain samples predicted inconsistently in recent iterations.

139, **TITLE:** Continual Domain Adaptation for Machine Reading Comprehension  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412047>  
**AUTHORS:** Lixin Su, Jiafeng Guo, Ruqing Zhang, Yixing Fan, Yanyan Lan, Xueqi Cheng  
**HIGHLIGHT:** To tackle the CDA task, we propose several BERT-based continual learning MRC models using either regularization-based methodology or dynamic-architecture paradigm.

140, **TITLE:** Multi-modal Knowledge Graphs for Recommender Systems  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411947>  
**AUTHORS:** Rui Sun, Xuezhi Cao, Yan Zhao, Junchen Wan, Kun Zhou, Fuzheng Zhang, Zhongyuan Wang, Kai Zheng  
**HIGHLIGHT:** In this paper, we propose Multi-modal Knowledge Graph Attention Network (MKGAT) to better enhance recommender systems by leveraging multi-modal knowledge.

141, **TITLE:** Anomaly Subgraph Detection with Feature Transfer  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411968>  
**AUTHORS:** Ying Sun, Wenjun Wang, Nannan Wu, Wei Yu, Xue Chen  
**HIGHLIGHT:** In this paper, to detect anomaly in a graph with insufficient anomalous features, we propose a pioneering approach ASD-FT (Anomaly Subgraph Detection with Feature Transfer) based on a strategy of anomalous feature transfers between different layers of a multilayer graph.

142, **TITLE:** OHEA: Secure Data Aggregation in Wireless Sensor Networks against Untrusted Sensors  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412045>  
**AUTHORS:** Li Tang, Haibo Hu  
**HIGHLIGHT:** This paper proposes Onion Homomorphic Encryption-based Aggregation (OHEA), where sources form groups with their dedicated encryption keys, a.k.a., the group keys.

143, **TITLE:** Investigating and Mitigating Degree-Related Biases in Graph Convolutional Networks  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411872>  
**AUTHORS:** Xianfeng Tang, Huaxiu Yao, Yiwei Sun, Yiqi Wang, Jiliang Tang, Charu Aggarwal, Prasenjit Mitra, Suhang Wang  
**HIGHLIGHT:** In this paper, we analyze GCNs in regard to the node degree distribution.

144, **TITLE:** QSAN: A Quantum-probability based Signed Attention Network for Explainable False Information Detection  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411890>  
**AUTHORS:** Tian Tian, Yudong Liu, Xiaoyu Yang, Yuefei Lyu, Xi Zhang, Binxing Fang  
**HIGHLIGHT:** In this paper, we focus on how to learn from the post contents and related comments in social media to understand and detect the false information more effectively, with explainability.

145, **TITLE:** Quaternion-Based Self-Attentive Long Short-term User Preference Encoding for Recommendation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411926>  
**AUTHORS:** Thanh Tran, Di You, Kyumin Lee  
**HIGHLIGHT:** In this paper, we fully utilize Quaternion space to model both user's long-term and short-term preferences.

146, **TITLE:** E-Commerce Dispute Resolution Prediction  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411906>  
**AUTHORS:** David Tsurel, Michael Doron, Alexander Nus, Arnon Dagan, Ido Guy, Dafna Shahaf

- HIGHLIGHT: In this work we take a first step towards automatically assisting human agents in dispute resolution at scale.
- 147, TITLE: When Inverse Propensity Scoring does not Work: Affine Corrections for Unbiased Learning to Rank  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412031>  
AUTHORS: Ali Vardasbi, Harrie Oosterhuis, Maarten de Rijke  
HIGHLIGHT: Our main contribution is a new estimator based on affine corrections: it both reweights clicks and penalizes items displayed on ranks with high trust bias.
- 148, TITLE: A Graph Matching Attack on Privacy-Preserving Record Linkage  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411931>  
AUTHORS: Anushka Vidanage, Peter Christen, Thilina Ranbaduge, Rainer Schnell  
HIGHLIGHT: In this paper we present a novel attack on PPRL methods that exploits the approximate similarities calculated between encoded records.
- 149, TITLE: Semi-Supervised Max-Sum Clustering  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411896>  
AUTHORS: Konstantin Voevodski  
HIGHLIGHT: We present computational experiments to show that our framework is effective for clustering text data - we are able to find clusterings that are close to the queried clustering and have a good objective value.
- 150, TITLE: Efficient Sampling Algorithms for Approximate Temporal Motif Counting  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411862>  
AUTHORS: Jingjing Wang, Yanhao Wang, Wenjun Jiang, Yuchen Li, Kian-Lee Tan  
HIGHLIGHT: In this paper, we focus on approximate temporal motif counting via random sampling.
- 151, TITLE: Streaming Graph Neural Networks via Continual Learning  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411963>  
AUTHORS: Junshan Wang, Guojie Song, Yi Wu, Liang Wang  
HIGHLIGHT: In this paper, we propose a streaming GNN model based on continual learning so that the model is trained incrementally and up-to-date node representations can be obtained at each time step.
- 152, TITLE: Soap: Soaking Capacity Optimization for Multi-Document Summarization  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411909>  
AUTHORS: Kexiang Wang, Baobao Chang, Zhifang Sui  
HIGHLIGHT: In this paper, we consider the MDS task as an optimization problem with a novel measure named soaking capacity being the objective function.
- 153, TITLE: Mining Infrequent High-Quality Phrases from Domain-Specific Corpora  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412029>  
AUTHORS: Li Wang, Wei Zhu, Sihang Jiang, Sheng Zhang, Keqiang Wang, Yuan Ni, Guotong Xie, Yanghua Xiao  
HIGHLIGHT: In this paper, we focus on mining high-quality phrases from domain-specific corpora with special consideration of infrequent ones.
- 154, TITLE: Graph Few-shot Learning with Attribute Matching  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411923>  
AUTHORS: Ning Wang, Minnan Luo, Kaize Ding, Lingling Zhang, Jundong Li, Qinghua Zheng  
HIGHLIGHT: To tackle the aforementioned problem, we propose a novel graph meta-learning framework--Attribute Matching Meta-learning Graph Neural Networks (AMM-GNN).
- 155, TITLE: Multi-task Adversarial Spatial-Temporal Networks for Crowd Flow Prediction  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412054>  
AUTHORS: Senzhang Wang, Hao Miao, Hao Chen, Zhiqiu Huang  
HIGHLIGHT: In this paper, we study the novel problem of predicting the crowd flow and flow OD simultaneously, and propose a multi-task adversarial spatial-temporal network model entitled MT-ASTN to effectively address it.
- 156, TITLE: Negative Confidence-Aware Weakly Supervised Binary Classification for Effective Review Helpfulness Classification  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411978>  
AUTHORS: Xi Wang, Iadh Ounis, Craig Macdonald



**HIGHLIGHT:** In this work, we propose a novel Negative Confidence-aware Weakly Supervised approach (NCWS), which customises a binary classification loss function by discriminating the unlabelled examples with different negative confidences during the classifier's training.

157, **TITLE:** Fast Graph Convolution Network Based Multi-label Image Recognition via Cross-modal Fusion  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411880>  
**AUTHORS:** Yangtao Wang, Yanzhao Xie, Yu Liu, Ke Zhou, Xiaocui Li  
**HIGHLIGHT:** To overcome this shortcoming, in this paper, we introduce Multi-modal Factorized Bilinear pooling (MFB) which works as an efficient component to fuse cross-modal embeddings and propose F-GCN, a fast graph convolution network (GCN) based multi-label image recognition model.

158, **TITLE:** Bringing Order to Network Embedding: A Relative Ranking based Approach  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412041>  
**AUTHORS:** Yaojing Wang, Guosheng Pan, Yuan Yao, Hanghang Tong, Hongxia Yang, Feng Xu, Jian Lu  
**HIGHLIGHT:** In this paper, we propose to go beyond such pointwise approaches, and introduce the ranking-oriented design principle for network embedding.

159, **TITLE:** Efficient Knowledge Graph Validation via Cross-Graph Representation Learning  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411902>  
**AUTHORS:** Yaqing Wang, Fenglong Ma, Jing Gao  
**HIGHLIGHT:** Towards effective KG validation, we propose to leverage an external human-curated KG as auxiliary information source to help detect the errors in a target KG.

160, **TITLE:** DisenHAN: Disentangled Heterogeneous Graph Attention Network for Recommendation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411996>  
**AUTHORS:** Yifan Wang, Suyao Tang, Yuntong Lei, Weiping Song, Sheng Wang, Ming Zhang  
**HIGHLIGHT:** In this paper, we propose a novel disentangled heterogeneous graph attention network DisenHAN for top-N recommendation, which learns disentangled user/item representations from different aspects in a heterogeneous information network.

161, **TITLE:** Succinct Adaptive Manifold Transfer  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411921>  
**AUTHORS:** Pengfei Wei, Yiping Ke, Zhiqiang Xu, Tze Yun Leong  
**HIGHLIGHT:** In this paper, we propose an effective and efficient Gaussian process (GP) modelling framework, mTGPmk, that can explicitly model domain relatedness and adaptively control the space as well as the strength of knowledge transfer.

162, **TITLE:** Personalized Imputation on Wearable-Sensory Time Series via Knowledge Transfer  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411879>  
**AUTHORS:** Xian Wu, Stephen Mattingly, Shayan Mirjafari, Chao Huang, Nitesh V. Chawla  
**HIGHLIGHT:** To address the limitation, this work develops a new imputation framework--Personalized Wearable-Sensory Time Series Imputation framework (PTSI) to provide a fully personalized treatment for time series imputation via effective knowledge transfer.

163, **TITLE:** Providing Direct Answers in Search Results: A Study of User Behavior  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412017>  
**AUTHORS:** Zhijing Wu, Mark Sanderson, B. Barla Cambazoglu, W. Bruce Croft, Falk Scholer  
**HIGHLIGHT:** To study the impact of providing direct answers in search results on user behavior, we conducted a controlled user study to analyze factors including reading time, eye-tracked attention, and the influence of the quality of answer module content.

164, **TITLE:** CAFE: Coarse-to-Fine Neural Symbolic Reasoning for Explainable Recommendation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412038>  
**AUTHORS:** Yikun Xian, Zuohui Fu, Handong Zhao, Yingqiang Ge, Xu Chen, Qiaoying Huang, Shijie Geng, Zhou Qin, Gerard de Melo, S. Muthukrishnan, Yongfeng Zhang  
**HIGHLIGHT:** To this end, we propose a CoArse-to-FinE neural symbolic reasoning approach (CAFE).

165, **TITLE:** OPHiForest: Order Preserving Hashing Based Isolation Forest for Robust and Scalable Anomaly Detection  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411988>  
**AUTHORS:** Haolong Xiang, Zoran Salcic, Wanchun Dou, Xiaolong Xu, Lianyong Qi, Xuyun Zhang  
**HIGHLIGHT:** In this paper, we propose a novel anomaly detection method named OPHiForest with the use of the order preserving hashing based isolation forest.

- 166, TITLE: Deep Graph Convolutional Networks for Incident-Driven Traffic Speed Prediction  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411873>  
AUTHORS: Qinge Xie, Tiancheng Guo, Yang Chen, Yu Xiao, Xin Wang, Ben Y. Zhao  
HIGHLIGHT: In this work, we aim to make use of the information of incidents to achieve a better prediction of traffic speed.
- 167, TITLE: Controllable Multi-Character Psychology-Oriented Story Generation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411937>  
AUTHORS: Feifei Xu, Xinpeng Wang, Yunpu Ma, Volker Tresp, Yuyi Wang, Shanlin Zhou, Haizhou Du  
HIGHLIGHT: In our work, we aim to design an emotional line for each character that considers multiple emotions common in psychological theories, with the goal of generating stories with richer emotional changes in the characters.
- 168, TITLE: Schema2QA: High-Quality and Low-Cost Q&A Agents for the Structured Web  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411974>  
AUTHORS: Silei Xu, Giovanni Campagna, Jian Li, Monica S. Lam  
HIGHLIGHT: This paper proposes Schema2QA, an open-source toolkit that can generate a Q&A system from a database schema augmented with a few annotations for each field.
- 169, TITLE: E-commerce Recommendation with Weighted Expected Utility  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411993>  
AUTHORS: Zhichao Xu, Yi Han, Yongfeng Zhang, Qingyao Ai  
HIGHLIGHT: In this paper, we interpret purchase utility as the satisfaction level a consumer gets from a product and propose a recommendation framework using EU to model consumers' behavioral patterns.
- 170, TITLE: NHP: Neural Hypergraph Link Prediction  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411870>  
AUTHORS: Naganand Yadati, Vikram Nitin, Madhav Nimishakavi, Prateek Yadav, Anand Louis, Partha Talukdar  
HIGHLIGHT: We propose two variants of NHP -- NHP-U and NHP-D -- for link prediction over undirected and directed hypergraphs, respectively.
- 171, TITLE: Fair Class Balancing: Enhancing Model Fairness without Observing Sensitive Attributes  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411980>  
AUTHORS: Shen Yan, Hsien-te Kao, Emilio Ferrara  
HIGHLIGHT: In this paper, we first illustrate the extent to which common balancing techniques exacerbate unfairness in real-world data.
- 172, TITLE: Beyond 512 Tokens: Siamese Multi-depth Transformer-based Hierarchical Encoder for Long-Form Document Matching  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411908>  
AUTHORS: Liu Yang, Mingyang Zhang, Cheng Li, Michael Bendersky, Marc Najork  
HIGHLIGHT: In this paper, we address the issue by proposing the Siamese Multi-depth Transformer-based Hierarchical (SMITH) Encoder for long-form document matching.
- 173, TITLE: NagE: Non-Abelian Group Embedding for Knowledge Graphs  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411875>  
AUTHORS: Tong Yang, Long Sha, Pengyu Hong  
HIGHLIGHT: Motivated by the theoretical analysis, we have proposed a group theory-based knowledge graph embedding framework, in which relations are embedded as group elements, and entities are represented by vectors in group action spaces.
- 174, TITLE: LB-CGM: Latent Based Conditional Generative Model with Reliable Distribution Prediction  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412002>  
AUTHORS: Yichen Yao, Guozheng Li, Yujie Chen, Rongqi Li, Yinzhi Zhou, Xiaodong Zhang, Haoyuan Hu, Yinghui Xu  
HIGHLIGHT: In this paper, we combine the advantages of both GANs (Generative Adversarial Nets) and VAEs (Variational Auto-Encoders), and introduce a latent-based conditional generative model (LB-CGM) to handle the distribution regression problems.
- 175, TITLE: LSan: Modeling Long-term Dependencies and Short-term Correlations with Hierarchical Attention for Risk Prediction  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411864>  
AUTHORS: Muchao Ye, Junyu Luo, Cao Xiao, Fenglong Ma  
HIGHLIGHT: To minimize the effect caused by noise information of EHR data, in this paper, we propose a novel DNN for risk prediction termed as LSan, which consists of a Hierarchical Attention Module (HAM) and a Temporal Aggregation Module (TAM).

