KDD2022

28TH ACM
SIGKDD CONFERENCE
ON KNOWLEDGE DISCOVERY AND DATA MINING

PROGRAM

www.kdd.org/kdd2022

August 14-18, 2022

WASHINGTON DC CONVENTION CENTER

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Government Day
Aidong Zhang, UNIVERSITY OF VIRGINIA
Vasant Honavar, PENN STATE UNIVERSITY

Deep Learning Day
Chandan Reddy, VIRGINIA TECH
Danai Koutra, UNIV. OF MICHIGAN/AMAZON

Trustworthy AI Day
Hima Lakkaraju, HARVARD
Alexandra Chouldechova, CMU
Mani Srivastava, UC LOS ANGELES
Wei Wang, UC LOS ANGELES
Yizhou Sun, UC LOS ANGELES

Health Day
Fei Wang, CORNELL UNIVERSITY
Rumi Chunara, NEW YORK UNIVERSITY
Theodora Chaspari, TEXAS, A&M

Undergraduate Consortium
David C. Anastasiu, SANTA CLARA UNIVERSITY
Esra Akbas, OKLAHOMA STATE UNIVERSITY

Conference at a glance

Sunday, August 14

7:00 am - 5:00 pm	**KDD Registration** — L Street Bridge
8:00 am - 5:00 pm	**Full Day Workshop,** Deep learning practice and theory for high-dimensional, sparse, and imbalanced data — 206
8:00 am - 5:00 pm	**Full Day Workshop,** Applied Data Science for Healthcare (DSHealth): Transparent and Human-centered AI — 207A
8:00 am - 12:00 pm	**Half Day Workshop,** Document Intelligence Workshop — 209A
8:00 am - 12:00 pm	**Half Day Workshop,** ANDEA: Anomaly and Novelty Detection, Explanation, and Accommodation — 209B
8:00 am - 12:00 pm	**Half Day Workshop,** Online and Adaptive Recommender Systems (OARS) — 209C
9:00 am - 12:00 pm	**Hands-On Tutorias,** HoloViz: Visualization and Interactive Dashboards in Python — 101
9:00 am - 12:00 pm	**Hands-On Tutorial,** Reward Optimising Recommendation using Deep Learning and Fast Maximum Inner Product Search — 102B
9:00 am - 12:00 pm	**Hands-On Tutorial,** Efficient Machine Learning on Large-Scale Graphs — 201
9:00 am - 12:00 pm	**Hands-On Tutorial,** PECOS: Prediction for Enormous and Correlated Output Spaces — 202B
9:00 am - 12:00 pm	**Lecture-Style Tutorial,** Large-Scale Information Extraction under Privacy-Aware Constraints — Salon A
9:00 am - 12:00 pm	**Lecture-Style Tutorial,** Trustworthy Graph Learning: Reliability, Explainability, and Privacy Protection — Salon B
9:00 am - 12:00 pm	**Lecture-Style Tutorial,** Graph-based Representation Learning for Web-scale Recommender Systems — 102A
9:00 am - 12:00 pm	**Lecture-Style Tutorial,** New Frontiers of Scientific Text Mining: Tasks, Data, and Tools — 202A
9:00 am - 12:00 pm	**Lecture-Style Tutorial,** Online clustering: algorithms, evaluation, metrics, applications and benchmarking — 203A
9:00 am - 12:00 pm	**Lecture-Style Tutorial,** Counterfactual Evaluation and Learning for Interactive Systems: Foundations, Implementations, and Recent Advances — 204C
9:00 am - 12:00 pm	**Lecture-Style Tutorial,** Multimodal AutoML for Image, Text and Tabular Data — 204B
9:00 am - 12:00 pm	**Lecture-Style Tutorial,** Robust Time Series Analysis and Applications: An Industrial Perspective — 207B
9:30 am - 10:00 am	**Coffee Break** — Various
12:00 pm - 1:00 pm	**Lunch** — Various
1:00 pm - 4:00 pm	**Half Day Workshops,** Visualization in Data Science VDS @ KDD 2022 — 209A
1:00 pm - 4:00 pm	**Half Day Workshops,** Content understanding and generation for e-commerce — 209B
1:00 pm - 4:00 pm	**Hands-On Tutorial,** Anomaly Detection for Spatiotemporal Data in Action — 101
1:00 pm - 4:00 pm	**Hands-On Tutorial,** Why Data Scientists Prefer Glassbox Machine Learning: Algorithms, Differential Privacy, Editing and Bias Mitigation — 102B
1:00 pm - 4:00 pm	**Hands-On Tutorial,** Graph Neural Networks in Life Sciences: Opportunities and Solutions — 201
1:00 pm - 4:00 pm	**Hands-On Tutorial,** Deep Search Relevance Ranking in Practice — 202B
1:00 pm - 4:00 pm	**Lecture-Style Tutorial,** Accelerated GNN training with DGL and RAPIDS cuGraph in a Fraud Detection Workflow — Salon A
1:00 pm - 4:00 pm	**Lecture-Style Tutorial,** Advances in exploratory data analysis, visualisation and quality for data centric AI systems — Salon B
1:00 pm - 4:00 pm	**Lecture-Style Tutorial,** The Battlefront of Combating Misinformation and Coping with Media Bias — 102A
1:00 pm - 4:00 pm	**Lecture-Style Tutorial,** Deep Learning for Network Traffic Data — 202A
1:00 pm - 4:00 pm	**Lecture-Style Tutorial,** Adapting Pretrained Representations for Text Mining — 203A
1:00 pm - 4:00 pm	**Lecture-Style Tutorial,** Towards Adversarial Learning: from Evasion Attacks to Poisoning Attacks — 204A
1:00 pm - 4:00 pm	**Lecture-Style Tutorial,** Graph Neural Networks: Foundation, Frontiers and Applications — 204B