- 176, TITLE: Logic Enhanced Commonsense Inference with Chain Transformer  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411895>  
AUTHORS: Chenxi Yuan, Chun Yuan, Yang Bai, Ziran Li  
HIGHLIGHT: To alleviate this issue, we propose Chain Transformer, a logic enhanced commonsense inference model that combines both direct and indirect inferences to construct a logical chain so as to reason in a more logically consistent way.
- 177, TITLE: Exploring Missing Interactions: A Convolutional Generative Adversarial Network for Collaborative Filtering  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411917>  
AUTHORS: Feng Yuan, Lina Yao, Boualem Benatallah  
HIGHLIGHT: In this work, we focus on the semantic-rich user-item interactions in a recommender system and propose a novel generative adversarial network (GAN) named Convolutional Generative Collaborative Filtering (Conv-GCF).
- 178, TITLE: GeneralLight: Improving Environment Generalization of Traffic Signal Control via Meta Reinforcement Learning  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411859>  
AUTHORS: Huichu Zhang, Chang Liu, Weinan Zhang, Guanjie Zheng, Yong Yu  
HIGHLIGHT: In this paper, we design a novel traffic flow generator based on Wasserstein generative adversarial network to generate sufficient diverse and quality traffic flows and use them to build proper training and testing environments.
- 179, TITLE: TOMATO: A Topic-Wise Multi-Task Sparsity Model  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411972>  
AUTHORS: Jason (Jiasheng) Zhang, Dongwon Lee  
HIGHLIGHT: Based on this observation, in this paper, we propose a generalized topic-wise multi-task architecture, to capture the within-topic task relationship, which can be combined with any existing MTL designs.
- 180, TITLE: More Than One: A Cluster-Prototype Matching Framework for Zero-Shot Learning  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411883>  
AUTHORS: Jing Zhang, YangLi-a o Geng, Qingyong Li, Chuan Shi  
HIGHLIGHT: Inspired by this, we introduce a novel cluster-prototype matching (CPM) strategy and propose a ZSL framework based on CPM.
- 181, TITLE: A Feature-Importance-Aware and Robust Aggregator for GCN  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411983>  
AUTHORS: Li Zhang, Haiping Lu  
HIGHLIGHT: Under this framework, we propose a new model called LA-GCNMask consisting of a new aggregator function,mask aggregator.
- 182, TITLE: Query Understanding via Intent Description Generation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411999>  
AUTHORS: Ruqing Zhang, Jiafeng Guo, Yixing Fan, Yanyan Lan, Xueqi Cheng  
HIGHLIGHT: In this paper, therefore, we propose a novel Query-to-Intent-Description (Q2ID) task for query understanding.
- 183, TITLE: Generating Categories for Sets of Entities  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412019>  
AUTHORS: Shuo Zhang, Krisztian Balog, Jamie Callan  
HIGHLIGHT: To aid knowledge editors in the manual process of expanding a category system, this paper presents a method of generating categories for sets of entities.
- 184, TITLE: CommDGI: Community Detection Oriented Deep Graph Infomax  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412042>  
AUTHORS: Tianqi Zhang, Yun Xiong, Jiawei Zhang, Yao Zhang, Yizhu Jiao, Yangyong Zhu  
HIGHLIGHT: To overcome the shortcomings of general-purposed graph representation learning methods, we propose the Community Deep Graph Infomax (CommDGI), a graph neural network designed to handle community detection problems.
- 185, TITLE: Spatial-Temporal Convolutional Graph Attention Networks for Citywide Traffic Flow Forecasting  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411941>  
AUTHORS: Xiyue Zhang, Chao Huang, Yong Xu, Lianghao Xia

**HIGHLIGHT:** To address these challenges, we propose a new traffic prediction framework--Spatial-Temporal Convolutional Graph Attention Network (ST-CGA), to enable the traffic prediction with the modeling of region dependencies, from locally to globally in a comprehensive manner.

186, **TITLE:** Semi-Supervised Graph-to-Graph Translation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411977>  
**AUTHORS:** Tianxiang Zhao, Xianfeng Tang, Xiang Zhang, Suhang Wang  
**HIGHLIGHT:** Therefore, in this work, we seek to provide a graph translation model in the semi-supervised scenario.

187, **TITLE:** Error-Bounded Graph Anomaly Loss for GNNs  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411979>  
**AUTHORS:** Tong Zhao, Chuchen Deng, Kaifeng Yu, Tianwen Jiang, Daheng Wang, Meng Jiang  
**HIGHLIGHT:** In this work, we propose a novel loss function to train GNNs for anomaly-detectable node representations.

188, **TITLE:** Whole-Chain Recommendations  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412044>  
**AUTHORS:** Xiangyu Zhao, Long Xia, Lixin Zou, Hui Liu, Dawei Yin, Jiliang Tang  
**HIGHLIGHT:** In this paper, we study the recommendation problem with multiple (consecutive) scenarios, i.e., whole-chain recommendations.

189, **TITLE:** S3-Rec: Self-Supervised Learning for Sequential Recommendation with Mutual Information Maximization  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411954>  
**AUTHORS:** Kun Zhou, Hui Wang, Wayne Xin Zhao, Yutao Zhu, Sirui Wang, Fuzheng Zhang, Zhongyuan Wang, Ji-Rong Wen  
**HIGHLIGHT:** To tackle this problem, we propose the model S3-Rec, which stands for Self-Supervised learning for Sequential Recommendation, based on the self-attentive neural architecture.

190, **TITLE:** Top-k Graph Summarization on Hierarchical DAGs  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411899>  
**AUTHORS:** Xuliang Zhu, Xin Huang, Byron Choi, Jianliang Xu  
**HIGHLIGHT:** In this paper, we study a new problem of finding k representative vertices to summarize a hierarchical DAG.

191, **TITLE:** When Structure Meets Keywords: Cohesive Attributed Community Search  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412006>  
**AUTHORS:** Yuanyuan Zhu, Jian He, Junhao Ye, Lu Qin, Xin Huang, Jeffrey Xu Yu  
**HIGHLIGHT:** In this paper, we propose a new cohesive attributed community (CAC) model that can ensure both structure cohesiveness and attribute cohesiveness of communities.

192, **TITLE:** LRHNE: A Latent-Relation Enhanced Embedding Method for Heterogeneous Information Networks  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411891>  
**AUTHORS:** Zhihua Zhu, Xinxin Fan, Xiaokai Chu, Jianhui Huang, Jingping Bi  
**HIGHLIGHT:** Considering the sophisticated correlations in HINs, we in this paper propose a novel HIN embedding method LRHNE to yield latent-relation enhanced embeddings for nodes.

193, **TITLE:** Corpus Bootstrapping for Assessment of the Properties of Effectiveness Measures  
<https://dl.acm.org/doi/abs/10.1145/3340531.3411998>  
**AUTHORS:** Justin Zobel, Lida Rashidi  
**HIGHLIGHT:** In this work we consider how bootstrapping can be used to assess the reliability of effectiveness measures for experimental IR.

194, **TITLE:** Building Test Collections using Bandit Techniques: A Reproducibility Study  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412121>  
**AUTHORS:** Bahadır Altun, Mucahid Kutlu  
**HIGHLIGHT:** In this paper, we conduct a comprehensive set of experiments to evaluate six bandit-based document selection methods, in terms of evaluation reliability, fairness, and reusability of the resultant test collections.

195, **TITLE:** FDCM: Towards Balanced and Generalizable Concept-based Models for Effective Medical Ranking  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412151>  
**AUTHORS:** Mohammad Bahrani, Thomas Roelleke

**HIGHLIGHT:** We propose a new aggregation parameter to combine conceptual and term-based Dirichlet Compound Model scores effectively.

196, **TITLE:** Application Performance Anomaly Detection with LSTM on Temporal Irregularities in Logs

<https://dl.acm.org/doi/abs/10.1145/3340531.3412157>

**AUTHORS:** Xavier Baril, Oihana Cousti&eacute;, Josiane Mothe, Olivier Teste

**HIGHLIGHT:** In this paper, we develop a new model for performance anomaly detection that captures temporal deviations from the nominal model, by means of a sliding window data representation.

197, **TITLE:** Automatic Gaussian Process Model Retrieval for Big Data

<https://dl.acm.org/doi/abs/10.1145/3340531.3412182>

**AUTHORS:** Fabian Berns, Christian Beecks

**HIGHLIGHT:** Since non-approximative Gaussian Processes only allow for processing small datasets with low statistical versatility, we propose a new approach that allows to efficiently and automatically retrieve GPMs for large-scale data.

198, **TITLE:** Query Abandonment Prediction with Recurrent Neural Models of Mouse Cursor Movements

<https://dl.acm.org/doi/abs/10.1145/3340531.3412126>

**AUTHORS:** Lukas Br&uuml;ckner, Ioannis Arapakis, Luis A. Leiva

**HIGHLIGHT:** We show that mouse cursor movements make a valuable, low-cost behavioral signal that can discriminate good and bad abandonment.

199, **TITLE:** NumClaim: Investor's Fine-grained Claim Detection

<https://dl.acm.org/doi/abs/10.1145/3340531.3412100>

**AUTHORS:** Chung-Chi Chen, Hen-Hsen Huang, Hsin-Hsi Chen

**HIGHLIGHT:** In this paper, we design a novel task for argument mining in the financial domain, and provide an expert-annotated dataset, NumClaim, for the proposed task.

200, **TITLE:** Label-Aware Graph Convolutional Networks

<https://dl.acm.org/doi/abs/10.1145/3340531.3412139>

**AUTHORS:** Hao Chen, Yue Xu, Feiran Huang, Zengde Deng, Wenbing Huang, Senzhang Wang, Peng He, Zhoujun Li

**HIGHLIGHT:** In this paper, we consider the problem of node classification and propose the Label-Aware Graph Convolutional Network (LAGCN) framework which can directly identify valuable neighbors to enhance the performance of existing GCN models.

201, **TITLE:** Graph Unfolding Networks

<https://dl.acm.org/doi/abs/10.1145/3340531.3412141>

**AUTHORS:** Hao Chen, Wenbing Huang, Yue Xu, Fuchun Sun, Zhoujun Li

**HIGHLIGHT:** In this paper, we propose Graph Unfolding Networks (GUNets) as an alternative mechanism of recursive neighborhood aggregation for graph representation learning.

202, **TITLE:** CONE-Align: Consistent Network Alignment with Proximity-Preserving Node Embedding

<https://dl.acm.org/doi/abs/10.1145/3340531.3412136>

**AUTHORS:** Xiyuan Chen, Mark Heimann, Fatemeh Vahedian, Danai Koutra

**HIGHLIGHT:** To improve this, we propose CONE-Align, which models intra-network proximity with node embeddings and uses them to match nodes across networks after aligning the embedding subspaces.

203, **TITLE:** Generative Adversarial Attributed Network Anomaly Detection

<https://dl.acm.org/doi/abs/10.1145/3340531.3412070>

**AUTHORS:** Zhenxing Chen, Bo Liu, Meiqing Wang, Peng Dai, Jun Lv, Liefeng Bo

**HIGHLIGHT:** In this paper, we propose a generative adversarial attributed network (GAAN) anomaly detection framework.

204, **TITLE:** Joint Estimation of User And Publisher Credibility for Fake News Detection

<https://dl.acm.org/doi/abs/10.1145/3340531.3412066>

**AUTHORS:** Rajdipa Chowdhury, Sriram Srinivasan, Lise Getoor

**HIGHLIGHT:** In this work, we look at fake news detection as a problem of estimating the credibility of both the news publishers and users that propagate news articles.

205, **TITLE:** Learning Discriminative Virtual Sequences for Time Series Classification

<https://dl.acm.org/doi/abs/10.1145/3340531.3412099>

**AUTHORS:** Abhilash Dorle, Fangyu Li, Wenzhan Song, Sheng Li

**HIGHLIGHT:** To address this issue, in this paper, we propose a novel time series classification method named Discriminative Virtual Sequence Learning (DVSL).

206, **TITLE:** DECWA: Density-Based Clustering using Wasserstein Distance  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412125>  
**AUTHORS:** Nabil El Malki, Robin Cugny, Olivier Teste, Franck Ravat  
**HIGHLIGHT:** The key idea we propose is to use the Wasserstein metric, a powerful tool to measure the distance between p.d.f of sub-clusters.

207, **TITLE:** Why is That a Background Article: A Qualitative Analysis of Relevance for News Background Linking  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412120>  
**AUTHORS:** Marwa Essam, Tamer Elsayed  
**HIGHLIGHT:** The goal of the study is to shed some light on the relationship between the query articles and the background articles, and provide informative insights for developing more effective background retrieval models.

208, **TITLE:** Hybrid Dynamic Pruning for Efficient and Effective Query Processing  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412113>  
**AUTHORS:** Wenxiu Fang, Trent G. Marbach, Gang Wang, Xiaoguang Liu  
**HIGHLIGHT:** In this work, we investigate the performance of the main dynamic pruning algorithms in terms of average and tail latency as well as the accuracy of query results, and find that they are complementary.

209, **TITLE:** Sample Optimization For Display Advertising  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412162>  
**AUTHORS:** Hongliang Fei, Shulong Tan, Pengju Guo, Wenbo Zhang, Hongfang Zhang, Ping Li  
**HIGHLIGHT:** In this paper, we utilize several sample optimization strategies to alleviate the covariate shift problem for training candidate generation models.

210, **TITLE:** A Reinforced Semi-supervised Neural Network for Helpful Review Identification  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412101>  
**AUTHORS:** Yue Feng, Miao Fan, Mingming Sun, Ping Li  
**HIGHLIGHT:** Therefore, this paper proposes a reinforced semi-supervised neural learning method (abbreviated as RSSNL) for helpful review identification, which can automatically select high-related unlabeled reviews to help training.

211, **TITLE:** A View-Adversarial Framework for Multi-View Network Embedding  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412127>  
**AUTHORS:** Dongqi Fu, Zhe Xu, Bo Li, Hanghang Tong, Jingrui He  
**HIGHLIGHT:** In this paper, we propose a view-adversarial framework to generate comprehensive and robust multi-view network representations named VANE, which is based on two adversarial games.

212, **TITLE:** Can Adversarial Weight Perturbations Inject Neural Backdoors  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412130>  
**AUTHORS:** Siddhant Garg, Adarsh Kumar, Vibhor Goel, Yingyu Liang  
**HIGHLIGHT:** In this work we extend the idea of "adversarial perturbations" to the space of model weights, specifically to inject backdoors in trained DNNs, which exposes a security risk of publicly available trained models.

213, **TITLE:** Estimating Topic Difficulty Using Normalized Discounted Cumulated Gain  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412109>  
**AUTHORS:** Lukas Gienapp, Benno Stein, Matthias Hagen, Martin Potthast  
**HIGHLIGHT:** We introduce a new approach to estimate topic difficulty, which is based on the ratio of systems that achieve an NDCG score that is better than a baseline formed as random ranking of the pool of judged documents.

214, **TITLE:** The Impact of Negative Relevance Judgments on NDCG  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412123>  
**AUTHORS:** Lukas Gienapp, Maik Fröbe, Matthias Hagen, Martin Potthast  
**HIGHLIGHT:** We show that, instead of zeroing negative labels, a min-max-normalization of NDCG retains its statistical power while improving its reliability and stability.

215, **TITLE:** Speaker-Aware BERT for Multi-Turn Response Selection in Retrieval-Based Chatbots  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412330>  
**AUTHORS:** Jia-Chen Gu, Tianda Li, Quan Liu, Zhen-Hua Ling, Zhiming Su, Si Wei, Xiaodan Zhu

**HIGHLIGHT:** In this paper, we study the problem of employing pre-trained language models for multi-turn response selection in retrieval-based chatbots.

216, **TITLE:** Subsampled Randomized Hadamard Transform for Regression of Dynamic Graphs

<https://dl.acm.org/doi/abs/10.1145/3340531.3412158>

**AUTHORS:** Mostafa Hagher Chehreghani

**HIGHLIGHT:** In this paper, we utilize subsampled randomized Hadamard transform to propose a randomized algorithm for dynamic graphs.

217, **TITLE:** Learning to Form Skill-based Teams of Experts

<https://dl.acm.org/doi/abs/10.1145/3340531.3412140>

**AUTHORS:** Radin Hamidi Rad, Hossein Fani, Mehdi Kargar, Jaroslaw Szlichta, Ebrahim Bagheri

**HIGHLIGHT:** Instead of forming a large network of experts, we propose to learn relationships among experts and skills through a variational Bayes neural architecture wherein: i) we consider all past team compositions as training instances to predict future teams; ii) we bring scalability for large networks of experts due to the neural architecture; and, iii) we address sparsity by incorporating uncertainty on the neural network's parameters which yields a richer representation and more accurate team composition.

218, **TITLE:** GAEAT: Graph Auto-Encoder Attention Networks for Knowledge Graph Completion

<https://dl.acm.org/doi/abs/10.1145/3340531.3412148>

**AUTHORS:** Yanfei Han, Quan Fang, Jun Hu, Shengsheng Qian, Changsheng Xu

**HIGHLIGHT:** In this paper, we present a new approach for knowledge graph completion called GAEAT (Graph Auto-encoder Attention Network Embedding), which can encapsulate both entity and relation features.

219, **TITLE:** Learning to Re-Rank with Contextualized Stopwords

<https://dl.acm.org/doi/abs/10.1145/3340531.3412079>

**AUTHORS:** Sebastian Hofstätter, Aldo Lipani, Markus Zlabinger, Allan Hanbury

**HIGHLIGHT:** In this work we propose a novel contextualized stopword detection mechanism for neural re-ranking models.

220, **TITLE:** DATSING: Data Augmented Time Series Forecasting with Adversarial Domain Adaptation

<https://dl.acm.org/doi/abs/10.1145/3340531.3412155>

**AUTHORS:** Hailin Hu, MingJian Tang, Chengcheng Bai

**HIGHLIGHT:** In this work, we have developed, DATSING, a transfer learning-based framework that effectively leverages cross-domain time series latent representations to augment target domain forecasting.

221, **TITLE:** Homogenization with Explicit Semantics Preservation for Heterogeneous Information Network

<https://dl.acm.org/doi/abs/10.1145/3340531.3412135>

**AUTHORS:** Tiancheng Huang, Zifeng Zhuang, Shanshan Zhang, Donglin Wang

**HIGHLIGHT:** In this paper, a novel explicit homogenization method is proposed to preserve more semantic information, where the latent information of intermediate nodes among each meta-path instance and that among multiple meta-path instances are incorporated into the conventional adjacent matrix (or weight matrix).

222, **TITLE:** DistilSum: Distilling the Knowledge for Extractive Summarization

<https://dl.acm.org/doi/abs/10.1145/3340531.3412078>

**AUTHORS:** Ruipeng Jia, Yanan Cao, Haichao Shi, Fang Fang, Yanbing Liu, Jianlong Tan

**HIGHLIGHT:** In this paper, we introduce DistilSum, which contains teacher mechanism and student model.

223, **TITLE:** T-REX: A Topic-Aware Relation Extraction Model

<https://dl.acm.org/doi/abs/10.1145/3340531.3412133>

**AUTHORS:** Woohwan Jung, Kyuseok Shim

**HIGHLIGHT:** To tackle the problem, we propose a Topic-aware Relation EXtraction (T-REX) model.

224, **TITLE:** CR-Graph: Community Reinforcement for Accurate Community Detection

<https://dl.acm.org/doi/abs/10.1145/3340531.3412145>

**AUTHORS:** Yoonsuk Kang, Jun Seok Lee, Won-Yong Shin, Sang-Wook Kim

**HIGHLIGHT:** In this paper, we present CR-Graph (community reinforcement on graphs), a novel method that helps existing algorithms to perform more-accurate community detection (CD).

225, **TITLE:** What Rankers Can be Statistically Distinguished in Multileaved Comparisons?

<https://dl.acm.org/doi/abs/10.1145/3340531.3412143>

AUTHORS: Makoto P. Kato, Akiomi Nishida, Tomohiro Manabe, Sumio Fujita, Takehiro Yamamoto  
HIGHLIGHT: This paper presents findings from an empirical study of multileaved comparisons, an efficient online evaluation methodology, in a commercial Web service.

226, TITLE: A Synopses Data Engine for Interactive Extreme-Scale Analytics  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412154>  
AUTHORS: Antonis Kontaxakis, Nikos Giatrakos, Antonios Deligiannakis  
HIGHLIGHT: We detail the novel architecture of a Synopses Data Engine (SDE) which combines the virtues of parallel processing and stream summarization towards interactive analytics at scale.

227, TITLE: NASE:: Learning Knowledge Graph Embedding for Link Prediction via Neural Architecture Search  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412104>  
AUTHORS: Xiaoyu Kou, Bingfeng Luo, Huang Hu, Yan Zhang  
HIGHLIGHT: In this paper, we propose a novel Neural Architecture Search (NAS) framework for the link prediction task.

228, TITLE: Ranking Clarification Questions via Natural Language Inference  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412137>  
AUTHORS: Vaibhav Kumar, Vikas Raunak, Jamie Callan  
HIGHLIGHT: For the task of ranking clarification questions, we hypothesize that determining whether a clarification question pertains to a missing entry in a given post (on QA forums such as StackExchange) could be considered as a special case of Natural Language Inference (NLI), where both the post and the most relevant clarification question point to a shared latent piece of information or context.

229, TITLE: MetaTPOT: Enhancing A Tree-based Pipeline Optimization Tool Using Meta-Learning  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412147>  
AUTHORS: Doron Laadan, Roman Vainshtein, Yarden Curiel, Gilad Katz, Lior Rokach  
HIGHLIGHT: In this study, we explore TPOT's GP process and propose MetaTPOT, an enhanced variant that uses a meta learning-based approach to predict the performance of TPOT's pipeline candidates.

230, TITLE: Rethinking Operators Placement of Stream Data Application in the Edge  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412116>  
AUTHORS: Thomas Lambert, David Guyon, Shadi Ibrahim  
HIGHLIGHT: In this paper, we argue that MST should be used as an optimization objective when placing operators.

231, TITLE: An Index Advisor Using Deep Reinforcement Learning  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412106>  
AUTHORS: Hai Lan, Zhifeng Bao, Yuwei Peng  
HIGHLIGHT: We study the problem of index selection to maximize the workload performance, which is critical to database systems.

232, TITLE: Bridging the Gap between Click and Relevance for Learning-to-Rank with Minimal Supervision  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412144>  
AUTHORS: Jae-woong Lee, Young-In Song, Deokmin Haam, Sanghoon Lee, Woo-sik Choi, Jongwuk Lee  
HIGHLIGHT: From a different perspective, we propose a simple-yet-effective ranking model, namely wLambdaMART, which estimates the confidence of click data with a few labeled data, instead of learning the propensity weight to reduce the bias from click data.

233, TITLE: Are Negative Links Really Beneficial to Network Embedding?: In-Depth Analysis and Interesting Results  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412107>  
AUTHORS: Yeon-Chang Lee, Nayoun Seo, Sang-Wook Kim  
HIGHLIGHT: In this paper, we start by pointing out the limitations on the validation of existing signed network embedding (NE) methods.

234, TITLE: Non-local Self-attentive Autoencoder for Genetic Functionality Prediction  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412084>  
AUTHORS: Yun Li, Zhe Liu, Lina Yao, Zihuai He  
HIGHLIGHT: To tackle this problem, we propose Non-local Self-attentive Autoencoder (NSAE) which applies attention-driven genetic variant modelling.

235, TITLE: Recursive Balanced k-Subset Sum Partition for Rule-constrained Resource Allocation



<https://dl.acm.org/doi/abs/10.1145/3340531.3412076>

**AUTHORS:** Zhuo Li, Jiannong Cao, Zhongyu Yao, Wengen Li, Yu Yang, Jia Wang  
**HIGHLIGHT:** To address these limitations, we propose recursive balanced k-subset sum partition (RBkSP), in which iterative 'cut-one-out' policy is employed that in each round, only one subset whose weight of tasks sums up to 1/k of the total weight of all tasks is taken out from the set.

236, **TITLE:** Alike and Unlike: Resolving Class Imbalance Problem in Financial Credit Risk Assessment

<https://dl.acm.org/doi/abs/10.1145/3340531.3412111>

**AUTHORS:** Yang Liu, Xiang Ao, Qiwei Zhong, Jinghua Feng, Jiayu Tang, Qing He  
**HIGHLIGHT:** In this paper, we propose a novel adversarial data augmentation method to solve the class imbalance problem in financial credit risk assessment.

237, **TITLE:** Active Query of Private Demographic Data for Learning Fair Models

<https://dl.acm.org/doi/abs/10.1145/3340531.3412074>

**AUTHORS:** Yijun Liu, Chao Lan  
**HIGHLIGHT:** In this paper, we propose a new direction called active demographic query.

238, **TITLE:** Neural Relation Extraction on Wikipedia Tables for Augmenting Knowledge Graphs

<https://dl.acm.org/doi/abs/10.1145/3340531.3412164>

**AUTHORS:** Erin Macdonald, Denilson Barbosa  
**HIGHLIGHT:** We help close this gap with a neural method that uses contextual information surrounding a table in a Wikipedia article to extract relations between entities appearing in the same row of a table or between the entity of said article and entities appearing in the table.

239, **TITLE:** Fairness-Aware Learning with Prejudice Free Representations

<https://dl.acm.org/doi/abs/10.1145/3340531.3412150>

**AUTHORS:** Ramanujam Madhavan, Mohit Wadhwa  
**HIGHLIGHT:** In this paper, we propose a novel algorithm that can effectively identify and treat latent discriminating features.

240, **TITLE:** A Comparison of Top-k Threshold Estimation Techniques for Disjunctive Query Processing

<https://dl.acm.org/doi/abs/10.1145/3340531.3412080>

**AUTHORS:** Antonio Mallia, Michal Siedlaczek, Mengyang Sun, Torsten Suel  
**HIGHLIGHT:** In this paper, we address this issue by reimplementing four major approaches and comparing them in terms of estimation error, running time, likelihood of an overestimate, and end-to-end performance when applied to common classes of disjunctive top-k query processing algorithms.

241, **TITLE:** Feedback Loop and Bias Amplification in Recommender Systems

<https://dl.acm.org/doi/abs/10.1145/3340531.3412152>

**AUTHORS:** Masoud Mansoury, Himan Abdollahpouri, Mykola Pechenizkiy, Bamshad Mobasher, Robin Burke  
**HIGHLIGHT:** In this paper, we propose a method for simulating the users interaction with the recommenders in an offline setting and study the impact of feedback loop on the popularity bias amplification of several recommendation algorithms.

242, **TITLE:** Diversifying Top-k Point-of-Interest Queries via Collective Social Reach

<https://dl.acm.org/doi/abs/10.1145/3340531.3412097>

**AUTHORS:** Stella Maropaki, Sean Chester, Christos Doulkeridis, Kjetil N&oslash;rv&aring;g  
**HIGHLIGHT:** Algorithmically, evaluating this set-based notion of diversity is challenging, yet we present several effective algorithms based on (integer) linear programming, a greedy framework, and r-tree distance browsing.

243, **TITLE:** Transformer Models for Recommending Related Questions in Web Search

<https://dl.acm.org/doi/abs/10.1145/3340531.3412067>

**AUTHORS:** Rajarshree Mitra, Manish Gupta, Sandipan Dandapat  
**HIGHLIGHT:** In this paper, we present our system which is based on a Transformer-based neural representation, BERT (Bidirectional Encoder Representations from Transformers), for query, question and corresponding search result snippets.

244, **TITLE:** Evaluating the Impact of Knowledge Graph Context on Entity Disambiguation Models

<https://dl.acm.org/doi/abs/10.1145/3340531.3412159>

**AUTHORS:** Isaiah Onando Mulang', Kuldeep Singh, Chaitali Prabhu, Abhishek Nadgeri, Johannes Hoffart, Jens Lehmann  
**HIGHLIGHT:** In this paper, we argue that context derived from a knowledge graph (in our case: Wikidata) provides enough signals to inform pretrained transformer models and improve their performance for named entity disambiguation (NED) on Wikidata KG.

- 245, TITLE: Deep Metric Learning Based on Rank-sensitive Optimization of Top-k Precision  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412142>  
AUTHORS: Naoki Muramoto, Hai-Tao Yu  
HIGHLIGHT: In this paper, we propose a new method on how to optimize top-k precision in a rank-sensitive manner.
- 246, TITLE: Gated Heterogeneous Graph Representation Learning for Shop Search in E-commerce  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412087>  
AUTHORS: Xichuan Niu, Bofang Li, Chenliang Li, Rong Xiao, Haochuan Sun, Honggang Wang, Hongbo Deng, Zhenzhong Chen  
HIGHLIGHT: In this work, we focus on vectorized search matching model for shop search in Taobao.
- 247, TITLE: A Reproducibility Study of Deep and Surface Machine Learning Methods for Human-related Trajectory Prediction  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412088>  
AUTHORS: Bardh Prenkaj, Paola Velardi, Damiano Distanto, Stefano Faralli  
HIGHLIGHT: In this paper, we compare several deep and surface state-of-the-art machine learning methods for risk prediction in problems that can be modelled as a trajectory of events separated by irregular time intervals.
- 248, TITLE: CGTR: Convolution Graph Topology Representation for Document Ranking  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412073>  
AUTHORS: Yuanyuan Qi, Jiayue Zhang, Yansong Liu, Weiran Xu, Jun Guo  
HIGHLIGHT: In this paper, we take the advantage of Graph Convolutional Networks (GCN) to model global word-relation structure of a document to improve context-aware document ranking.
- 249, TITLE: Representative Negative Instance Generation for Online Ad Targeting  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412114>  
AUTHORS: Yuhan Quan, Jingtao Ding, Depeng Jin, Jianbo Yang, Xing Zhou, Yong Li  
HIGHLIGHT: In this work, we tackle this problem by improving the quality of negative instances used in training the targeting model.
- 250, TITLE: Training Sensitivity in Graph Isomorphism Network  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412089>  
AUTHORS: Md. Khaledur Rahman  
HIGHLIGHT: In this paper, we attempt to fill this gap by studying various alternative functions for a respective module using a diverse set of benchmark datasets.
- 251, TITLE: Securing Bloom Filters for Privacy-preserving Record Linkage  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412105>  
AUTHORS: Thilina Ranbaduge, Rainer Schnell  
HIGHLIGHT: In this paper we propose two novel techniques that can be applied on BF encoding to improve privacy against attacks.
- 252, TITLE: Product Insights: Analyzing Product Intents in Web Search  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412090>  
AUTHORS: Nikitha Rao, Chetan Bansal, Subhabrata Mukherjee, Chandra Maddila  
HIGHLIGHT: In this work, we study search logs from Bing web search engine to characterize user intents and study user behavior for product search.
- 253, TITLE: Muse: Multi-query Event Trend Aggregation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412138>  
AUTHORS: Allison Rozet, Olga Poppe, Chuan Lei, Elke A. Rundensteiner  
HIGHLIGHT: We propose MUSE (Multi-query Shared Event trend aggregation), the first framework that shares aggregation queries with Kleene patterns while avoiding expensive trend construction.
- 254, TITLE: Distant Supervision in BERT-based Adhoc Document Retrieval  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412124>  
AUTHORS: Koustav Rudra, Avishek Anand  
HIGHLIGHT: In this paper, we handle both the issues simultaneously and introduce passage level weak supervision in contrast to standard document level supervision.

- 255, TITLE: Modelling Regional Crime Risk using Directed Graph of Check-ins  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412065>  
AUTHORS: Shakila Khan Rumi, Flora D. Salim  
HIGHLIGHT: The mobility dynamics inferred from Foursquare helps us understanding urban social events like crime In this paper, we propose a directed graph from the aggregated movement between regions using Foursquare data.
- 256, TITLE: Relation Extraction with Self-determined Graph Convolutional Network  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412072>  
AUTHORS: Sunil Kumar Sahu, Derek Thomas, Billy Chiu, Neha Sengupta, Mohammady Mahdy  
HIGHLIGHT: In this work, we propose a novel model, the Self-determined Graph Convolutional Network (SGCN), which determines a weighted graph using a self-attention mechanism, rather using any linguistic tool.
- 257, TITLE: A Framework for Analyzing the Impact of Missing Data in Predictive Models  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412129>  
AUTHORS: Fabiola Santore, Eduardo C. de Almeida, Wagner H. Bonat, Eduardo H. M. Pena, Luiz Eduardo S. de Oliveira  
HIGHLIGHT: We propose a stochastic framework to evaluate the impact of missing data on the performance of predictive models.
- 258, TITLE: Deep Adaptive Feature Aggregation in Multi-task Convolutional Neural Networks  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412132>  
AUTHORS: Zhen Shen, Chaoran Cui, Jin Huang, Jian Zong, Meng Chen, Yilong Yin  
HIGHLIGHT: In this paper, we propose a novel Adaptive Feature Aggregation (AFA) layer for multi-task CNNs, in which a dynamic aggregation mechanism is designed to allow each task to adaptively determine the degree to which the feature aggregation of different tasks is needed according to the feature dependencies.
- 259, TITLE: GGDs: Graph Generating Dependencies  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412149>  
AUTHORS: Larissa C. Shimomura, George Fletcher, Nikolay Yakovets  
HIGHLIGHT: We propose Graph Generating Dependencies (GGDs), a new class of dependencies for property graphs.
- 260, TITLE: Do You Really Like Her Post?: Network-Based Analysis for Understanding Like Activities in SNS  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412166>  
AUTHORS: Junho Song, Hyekyoung Park, Kyungsik Han, Sang-Wook Kim  
HIGHLIGHT: In this paper, we build like networks in Instagram and analyze them through the lens of two salient aspects - friendship and interest - that constitute social networks.
- 261, TITLE: DREAM: A Dynamic Relation-Aware Model for Social Recommendation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412115>  
AUTHORS: Liqiang Song, Ye Bi, Mengqiu Yao, Zhenyu Wu, Jianming Wang, Jing Xiao  
HIGHLIGHT: In this paper, we propose a unified framework named Dynamic Relation-Aware Model (DREAM) for social recommendation, which tries to model both users?
- 262, TITLE: LogBug: Generating Adversarial System Logs in Real Time  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412165>  
AUTHORS: Jingyu Sun, Bingyu Liu, Yuan Hong  
HIGHLIGHT: In this paper, to our best knowledge, we take the first step to propose a novel real-time black-box attack framework LogBug in which attackers slightly modify the logs to deviate the analysis result (i.e., evading the anomaly detection) without knowing the learning model and parameters of the log parser.
- 263, TITLE: TABLE: A Task-Adaptive BERT-based Listwise Ranking Model for Document Retrieval  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412071>  
AUTHORS: Xingwu Sun, Hongyin Tang, Fuzheng Zhang, Yanling Cui, Beihong Jin, Zhongyuan Wang  
HIGHLIGHT: In the pre-training stage of TABLE, we present a domain-adaptive strategy.
- 264, TITLE: DynamicRec: A Dynamic Convolutional Network for Next Item Recommendation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412118>  
AUTHORS: Md Mehrab Tanjim, Hammad A. Ayuubi, Garrison W. Cottrell  
HIGHLIGHT: In this paper, we argue that all the dynamics of the item-to-item transition in session-based settings may not be observable at training time.

- 265, TITLE: Schema-Agnostic Entity Matching using Pre-trained Language Models  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412131>  
AUTHORS: Kai-Sheng Teong, Lay-Ki Soon, Tin Tin Su  
HIGHLIGHT: In view of this challenge, this paper presents an effective approach for schema-agnostic EM, where having schema-aligned tables is not compulsory.
- 266, TITLE: Denoising Individual Bias for Fairer Binary Submatrix Detection  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412156>  
AUTHORS: Changlin Wan, Wennan Chang, Tong Zhao, Sha Cao, Chi Zhang  
HIGHLIGHT: We propose a binary data denoising framework, namely BIND, which optimizes the detection of true patterns by estimating the row- or column-wise mixture distribution of patterns and disparate background, and eliminating the binary attributes that are more likely from the background.
- 267, TITLE: Dual Autoencoder Network with Swap Reconstruction for Cold-Start Recommendation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412069>  
AUTHORS: Bei Wang, Chenrui Zhang, Hao Zhang, Xiaoqing Lyu, Zhi Tang  
HIGHLIGHT: In this paper, we propose a Dual Autoencoder Network (DAN), which implements cross-domain recommendations to cold-start users in an end-to-end manner.
- 268, TITLE: Embedding Node Structural Role Identity into Hyperbolic Space  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412102>  
AUTHORS: Lili Wang, Ying Lu, Chenghan Huang, Soroush Vosoughi  
HIGHLIGHT: In this work, we are the first to present a framework to embed the structural roles of nodes into hyperbolic space.
- 269, TITLE: Calibration of Google Trends Time Series  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412075>  
AUTHORS: Robert West  
HIGHLIGHT: We address this issue by proposing Google Trends Anchor Bank (G-TAB), an efficient solution for the calibration of Google Trends data.
- 270, TITLE: Tolerant Markov Boundary Discovery for Feature Selection  
<https://dl.acm.org/doi/abs/10.1145/3340531.3415927>  
AUTHORS: Xingyu Wu, Bingbing Jiang, Yan Zhong, Huanhuan Chen  
HIGHLIGHT: In this paper, we propose a tolerant MB discovery algorithm (TLMB), which maps the feature space and target space to a reproducing kernel Hilbert space through the conditional covariance operator, to measure the causal information carried by a feature.
- 271, TITLE: Deep Multi-Interest Network for Click-through Rate Prediction  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412092>  
AUTHORS: Zhibo Xiao, Luwei Yang, Wen Jiang, Yi Wei, Yi Hu, Hao Wang  
HIGHLIGHT: In this paper, we propose a novel method named as Deep Multi-Interest Network (DMIN) which models user's latent multiple interests for click-through rate prediction task.
- 272, TITLE: Learning to Generate Reformulation Actions for Scalable Conversational Query Understanding  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412112>  
AUTHORS: Zihan Xu, Jiangang Zhu, Ling Geng, Yang Yang, Bojia Lin, Daxin Jiang  
HIGHLIGHT: For action generation, we propose a multi-task learning framework enhanced by coreference resolution, and introduce grammar constraints into the decoding process.
- 273, TITLE: Enhance Prototypical Network with Text Descriptions for Few-shot Relation Classification  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412153>  
AUTHORS: Kaijia Yang, Nantao Zheng, Xinyu Dai, Liang He, Shujian Huang, Jiajun Chen  
HIGHLIGHT: In this paper, we propose TD-Proto, which enhances prototypical network with relation and entity descriptions.
- 274, TITLE: Analysis of Multivariate Scoring Functions for Automatic Unbiased Learning to Rank  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412128>  
AUTHORS: Tao Yang, Shikai Fang, Shibo Li, Yulan Wang, Qingyao Ai

**HIGHLIGHT:** In this paper, we investigate existing multivariate scoring functions and AutoULTR algorithms in theory and prove that permutation invariance is a crucial factor that determines whether a context-aware learning-to-rank model could be applied to existing AutoULTR framework.

275, **TITLE:** Time-aware Graph Relational Attention Network for Stock Recommendation

<https://dl.acm.org/doi/abs/10.1145/3340531.3412160>

**AUTHORS:** Xiaoting Ying, Cong Xu, Jianliang Gao, Jianxin Wang, Zhao Li

**HIGHLIGHT:** In this paper, we propose a time-aware graph relational attention network (TRAN) for stock recommendation based on return ratio ranking.

276, **TITLE:** Deep Interaction Machine: A Simple but Effective Model for High-order Feature Interactions

<https://dl.acm.org/doi/abs/10.1145/3340531.3412077>

**AUTHORS:** Feng Yu, Zhaocheng Liu, Qiang Liu, Haoli Zhang, Shu Wu, Liang Wang

**HIGHLIGHT:** Accordingly, we propose a novel Interaction Machine (IM) model.

277, **TITLE:** Few-shot Insider Threat Detection

<https://dl.acm.org/doi/abs/10.1145/3340531.3412161>

**AUTHORS:** Shuhan Yuan, Panpan Zheng, Xintao Wu, Hanghang Tong

**HIGHLIGHT:** In this work, we propose a novel framework combining the idea of self-supervised pre-training and metric-based few-shot learning to detect insiders.

278, **TITLE:** Leveraging User Email Actions to Improve Ad-Close Prediction

<https://dl.acm.org/doi/abs/10.1145/3340531.3412093>

**AUTHORS:** Oleg Zendel, Yaroslav Fyodorov, Fiana Raiber, Natalia Silberstein, Oren Somekh, Ali Tabaja

**HIGHLIGHT:** In this work, we focus on email since this is the property in which most ad closes occur.

279, **TITLE:** Event-Driven Network for Cross-Modal Retrieval

<https://dl.acm.org/doi/abs/10.1145/3340531.3412081>

**AUTHORS:** Zhixiong Zeng, Nan Xu, Wenji Mao

**HIGHLIGHT:** To tackle the challenge, in this paper, we focus on the retrieval task on long text and image, and propose an event-driven network for cross-modal retrieval.

280, **TITLE:** Integrating Diagnosis Rules into Deep Neural Networks for Bladder Cancer Staging

<https://dl.acm.org/doi/abs/10.1145/3340531.3412122>

**AUTHORS:** Cheng Zhang, Xiaodong Yue, Yufei Chen, Ying Lv

**HIGHLIGHT:** To tackle the problems, we construct the diagnosis rules of bladder cancer staging based on the clinical experiences of tumor penetration into bladder wall.

281, **TITLE:** Hyper-Substructure Enhanced Link Predictor

<https://dl.acm.org/doi/abs/10.1145/3340531.3412096>

**AUTHORS:** Jian Zhang, Jun Zheng, Jinyin Chen, Qi Xuan

**HIGHLIGHT:** In this paper, we propose an end-to-end deep learning framework, namely hyper-substructure enhanced link predictor (HELP), for link prediction.

282, **TITLE:** Seasonal-Periodic Subgraph Mining in Temporal Networks

<https://dl.acm.org/doi/abs/10.1145/3340531.3412091>

**AUTHORS:** Qianzhen Zhang, Deke Guo, Xiang Zhao, Xinyi Li, Xi Wang

**HIGHLIGHT:** This motivates us to explore mining seasonal-periodic subgraphs, and the investigation presents a novel model, called maximal  $\bar{f}$ -periodic  $\$$ &oslash;mega $\$$ -seasonal  $k$ -subgraph.

283, **TITLE:** Multiplex Graph Neural Networks for Multi-behavior Recommendation

<https://dl.acm.org/doi/abs/10.1145/3340531.3412119>

**AUTHORS:** Weifeng Zhang, Jingwen Mao, Yi Cao, Congfu Xu

**HIGHLIGHT:** In this paper, a more general model named Multiplex Graph Neural Network (MGNN) is proposed as a remedy.

284, **TITLE:** Robust Normalized Squares Maximization for Unsupervised Domain Adaptation

<https://dl.acm.org/doi/abs/10.1145/3340531.3412083>

**AUTHORS:** Wenju Zhang, Xiang Zhang, Qing Liao, Wenjing Yang, Long Lan, Zhigang Luo

**HIGHLIGHT:** In this paper, we propose a novel normalized squares maximization (NSM) loss in which the maximum squares is normalized by the sum of squares of class sizes.

- 285, TITLE: Community Identification in Signed Networks: A K-Truss Based Model  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412117>  
AUTHORS: Jun Zhao, Renjie Sun, Qiuyu Zhu, Xiaoyang Wang, Chen Chen  
HIGHLIGHT: To better describe the communities, we propose a novel model, named signed k-truss, which leverages the properties of k-truss and balanced triangle.
- 286, TITLE: An Event-Oriented Neural Ranking Model for News Retrieval  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412082>  
AUTHORS: Lin Zhao, Wanhui Qian, Liangjun Zang, Fuqing Zhu, Yijun Lu, Ruixuan Li, Jizhong Han, Songlin Hu  
HIGHLIGHT: In this paper, we propose a novel and effective event-oriented neural ranking model for news retrieval (ENRMNR).
- 287, TITLE: Revisiting Alternative Experimental Settings for Evaluating Top-N Item Recommendation Algorithms  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412095>  
AUTHORS: Wayne Xin Zhao, Junhua Chen, Pengfei Wang, Qi Gu, Ji-Rong Wen  
HIGHLIGHT: In this paper, we revisit alternative experimental settings for evaluating top-N recommendation algorithms, considering three important factors, namely dataset splitting, sampled metrics and domain selection.
- 288, TITLE: Dimension Relation Modeling for Click-Through Rate Prediction  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412108>  
AUTHORS: Zihao Zhao, Zhiwei Fang, Yong Li, Changping Peng, Yongjun Bao, Weipeng Yan  
HIGHLIGHT: In this paper, we find it has clear positive effects on CTR prediction to model such relations and propose a novel Dimension Relation Module (DRM) to capture them through dimension recalibration.
- 289, TITLE: On-demand Influencer Discovery on Social Media  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412134>  
AUTHORS: Cheng Zheng, Qin Zhang, Sean Young, Wei Wang  
HIGHLIGHT: To alleviate this limitation, we investigate an on-Demand Influencer Discovery (DID) framework that is able to identify influencers on any subject depicted by a few user-specified keywords, regardless of its popularity on social media.
- 290, TITLE: Data Augmentation for Graph Classification  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412086>  
AUTHORS: Jiajun Zhou, Jie Shen, Qi Xuan  
HIGHLIGHT: Towards this, we introduce data augmentation on graphs and present two heuristic algorithms: \emrandom mapping and \emmotif-similarity mapping, to generate more weakly labeled data for small-scale benchmark datasets via heuristic modification of graph structures.
- 291, TITLE: Diversifying Multi-aspect Search Results Using Simpson's Diversity Index  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412163>  
AUTHORS: Jianghong Zhou, Eugene Agichtein, Surya Kallumadi  
HIGHLIGHT: To address this problem, we introduce a novel method by adapting the Simpson's Diversity Index from biology, which enables a more effective and efficient quadratic search result diversification algorithm.
- 292, TITLE: Leveraging Historical Interaction Data for Improving Conversational Recommender System  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412098>  
AUTHORS: Kun Zhou, Wayne Xin Zhao, Hui Wang, Sirui Wang, Fuzheng Zhang, Zhongyuan Wang, Ji-Rong Wen  
HIGHLIGHT: For this purpose, we propose a novel pre-training approach to integrating both item-based preference sequence (from historical interaction data) and attribute-based preference sequence (from conversation data) via pre-training methods.
- 293, TITLE: Behavior-driven Student Performance Prediction with Tri-branch Convolutional Neural Network  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412110>  
AUTHORS: Jian Zong, Chaoran Cui, Yuling Ma, Li Yao, Meng Chen, Yilong Yin  
HIGHLIGHT: In this paper, we seek to address the problem by analyzing students' daily studying and living behavior, which is comprehensively recorded via campus smart cards.
- 294, TITLE: Multimodal Clustering via Deep Commonness and Uniqueness Mining  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412103>  
AUTHORS: Linlin Zong, Faqiang Miao, Xianchao Zhang, Bo Xu

**HIGHLIGHT:** In this paper, we enhance the mining of modality-common knowledge by extracting the modality-unique knowledge of each modality simultaneously.

295, **TITLE:** An Empirical Study on Clarifying Question-Based Systems

<https://dl.acm.org/doi/abs/10.1145/3340531.3412094>

**AUTHORS:** Jie Zou, Evangelos Kanoulas, Yiqun Liu

**HIGHLIGHT:** In this work, we conduct an online experiment by deploying an experimental system, which interacts with users by asking clarifying questions against a product repository.

296, **TITLE:** AutoADR: Automatic Model Design for Ad Relevance

<https://dl.acm.org/doi/abs/10.1145/3340531.3412688>

**AUTHORS:** Yiren Chen, Yaming Yang, Hong Sun, Yujing Wang, Yu Xu, Wei Shen, Rong Zhou, Yunhai Tong, Jing Bai, Ruofei Zhang

**HIGHLIGHT:** In this paper, we propose AutoADR (Automatic model design for AD Relevance) --- a novel end-to-end framework to address this challenge, and share our experience to ship these cutting-edge techniques into online Ad Relevance system at Microsoft Bing.

297, **TITLE:** U-rank: Utility-oriented Learning to Rank with Implicit Feedback

<https://dl.acm.org/doi/abs/10.1145/3340531.3412756>

**AUTHORS:** Xinyi Dai, Jiawei Hou, Qing Liu, Yunjia Xi, Ruiming Tang, Weinan Zhang, Xiuqiang He, Jun Wang, Yong Yu

**HIGHLIGHT:** To this end, we propose a novel ranking framework called U-rank that directly optimizes the expected utility of the ranking list.

298, **TITLE:** Personalized Bundle Recommendation in Online Games

<https://dl.acm.org/doi/abs/10.1145/3340531.3412734>

**AUTHORS:** Qilin Deng, Kai Wang, Minghao Zhao, Zhene Zou, Runze Wu, Jianrong Tao, Changjie Fan, Liang Chen

**HIGHLIGHT:** In this paper, we target at a practical but less explored recommendation problem named bundle recommendation, which aims to offer a combination of items to users.

299, **TITLE:** Learning Formatting Style Transfer and Structure Extraction for Spreadsheet Tables with a Hybrid Neural Network Architecture

<https://dl.acm.org/doi/abs/10.1145/3340531.3412718>

**AUTHORS:** Haoyu Dong, Jiong Yang, Shi Han, Dongmei Zhang

**HIGHLIGHT:** In this paper, we propose techniques for table formatting style transfer, i.e., to automatically format a target table according to the style of a reference table.

300, **TITLE:** The Utility of Context When Extracting Entities From Legal Documents

<https://dl.acm.org/doi/abs/10.1145/3340531.3412746>

**AUTHORS:** Jonathan Donnelly, Adam Roegiest

**HIGHLIGHT:** Inspired by previous work in Named Entity Recognition (NER), we investigate how NER techniques can be leveraged to aid lawyers in this review process.

301, **TITLE:** Learning to Rank in the Position Based Model with Bandit Feedback

<https://dl.acm.org/doi/abs/10.1145/3340531.3412723>

**AUTHORS:** Beyza Ermis, Patrick Ernst, Yannik Stein, Giovanni Zappella

**HIGHLIGHT:** We propose novel extensions of two well-known algorithms viz.

302, **TITLE:** Fusing Global Domain Information and Local Semantic Information to Classify Financial Documents

<https://dl.acm.org/doi/abs/10.1145/3340531.3412707>

**AUTHORS:** Mengzhen Fan, Dawei Cheng, Fangzhou Yang, Siqiang Luo, Yifeng Luo, Weining Qian, Aoying Zhou

**HIGHLIGHT:** In this paper, we implement a document classification framework, named GraphSEAT, to classify financial documents for a leading financial information service provider in China.

303, **TITLE:** MTBRN: Multiplex Target-Behavior Relation Enhanced Network for Click-Through Rate Prediction

<https://dl.acm.org/doi/abs/10.1145/3340531.3412729>

**AUTHORS:** Yufei Feng, Fuyu Lv, Binbin Hu, Fei Sun, Kun Kuang, Yang Liu, Qingwen Liu, Wenwu Ou

**HIGHLIGHT:** In this paper, we propose a new framework named Multiplex Target-Behavior Relation enhanced Network (MTBRN) to leverage multiplex relations between user behaviors and target item to enhance CTR prediction.

304, **TITLE:** Fine-Tuned Compressed Representations of Vessel Trajectories

<https://dl.acm.org/doi/abs/10.1145/3340531.3412706>

AUTHORS: Giannis Fikioris, Kostas Patroumpas, Alexander Artakis, Georgios Paliouras, Manolis Pitsikalis  
HIGHLIGHT: In this work, we present an extension of this system, that allows the user to fine-tune trajectory compression according to the requirements of a given application.

305, TITLE: Intent-Driven Similarity in E-Commerce Listings

<https://dl.acm.org/doi/abs/10.1145/3340531.3412715>

AUTHORS: Gilad Fuchs, Yoni Acriche, Idan Hasson, Pavel Petrov

HIGHLIGHT: In this paper we present a method we call "Listing2Query", or "L2Q", which uses a Sequence Labeling approach to learn token importance from our users?

306, TITLE: Impression Pacing for Jobs Marketplace at LinkedIn

<https://dl.acm.org/doi/abs/10.1145/3340531.3412711>

AUTHORS: Sahin Cem Geyik, Luthfur Chowdhury, Florian Raudies, Wen Pu, Jianqiang Shen

HIGHLIGHT: In this paper, we propose an impression-based spend computation system, hence an impression-based pacing scheme.

307, TITLE: Bid Shading in The Brave New World of First-Price Auctions

<https://dl.acm.org/doi/abs/10.1145/3340531.3412689>

AUTHORS: Djordje Gligorijevic, Tian Zhou, Bharatbhusan Shetty, Brendan Kitts, Shengjun Pan, Junwei Pan, Aaron Flores

HIGHLIGHT: In this study, we propose a machine learning approach of modeling optimal bid shading for non-censored online first-price ad auctions.

308, TITLE: Prospective Modeling of Users for Online Display Advertising via Deep Time-Aware Model

<https://dl.acm.org/doi/abs/10.1145/3340531.3412739>

AUTHORS: Djordje Gligorijevic, Jelena Gligorijevic, Aaron Flores

HIGHLIGHT: In this study, we propose a novel deep time-aware approach designed to model sequences of users' activities and capture implicit temporal signals of users' conversion intents.

309, TITLE: Learning to Profile: User Meta-Profile Network for Few-Shot Learning

<https://dl.acm.org/doi/abs/10.1145/3340531.3412722>

AUTHORS: Hao Gong, Qifang Zhao, Tianyu Li, Derek Cho, DuyKhuong Nguyen

HIGHLIGHT: 1) Meta-learning model: In the context of representation learning with e-commerce user behavior data, we propose a meta-learning framework called the Meta-Profile Network, which extends the ideas of matching network and relation network for knowledge transfer and fast adaptation; 2) Encoding strategy: To keep high fidelity of large-scale long-term sequential behavior data, we propose a time-heatmap encoding strategy that allows the model to encode data effectively; 3) Deep network architecture: A multi-modal model combined with multi-task learning architecture is utilized to address the cross-domain knowledge learning and insufficient label problems.

310, TITLE: EdgeRec: Recommender System on Edge in Mobile Taobao

<https://dl.acm.org/doi/abs/10.1145/3340531.3412700>

AUTHORS: Yu Gong, Ziwen Jiang, Yufei Feng, Binbin Hu, Kaiqi Zhao, Qingwen Liu, Wenwu Ou

HIGHLIGHT: Our work, to our best knowledge, is the first attempt to design and implement the novel Recommender System on Edge (EdgeRec), which achieves Real-time User Perception and Real-time System Feedback.

311, TITLE: Price Forecast with High-Frequency Finance Data: An Autoregressive Recurrent Neural Network Model with Technical Indicators

<https://dl.acm.org/doi/abs/10.1145/3340531.3412738>

AUTHORS: Yuechun Gu, Da Yan, Sibao Yan, Zhe Jiang

HIGHLIGHT: We propose to adopt an autoregressive recurrent network instead so that the loss of the prediction at every time step contributes to the model training; we also treat a rich set of technical indicators at each time step as covariates to enhance the model input.

312, TITLE: Deep Multifaceted Transformers for Multi-objective Ranking in Large-Scale E-commerce Recommender Systems

<https://dl.acm.org/doi/abs/10.1145/3340531.3412697>

AUTHORS: Yulong Gu, Zhuoye Ding, Shuaiqiang Wang, Lixin Zou, Yiding Liu, Dawei Yin

HIGHLIGHT: In this paper, we argue that it is crucial to formulate users' different interests based on multiple types of behaviors and perform multi-task learning for significant improvement in multiple objectives simultaneously.



313, TITLE: A Deep Prediction Network for Understanding Advertiser Intent and Satisfaction  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412681>  
AUTHORS: Liyi Guo, Rui Lu, Haoqi Zhang, Junqi Jin, Zhenzhe Zheng, Fan Wu, Jin Li, Haiyang Xu, Han Li, Wenkai Lu, Jian Xu, Kun Gai  
HIGHLIGHT: In this paper, we propose a novel Deep Satisfaction Prediction Network (DSPN), which models advertiser intent and satisfaction simultaneously.

314, TITLE: DeText: A Deep Text Ranking Framework with BERT  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412699>  
AUTHORS: Weiwei Guo, Xiaowei Liu, Sida Wang, Huiji Gao, Ananth Sankar, Zimeng Yang, Qi Guo, Liang Zhang, Bo Long, Bee-Chung Chen, Deepak Agarwal  
HIGHLIGHT: In this paper, we investigate how to build an efficient BERT-based ranking model for industry use cases.

315, TITLE: P-Companion: A Principled Framework for Diversified Complementary Product Recommendation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412732>  
AUTHORS: Junheng Hao, Tong Zhao, Jin Li, Xin Luna Dong, Christos Faloutsos, Yizhou Sun, Wei Wang  
HIGHLIGHT: Given one product, how to recommend its complementary products of different types is the key problem we tackle in this work.

316, TITLE: Loan Default Analysis with Multiplex Graph Learning  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412724>  
AUTHORS: Binbin Hu, Zhiqiang Zhang, Jun Zhou, Jingli Fang, Quanhui Jia, Yanming Fang, Quan Yu, Yuan Qi  
HIGHLIGHT: To address these issues, we develop a novel attributed multiplex graph based loan default detection approach for effectively integrating multiplex relations in financial scenarios.

317, TITLE: Imbalanced Time Series Classification for Flight Data Analyzing with Nonlinear Granger Causality Learning  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412710>  
AUTHORS: Hao Huang, Chenxiao Xu, Shinjae Yoo, Weizhong Yan, Tianyi Wang, Feng Xue  
HIGHLIGHT: Here, we present a neural network classification model for imbalanced multivariate time series by leveraging the information learned from normal class, which can also learn the nonlinear Granger causality for each class, so that we can pinpoint how time series classes differ from each other.

318, TITLE: Personalized Flight Itinerary Ranking at Fliggy  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412735>  
AUTHORS: Jinhong Huang, Yang Li, Shan Sun, Bufeng Zhang, Jin Huang  
HIGHLIGHT: To this end, a novel Personalized Flight itinerary Ranking Network (PFRN) is proposed in this paper.

319, TITLE: Learning Effective Representations for Person-Job Fit by Feature Fusion  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412717>  
AUTHORS: Junshu Jiang, Songyun Ye, Wei Wang, Jingran Xu, Xiaosheng Luo  
HIGHLIGHT: In this paper, we propose to learn comprehensive and effective representations of the candidates and job posts via feature fusion.

320, TITLE: Incorporating User Feedback into Sequence to Sequence Model Training  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412714>  
AUTHORS: Michael Kazi, Weiwei Guo, Huiji Gao, Bo Long  
HIGHLIGHT: In this work, we propose training a model with both the search history and user feedback datasets.

321, TITLE: Magellan: A Personalized Travel Recommendation System Using Transaction Data  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412725>  
AUTHORS: Konik Kothari, Dhruv Gelda, Wei Zhang, Hao Yang  
HIGHLIGHT: We present Magellan - a personalized travel recommendation system that is built entirely from card transaction data.

322, TITLE: ART (Attractive Recommendation Tailor): How the Diversity of Product Recommendations Affects Customer Purchase Preference in Fashion Industry?  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412687>  
AUTHORS: Hyokmin Kwon, Jaeho Han, Kyungsik Han  
HIGHLIGHT: This study examines the impact of the 'diversity' of product recommendations on the 'preference' of a customer, using online/offline data from a leading fashion company.

- 323, TITLE: AliMeKG: Domain Knowledge Graph Construction and Application in E-commerce  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412685>  
AUTHORS: Feng-Lin Li, Hehong Chen, Guohai Xu, Tian Qiu, Feng Ji, Ji Zhang, Haiqing Chen  
HIGHLIGHT: In the paper, we systematically introduce how we construct domain knowledge graph from free text, and demonstrate its business value with several applications.
- 324, TITLE: Peer-inspired Student Performance Prediction in Interactive Online Question Pools with Graph Neural Network  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412733>  
AUTHORS: Haotian Li, Huan Wei, Yong Wang, Yangqiu Song, Huamin Qu  
HIGHLIGHT: In this paper, we propose a novel approach using Graph Neural Networks (GNNs) to achieve better student performance prediction in interactive online question pools.
- 325, TITLE: Spending Money Wisely: Online Electronic Coupon Allocation based on Real-Time User Intent Detection  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412745>  
AUTHORS: Liangwei Li, Liucheng Sun, Chenwei Weng, Chengfu Huo, Weijun Ren  
HIGHLIGHT: In this paper, we decompose the coupon allocation task into two subtasks: the user intent detection task and the allocation task.
- 326, TITLE: Improving Multi-Scenario Learning to Rank in E-commerce by Exploiting Task Relationships in the Label Space  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412713>  
AUTHORS: Pengcheng Li, Runze Li, Qing Da, An-Xiang Zeng, Lijun Zhang  
HIGHLIGHT: To solve the above problem, which we name Multi-Scenario Learning to Rank, we propose the Hybrid of implicit and explicit Mixture-of-Experts (HMoE) approach.
- 327, TITLE: Graph Neural Network for Tag Ranking in Tag-enhanced Video Recommendation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3416021>  
AUTHORS: Qi Liu, Ruobing Xie, Lei Chen, Shukai Liu, Ke Tu, Peng Cui, Bo Zhang, Leyu Lin  
HIGHLIGHT: In this paper, we propose a novel Graph neural network based tag ranking (GraphTR) framework on a huge heterogeneous network with video, tag, user and media.
- 328, TITLE: Decoupled Graph Convolution Network for Inferring Substitutable and Complementary Items  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412695>  
AUTHORS: Yiding Liu, Yulong Gu, Zhuoye Ding, Junchao Gao, Ziyi Guo, Yongjun Bao, Weipeng Yan  
HIGHLIGHT: To fill this gap, we propose a novel solution, namely Decoupled Graph Convolutional Network (DecGCN), to solve the problem of inferring substitutable and complementary items.
- 329, TITLE: Two-Stage Audience Expansion for Financial Targeting in Marketing  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412748>  
AUTHORS: Zhining Liu, Xiao-Fan Niu, Chenyi Zhuang, Yize Tan, Yixiang Mu, Jinjie Gu, Guannan Zhang  
HIGHLIGHT: Therefore, we propose a method to incorporate biased feedbacks with seeds in a meta-learning manner to pan for golden seeds from the noisy seed-set.
- 330, TITLE: Efficiently Training Intelligible Models for Global Explanations  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412702>  
AUTHORS: Yin Lou, Yongliang Wang, Shiwei Liang, Yang Dong  
HIGHLIGHT: In this work, we aim to improve the training efficiency of GAM.
- 331, TITLE: TwinBERT: Distilling Knowledge to Twin-Structured Compressed BERT Models for Large-Scale Retrieval  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412747>  
AUTHORS: Wenhao Lu, Jian Jiao, Ruofei Zhang  
HIGHLIGHT: To address the problem, we present TwinBERT model, which has two improvements: 1) represent query and document separately using twin-structured encoders and 2) each encoder is a highly compressed BERT-like model with less than one third of the parameters.
- 332, TITLE: Learning to Create Better Ads: Generation and Ranking Approaches for Ad Creative Refinement  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412720>  
AUTHORS: Shaunak Mishra, Manisha Verma, Yichao Zhou, Kapil Thadani, Wei Wang

**HIGHLIGHT:** In particular, given an input ad creative, we study approaches to refine the given ad text and image by: (i) generating new ad text, (ii) recommending keyphrases for new ad text, and (iii) recommending image tags (objects in the image) to select new ad image.

333, **TITLE:** Personalizing Natural Language Understanding using Multi-armed Bandits and Implicit Feedback  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412736>

**AUTHORS:** Fabian Moerchen, Patrick Ernst, Giovanni Zappella

**HIGHLIGHT:** In this work, we describe how we leveraged multi-armed bandits in combination with implicit customer feedback to improve accuracy and personalization of responses to voice request in the music domain.

334, **TITLE:** MiNet: Mixed Interest Network for Cross-Domain Click-Through Rate Prediction

<https://dl.acm.org/doi/abs/10.1145/3340531.3412728>

**AUTHORS:** Wentao Ouyang, Xiuwu Zhang, Lei Zhao, Jinmei Luo, Yu Zhang, Heng Zou, Zhaojie Liu, Yanlong Du

**HIGHLIGHT:** In this paper, we address this problem and leverage auxiliary data from a source domain to improve the CTR prediction performance of a target domain.

335, **TITLE:** Learning to Infer User Hidden States for Online Sequential Advertising

<https://dl.acm.org/doi/abs/10.1145/3340531.3412721>

**AUTHORS:** Zhaoqing Peng, Junqi Jin, Lan Luo, Yaodong Yang, Rui Luo, Jun Wang, Weinan Zhang, Haiyang Xu, Miao Xu, Chuan Yu, Tiejian Luo, Han Li, Jian Xu, Kun Gai

**HIGHLIGHT:** In this paper, we model this intention as a latent variable and formulate the problem as a Partially Observable Markov Decision Process (POMDP) where the underlying intents are inferred based on the observable behaviors.

336, **TITLE:** Search-based User Interest Modeling with Lifelong Sequential Behavior Data for Click-Through Rate Prediction

<https://dl.acm.org/doi/abs/10.1145/3340531.3412744>

**AUTHORS:** Qi Pi, Guorui Zhou, Yujing Zhang, Zhe Wang, Lejian Ren, Ying Fan, Xiaoqiang Zhu, Kun Gai

**HIGHLIGHT:** In this paper, we tackle this problem by designing a new modeling paradigm, which we name as Search-based Interest Model (SIM).

337, **TITLE:** Category-aware Graph Neural Networks for Improving E-commerce Review Helpfulness Prediction

<https://dl.acm.org/doi/abs/10.1145/3340531.3412691>

**AUTHORS:** Xiaoru Qu, Zhao Li, Jialin Wang, Zhipeng Zhang, Pengcheng Zou, Junxiao Jiang, Jiaming Huang, Rong Xiao, Ji Zhang, Jun Gao

**HIGHLIGHT:** To handle these two challenges, we propose CA-GNN (Category Aware Graph Neural Networks), which uses graph neural networks (GNNs) to identify helpful reviews in a multi-task manner --- we employ GNNs with one shared and many item-specific graph convolutions to learn the common features and each item's specific criterion for classifying reviews simultaneously.

338, **TITLE:** Expert-in-the-loop AI for Polymer Discovery

<https://dl.acm.org/doi/abs/10.1145/3340531.3416020>

**AUTHORS:** Petar Ristoski, Dmitry Yu Zubarev, Anna Lisa Gentile, Nathaniel Park, Daniel Sanders, Daniel Gruhl, Linda Kato, Steve Welch

**HIGHLIGHT:** We propose a methodology to quickly capture the intent and expertise of a domain expert in order to train personalized AI models for specific tasks.

339, **TITLE:** An Extensive Investigation of Machine Learning Techniques for Sleep Apnea Screening

<https://dl.acm.org/doi/abs/10.1145/3340531.3412686>

**AUTHORS:** Jose F. Rodrigues, Jean-Louis Pepin, Lorraine Goeuriot, Sihem Amer-Yahia

**HIGHLIGHT:** In this work, we extensively investigate the use of Machine Learning techniques in the task of determining which factors are more revealing with respect to OSA along with a discussion of the challenges to perform such a task.

340, **TITLE:** Continuous Improvement of Medical Diagnostic Systems with Large Scale Patient Vignette Simulation

<https://dl.acm.org/doi/abs/10.1145/3340531.3412693>

**AUTHORS:** Suhrid Satyal, Nick Fletcher, Shameek Ghosh

**HIGHLIGHT:** Here, we address this challenge using a novel patient vignette simulation algorithm within an iterative clinician-in-the-loop methodology for semi-automatically evaluating and deploying medical diagnostic systems in production.

341, **TITLE:** Detection of Novel Social Bots by Ensembles of Specialized Classifiers

<https://dl.acm.org/doi/abs/10.1145/3340531.3412698>

**AUTHORS:** Mohsen Sayyadiharikandeh, Onur Varol, Kai-Cheng Yang, Alessandro Flammini, Filippo Menczer

**HIGHLIGHT:** To address these issues, we propose a new supervised learning method that trains classifiers specialized for each class of bots and combines their decisions through the maximum rule.

342, **TITLE:** ITAD: Integrative Tensor-based Anomaly Detection System for Reducing False Positives of Satellite Systems  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412716>

**AUTHORS:** Youjin Shin, Sangyup Lee, Shahroz Tariq, Myeong Shin Lee, Okchul Jung, Daewon Chung, Simon S. Woo  
**HIGHLIGHT:** In this work, we introduce an Integrative Tensor-based Anomaly Detection (ITAD) framework to detect anomalies in a satellite system with the goal of minimizing false positives.

343, **TITLE:** Helix: DGA Domain Embeddings for Tracking and Exploring Botnets

<https://dl.acm.org/doi/abs/10.1145/3340531.3416022>

**AUTHORS:** Lior Sidi, Yisroel Mirsky, Asaf Nadler, Yuval Elovici, Asaf Shabtai

**HIGHLIGHT:** In this paper, we present Helix, a method for tracking and exploring botnets.

344, **TITLE:** Crime Linkage Based on Textual Hebrew Police Reports Utilizing Behavioral Patterns

<https://dl.acm.org/doi/abs/10.1145/3340531.3412694>

**AUTHORS:** Adir Solomon, Amit Magen, Simo Hanouna, Mor Kertis, Bracha Shapira, Lior Rokach

**HIGHLIGHT:** In this study, we propose an automatic and language independent method for extracting behavioral patterns from police reports.

345, **TITLE:** AGATHA: Automatic Graph Mining And Transformer based Hypothesis Generation Approach

<https://dl.acm.org/doi/abs/10.1145/3340531.3412684>

**AUTHORS:** Justin Sybrandt, Ilya Tyagin, Michael Shutman, Ilya Safro

**HIGHLIGHT:** We present AGATHA, a deep-learning hypothesis generation system that learns a data-driven ranking criteria to recommend new biomedical connections.

346, **TITLE:** Query Understanding for Surfacing Under-served Music Content

<https://dl.acm.org/doi/abs/10.1145/3340531.3412741>

**AUTHORS:** Federico Tomasi, Rishabh Mehrotra, Aasish Pappu, Judith B&uuml;tepage, Brian Brost, Hugo Galv&atilde;o, Mounia Lalmas

**HIGHLIGHT:** We propose a framework to develop query understanding techniques to identify potential non-focused search queries on a music streaming platform, where users' information needs are non-specific enough to expose under-served content without severely impacting user satisfaction.

347, **TITLE:** LiFT: A Scalable Framework for Measuring Fairness in ML Applications

<https://dl.acm.org/doi/abs/10.1145/3340531.3412705>

**AUTHORS:** Sriram Vasudevan, Krishnaram Kenthapadi

**HIGHLIGHT:** Motivated by the need to understand and address algorithmic bias in web-scale ML systems and the limitations of existing fairness toolkits, we present the LinkedIn Fairness Toolkit (LiFT), a framework for scalable computation of fairness metrics as part of large ML systems.

348, **TITLE:** Match Tracing: A Unified Framework for Real-time Win Prediction and Quantifiable Performance Evaluation

<https://dl.acm.org/doi/abs/10.1145/3340531.3412727>

**AUTHORS:** Kai Wang, Hao Li, Linxia Gong, Jianrong Tao, Runze Wu, Changjie Fan, Liang Chen, Peng Cui

**HIGHLIGHT:** To this end, we develop a unified Match Tracing framework (namely, MT), for tackling the win prediction and performance evaluation jointly.

349, **TITLE:** Masked-field Pre-training for User Intent Prediction

<https://dl.acm.org/doi/abs/10.1145/3340531.3412726>

**AUTHORS:** Peng Wang, Jiang Xu, Chunyi Liu, Hao Feng, Zang Li, Jieping Ye

**HIGHLIGHT:** To overcome data sparsity, we propose a masked-field pre-training framework.

350, **TITLE:** Efficient Neural Query Auto Completion

<https://dl.acm.org/doi/abs/10.1145/3340531.3412701>

**AUTHORS:** Sida Wang, Weiwei Guo, Huiji Gao, Bo Long

**HIGHLIGHT:** In this paper, we propose an efficient neural QAC system with effective context modeling to overcome these challenges.

351, **TITLE:** A Joint Inverse Reinforcement Learning and Deep Learning Model for Drivers' Behavioral Prediction

<https://dl.acm.org/doi/abs/10.1145/3340531.3412682>

AUTHORS: Guojun Wu, Yanhua Li, Shikai Luo, Ge Song, Qichao Wang, Jing He, Jieping Ye, Xiaohu Qie, Hongtu Zhu  
HIGHLIGHT: This paper aims to develop a joint framework of combining inverse reinforcement learning (IRL) with deep learning (DL) regression model, called IRL-DL, to predict drivers' future behavior in ride-hailing platforms.

352, TITLE: Deep Behavior Tracing with Multi-level Temporality Preserved Embedding  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412696>  
AUTHORS: Runze Wu, Hao Deng, Jianrong Tao, Changjie Fan, Qi Liu, Liang Chen  
HIGHLIGHT: In this paper, we propose an intuitive and effective embedding method called Multi-level Aligned Temporal Embedding (MATE), which can tackle the temporal irregularity of recent behavior sequence and then align with the long-term periodicity in the activity cycle.

353, TITLE: Zero-Shot Heterogeneous Transfer Learning from Recommender Systems to Cold-Start Search Retrieval  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412752>  
AUTHORS: Tao Wu, Ellie Ka-In Chio, Heng-Tze Cheng, Yu Du, Steffen Rendle, Dima Kuzmin, Ritesh Agarwal, Li Zhang, John Anderson, Sarvjeet Singh, Tushar Chandra, Ed H. Chi, Wen Li, Ankit Kumar, Xiang Ma, Alex Soares, Nitin Jindal, Pei Cao  
HIGHLIGHT: In this paper, we propose a new Zero-Shot Heterogeneous Transfer Learning framework that transfers learned knowledge from the recommender system component to improve the search component of a content platform.

354, TITLE: Relevance Ranking for Real-Time Tweet Search  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412743>  
AUTHORS: Yan Xia, Yu Sun, Tian Wang, Juan Caicedo Carvajal, Jinliang Fan, Bhargav Mangipudi, Lisa Huang, Yatharth Saraf  
HIGHLIGHT: Considering the above properties and constraints, we present a relevance ranking system for Tweet search addressing all these challenges at Twitter.

355, TITLE: Generating Full Spatiotemporal Vehicular Paths: A Data Fusion Approach  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412708>  
AUTHORS: Nan Xiao, Nan Hu, Liang Yu, Cheng Long  
HIGHLIGHT: In this paper, we leverage two types of large traffic datasets - point flows and sample trajectories - to generate the full city-scale vehicular paths.

356, TITLE: Multi-Channel Sellers Traffic Allocation in Large-scale E-commerce Promotion  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412730>  
AUTHORS: Shen Xin, Yizhou Ye, Martin Ester, Cheng Long, Jie Zhang, Zhao Li, Kaiying Yuan, Yanghua Li  
HIGHLIGHT: To address these problems, we design a Multi-Channel Sellers Traffic Allocation (MCSTA) optimization model to obtain optimal page view (PV) distribution concerning global GMV.

357, TITLE: aDMSCN: A Novel Perspective for User Intent Prediction in Customer Service Bots  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412683>  
AUTHORS: Kuan Xu, Chilin Fu, Xiaolu Zhang, Cen Chen, Ya-Lin Zhang, Wenge Rong, Zujie Wen, Jun Zhou, Xiaolong Li, Yu Qiao  
HIGHLIGHT: To address these two problems, we propose an attention-based Deep Multi-instance Sequential Cross Network (aDMSCN) to deal with the UIP task.

358, TITLE: GraphSAIL: Graph Structure Aware Incremental Learning for Recommender Systems  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412754>  
AUTHORS: Yishi Xu, Yingxue Zhang, Wei Guo, Huifeng Guo, Ruiming Tang, Mark Coates  
HIGHLIGHT: In this work, we propose to update GNN-based recommender models incrementally so that the computation time can be greatly reduced and models can be updated more frequently.

359, TITLE: Ranking User Attributes for Fast Candidate Selection in Recommendation Systems  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412742>  
AUTHORS: Huichao Xue  
HIGHLIGHT: We propose a model that forecasts the relevance of documents matched by each individual attribute.

360, TITLE: Learning to Build User-tag Profile in Recommendation System  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412719>  
AUTHORS: Su Yan, Xin Chen, Ran Huo, Xu Zhang, Leyu Lin  
HIGHLIGHT: In this paper, we propose a user tag profiling model (UTPM) to study user-tag profiling as a multi-label classification task using deep neural networks.

- 361, TITLE: You Are How You Use: Catching Gas Theft Suspects among Diverse Restaurant Users  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412751>  
AUTHORS: Xiaodu Yang, Xiuwen Yi, Shun Chen, Sijie Ruan, Junbo Zhang, Yu Zheng, Tianrui Li  
HIGHLIGHT: In this paper, we propose a gas-theft detection method msRank to discover suspicious restaurant users when only scarce labels are available.
- 362, TITLE: Query-aware Tip Generation for Vertical Search  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412740>  
AUTHORS: Yang Yang, Junmei Hao, Canjia Li, Zili Wang, Jingang Wang, Fuzheng Zhang, Rao Fu, Peixu Hou, Gong Zhang, Zhongyuan Wang  
HIGHLIGHT: To address this issue, this paper proposes a query-aware tip generation framework, integrating query information into encoding and subsequent decoding processes.
- 363, TITLE: BotSpot: A Hybrid Learning Framework to Uncover Bot Install Fraud in Mobile Advertising  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412690>  
AUTHORS: Tianjun Yao, Qing Li, Shangsong Liang, Yadong Zhu  
HIGHLIGHT: In this work, we propose an anti-fraud method based on heterogeneous graph that incorporates both local context and global context via graph neural networks (GNN) and gradient boosting classifier to detect bot fraud installs at Mobvista, a leading global mobile advertising company.
- 364, TITLE: Community Mitigation: A Data-driven System for COVID-19 Risk Assessment in a Hierarchical Manner  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412753>  
AUTHORS: Yanfang Ye, Yujie Fan, Shifu Hou, Yiming Zhang, Yiyue Qian, Shiyu Sun, Qian Peng, Mingxuan Ju, Wei Song, Kenneth Loparo  
HIGHLIGHT: To slow the spread of virus infections and better respond with actionable strategies for community mitigation, leveraging the large-scale and real-time pandemic related data generated from heterogeneous sources (e.g., disease related data, demographic data, mobility data, and social media data), in this work, we propose and develop a data-driven system (named Í±-satellite), as an initial offering, to provide real-time COVID-19 risk assessment in a hierarchical manner in the United States.
- 365, TITLE: Who is Delivering My Food?: Detecting Food Delivery Abusers using Variational Reward Inference Networks  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412750>  
AUTHORS: DaeYoung Yoon, Simon S. Woo  
HIGHLIGHT: In this work, we aim to detect food delivery abusers using unauthorized vehicles, by formulating this problem as a novelty detection over sequential data.
- 366, TITLE: Elevated Road Network: A Metric Learning Method for Recognizing Whether a Vehicle is on an Elevated Road  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412703>  
AUTHORS: Xiaobing Zhang, Hailiang Xu, Jian Yang, Jia Sun, Fan Chen, Leiyun Li  
HIGHLIGHT: We propose Elevated Road Network (ERNNet), a lightweight and real industrial neural network model for mobile navigation, to solve elevated road recognition fundamentally.
- 367, TITLE: Predicting Quality of Automated Welding with Machine Learning and Semantics: A Bosch Case Study  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412737>  
AUTHORS: Baifan Zhou, Yulia Svetashova, Seongsu Byeon, Tim Pychynski, Ralf Mikut, Evgeny Kharlamov  
HIGHLIGHT: In this paper we develop an ML pipeline to predict the spot quality before the actual welding happens.
- 368, TITLE: Ensembled CTR Prediction via Knowledge Distillation  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412704>  
AUTHORS: Jieming Zhu, Jinyang Liu, Weiqi Li, Jincai Lai, Xiuqiang He, Liang Chen, Zibin Zheng  
HIGHLIGHT: Instead, our work targets at a new model training strategy based on knowledge distillation (KD). KD is a teacher-student learning framework to transfer knowledge learned from a teacher model to a student model.
- 369, TITLE: GeoLink Cruises: A Non-Synthetic Benchmark for Co-Reference Resolution on Knowledge Graphs  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412770>  
AUTHORS: Reihaneh Amini, Lu Zhou, Pascal Hitzler  
HIGHLIGHT: In this paper, we propose the use of the Cruise entities in the GeoLink data repository as a real-world instance matching benchmark for linked data and knowledge graphs.
- 370, TITLE: MLM: A Benchmark Dataset for Multitask Learning with Multiple Languages and Modalities  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412783>

- AUTHORS:** Jason Armitage, Endri Kacupaj, Golsa Tahmasebzadeh, Swati, Maria Maleshkova, Ralph Ewerth, Jens Lehmann  
**HIGHLIGHT:** In this paper, we introduce the MLM (Multiple Languages and Modalities) dataset - a new resource to train and evaluate multitask systems on samples in multiple modalities and three languages.
- 371, **TITLE:** MindReader: Recommendation over Knowledge Graph Entities with Explicit User Ratings  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412759>  
**AUTHORS:** Anders H. Brams, Anders L. Jakobsen, Theis E. Jendal, Matteo Lissandrini, Peter Dolog, Katja Hose  
**HIGHLIGHT:** To overcome this limitation, we introduce a new dataset, called the MindReader dataset, providing explicit user ratings both for items and for KG entities.
- 372, **TITLE:** ORCAS: 20 Million Clicked Query-Document Pairs for Analyzing Search  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412779>  
**AUTHORS:** Nick Craswell, Daniel Campos, Bhaskar Mitra, Emine Yilmaz, Bodo Billerbeck  
**HIGHLIGHT:** This paper describes a click data release related to the TREC Deep Learning Track document corpus.
- 373, **TITLE:** TweetsCOV19 - A Knowledge Base of Semantically Annotated Tweets about the COVID-19 Pandemic  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412765>  
**AUTHORS:** Dimitar Dimitrov, Erdal Baran, Pavlos Fafalios, Ran Yu, Xiaofei Zhu, Matthias Zloch, Stefan Dietze  
**HIGHLIGHT:** In this paper, we describe TweetsCOV19, a publicly available knowledge base of currently more than 8 million tweets, spanning October 2019 - April 2020.
- 374, **TITLE:** LensKit for Python: Next-Generation Software for Recommender Systems Experiments  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412778>  
**AUTHORS:** Michael D. Ekstrand  
**HIGHLIGHT:** In this paper, I present the next generation of the LensKit project, re-envisioning the original tool's objectives as flexible Python package for supporting recommender systems research and development.
- 375, **TITLE:** A Multidimensional Dataset Based on Crowdsourcing for Analyzing and Detecting News Bias  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412876>  
**AUTHORS:** Michael Finkler, Victoria Burkard, Adam Jatowt, Sora Lim  
**HIGHLIGHT:** In this paper, we firstly aggregate the aspects of news bias in related works by proposing a new annotation schema for labeling news bias.
- 376, **TITLE:** Feature Extraction for Large-Scale Text Collections  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412773>  
**AUTHORS:** Luke Gallagher, Antonio Mallia, J. Shane Culpepper, Torsten Suel, B. Barla Cambazoglu  
**HIGHLIGHT:** In this paper, we introduce Fxt, an open-source framework to perform efficient and scalable feature extraction.
- 377, **TITLE:** CauseNet: Towards a Causality Graph Extracted from the Web  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412763>  
**AUTHORS:** Stefan Heindorf, Yan Scholten, Henning Wachsmuth, Axel-Cyrille Ngonga Ngomo, Martin Potthast  
**HIGHLIGHT:** Notwithstanding this challenge, we compile CauseNet, a large-scale knowledge base of claimed causal relations between causal concepts.
- 378, **TITLE:** Fine-Grained Relevance Annotations for Multi-Task Document Ranking and Question Answering  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412878>  
**AUTHORS:** Sebastian Hofstätter, Markus Zlabinger, Mete Sertkan, Michael Schumler, Allan Hanbury  
**HIGHLIGHT:** In this work, we present FiRA: a novel dataset of Fine-Grained Relevance Annotations.
- 379, **TITLE:** SDM-RDFizer: An RML Interpreter for the Efficient Creation of RDF Knowledge Graphs  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412881>  
**AUTHORS:** Enrique Iglesias, Samaneh Jozashoori, David Chaves-Fraga, Diego Collarana, Maria-Esther Vidal  
**HIGHLIGHT:** In this paper, we propose the SDM-RDFizer, an interpreter of the RDF Mapping Language (RML), to transform raw data in various formats into an RDF knowledge graph.
- 380, **TITLE:** Web Page Segmentation Revisited: Evaluation Framework and Dataset  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412782>  
**AUTHORS:** Johannes Kiesel, Florian Kneist, Lars Meyer, Kristof Komlossy, Benno Stein, Martin Potthast

**HIGHLIGHT:** To address this shortcoming, we contribute two resources: (1) An evaluation framework which can be adjusted to downstream tasks by measuring the segmentation similarity regarding visual, structural, and textual elements, and which includes measures for annotator agreement, segmentation quality, and an algorithm for segmentation fusion. (2) The Webis-WebSeg-20 dataset, comprising 42,450~crowdsourced segmentations for 8,490~web pages, outranging existing sources by an order of magnitude.

381, **TITLE:** The Newspaper Navigator Dataset: Extracting Headlines and Visual Content from 16 Million Historic Newspaper Pages in Chronicling America

<https://dl.acm.org/doi/abs/10.1145/3340531.3412767>

**AUTHORS:** Benjamin Charles Germain Lee, Jaime Mears, Eileen Jakeway, Meghan Ferriter, Chris Adams, Nathan Yarasavage, Deborah Thomas, Kate Zwaard, Daniel S. Weld

**HIGHLIGHT:** We describe our pipeline that utilizes this deep learning model to extract 7 classes of visual content: headlines, photographs, illustrations, maps, comics, editorial cartoons, and advertisements, complete with textual content such as captions derived from the METS/ALTO OCR, as well as image embeddings.

382, **TITLE:** MAEC: A Multimodal Aligned Earnings Conference Call Dataset for Financial Risk Prediction

<https://dl.acm.org/doi/abs/10.1145/3340531.3412879>

**AUTHORS:** Jiazheng Li, Linyi Yang, Barry Smyth, Ruihai Dong

**HIGHLIGHT:** We introduce a new, large-scale multi-modal, text-audio paired, earnings-call dataset named MAEC, based on S&P 1500 companies.

383, **TITLE:** Argo Lite: Open-Source Interactive Graph Exploration and Visualization in Browsers

<https://dl.acm.org/doi/abs/10.1145/3340531.3412877>

**AUTHORS:** Siwei Li, Zhiyan Zhou, Anish Upadhayay, Omar Shaikh, Scott Freitas, Haekyu Park, Zijie J. Wang, Susanta Routray, Matthew Hull, Duen Horng Chau

**HIGHLIGHT:** To address these issues, we have developed Argo Lite, a new in-browser interactive graph exploration and visualization tool.

384, **TITLE:** CC-News-En: A Large English News Corpus

<https://dl.acm.org/doi/abs/10.1145/3340531.3412762>

**AUTHORS:** Joel Mackenzie, Rodger Benham, Matthias Petri, Johanne R. Trippas, J. Shane Culpepper, Alistair Moffat

**HIGHLIGHT:** We describe a static, open-access news corpus using data from the Common Crawl Foundation, who provide free, publicly available web archives, including a continuous crawl of international news articles published in multiple languages.

385, **TITLE:** PrivacyFL: A Simulator for Privacy-Preserving and Secure Federated Learning

<https://dl.acm.org/doi/abs/10.1145/3340531.3412771>

**AUTHORS:** Vaikkunth Mugunthan, Anton Peraire-Bueno, Lalana Kagal

**HIGHLIGHT:** In this paper, we introduce PrivacyFL, which is an extensible, easily configurable, and scalable simulator for federated learning environments.

386, **TITLE:** ContentWise Impressions: An Industrial Dataset with Impressions Included

<https://dl.acm.org/doi/abs/10.1145/3340531.3412774>

**AUTHORS:** Fernando B. P&eacute;rez Maurera, Maurizio Ferrari Dacrema, Lorenzo Saule, Mario Scriminaci, Paolo Cremonesi

**HIGHLIGHT:** In this article, we introduce the \dataset dataset, a collection of implicit interactions and impressions of movies and TV series from an Over-The-Top media service, which delivers its media contents over the Internet.

387, **TITLE:** Profiling Entity Matching Benchmark Tasks

<https://dl.acm.org/doi/abs/10.1145/3340531.3412781>

**AUTHORS:** Anna Primpeli, Christian Bizer

**HIGHLIGHT:** This resource paper systematically complements, profiles, and compares 21 entity matching benchmark tasks.

388, **TITLE:** A Large Test Collection for Entity Aspect Linking

<https://dl.acm.org/doi/abs/10.1145/3340531.3412875>

**AUTHORS:** Jordan Ramsdell, Laura Dietz

**HIGHLIGHT:** Complementing efforts of Nanni et al (2018), we provide a large-scale test collection which is derived from Wikipedia hyperlinks in a dump from 01/01/2020.

389, **TITLE:** A Dataset of Journalists' Interactions with Their Readership: When Should Article Authors Reply to Reader Comments?

<https://dl.acm.org/doi/abs/10.1145/3340531.3412764>

**AUTHORS:** Julian Risch, Ralf Krestel



**HIGHLIGHT:** To this end, we present a dataset of dialogs in which journalists of The Guardian replied to reader comments and identify the reasons why.

390, **TITLE:** Karate Club: An API Oriented Open-Source Python Framework for Unsupervised Learning on Graphs  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412757>  
**AUTHORS:** Benedek Rozemberczki, Oliver Kiss, Rik Sarkar  
**HIGHLIGHT:** We present Karate Club - a Python framework combining more than 30 state-of-the-art graph mining algorithms.

391, **TITLE:** Little Ball of Fur: A Python Library for Graph Sampling  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412758>  
**AUTHORS:** Benedek Rozemberczki, Oliver Kiss, Rik Sarkar  
**HIGHLIGHT:** In this paper, we describe Little Ball of Fur a Python library that includes more than twenty graph sampling algorithms.

392, **TITLE:** Falcon 2.0: An Entity and Relation Linking Tool over Wikidata  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412777>  
**AUTHORS:** Ahmad Sakor, Kuldeep Singh, Anery Patel, Maria-Esther Vidal  
**HIGHLIGHT:** In this paper, we present Falcon 2.0, the first joint entity and relation linking tool over Wikidata.

393, **TITLE:** GeoFlink: A Distributed and Scalable Framework for the Real-time Processing of Spatial Streams  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412761>  
**AUTHORS:** Salman Ahmed Shaikh, Komal Mariam, Hiroyuki Kitagawa, Kyoung-Sook Kim  
**HIGHLIGHT:** To fill this gap, we present GeoFlink, which extends Apache Flink to support spatial data types, indexes and continuous queries over spatial data streams.

394, **TITLE:** Event-QA: A Dataset for Event-Centric Question Answering over Knowledge Graphs  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412760>  
**AUTHORS:** Tarcisio Souza Costa, Simon Gottschalk, Elena Demidova  
**HIGHLIGHT:** In this paper, we present the Event-QA dataset for answering event-centric questions over knowledge graphs.

395, **TITLE:** ReQue: A Configurable Workflow and Dataset Collection for Query Refinement  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412775>  
**AUTHORS:** Mahtab Tamannaee, Hossein Fani, Fattane Zarrinkalam, Jamil Samouh, Samad Paydar, Ebrahim Bagheri  
**HIGHLIGHT:** In this paper, we implement and publicly share a configurable software workflow and a collection of gold standard datasets for training and evaluating supervised query refinement methods.

396, **TITLE:** BioKG: A Knowledge Graph for Relational Learning On Biological Data  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412776>  
**AUTHORS:** Brian Walsh, Sameh K. Mohamed, Václav Novák  
**HIGHLIGHT:** To make relational learning on biomedical data more standardised and reproducible, we propose a new biological knowledge graph which provides a compilation of curated relational data from open biological databases in a unified format with common, interlinked identifiers.

397, **TITLE:** Flexible IR Pipelines with Capreolus  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412780>  
**AUTHORS:** Andrew Yates, Kevin Martin Jose, Xinyu Zhang, Jimmy Lin  
**HIGHLIGHT:** In order to improve the flexibility of such toolkits, we propose implementing experimental pipelines as dependency graphs of functional "IR primitives," which we call modules, that can be used and combined as needed.

398, **TITLE:** MIMICS: A Large-Scale Data Collection for Search Clarification  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412772>  
**AUTHORS:** Hamed Zamani, Gord Lueck, Everest Chen, Rodolfo Quispe, Flint Luu, Nick Craswell  
**HIGHLIGHT:** In this paper, we introduce MIMICS, a collection of search clarification datasets for real web search queries sampled from the Bing query logs.

399, **TITLE:** The Enslaved Dataset: A Real-world Complex Ontology Alignment Benchmark using Wikibase  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412768>  
**AUTHORS:** Lu Zhou, Cogan Shimizu, Pascal Hitzler, Alicia M. Sheill, Seila Gonzalez Estrecha, Catherine Foley, Duncan Tarr, Dean Rehberger

**HIGHLIGHT:** In this paper, we propose a real-world dataset from the Enslaved project as a potential complex alignment benchmark.

400, **TITLE:** ReCOVery: A Multimodal Repository for COVID-19 News Credibility Research  
<https://dl.acm.org/doi/abs/10.1145/3340531.3412880>

**AUTHORS:** Xinyi Zhou, Apurva Mulay, Emilio Ferrara, Reza Zafarani

**HIGHLIGHT:** In this work, we present ReCOVery, a repository designed and constructed to facilitate research on combating such information regarding COVID-19.