1:00 pm - 4:00 pm	**Lecture-Style Tutorial,** Data-Centric Epidemic Forecasting — 204C
1:00 pm - 4:00 pm	**Lecture-Style Tutorial,** Modern Theoretical Tools for Designing Information Retrieval System — 207B
1:00 pm - 4:00 pm	**Lecture-Style Tutorial,** Hyperbolic Neural Networks: Theory, Architectures and Applications — 209C
3:00 pm - 3:30 pm	**Coffee Break** — Various
Evening	**Dinner on own**

Monday, August 15

7:00 am - 5:00 pm	**KDD Registration** — L Street Bridge
8:00 am - 12:00 pm	**Deep Learning Day,** https://kdd.org/kdd2022/cfDLDay.html — Salon A
9:00 am - 5:15 pm	**Women in KDD: Towards Gender Equity in Tech,** https://www.microsoft.com/en-us/research/event/women-in-kdd-workshop-2022/ — Salon C
8:30 am - 5:00 pm	**Trustworthy AI Day,** https://trustworthyaiday.github.io/— Salon B
8:00 am - 12:00 pm	**Morning Workshops,** Causal Discovery (CD2022) — 204C
8:00 am - 12:00 pm	**Full Day Workshop (Co-locating),** Mining and Learning with Graphs (MLG) — 207A & 1:00 pm - 5:00 pm **Deep Learning on Graphs: Methods and Applications (DLG-KDD'22)** — 207A
8:00 am - 12:00 pm	**Morning Workshop,** Data-driven Science of Science — 209C
8:00 am - 12:00 pm	**Morning Workshop,** Ethical Artificial Intelligence: Methods and Applications (EAI-KDD'22) — 209B
8:00 am - 12:00 pm	**Morning Workshop,** Data Mining in Bioinformatics (BIOKDD 2022) — 201
8:00 am - 12:00 pm	**Morning Workshop,** Automation in Machine Learning — 102A
8:00 am - 12:00 pm	**Morning Workshop,** End-End Customer Journey Optimization — 102B
8:00 am - 5:00 pm	**Full Day Workshop,** epiDAMIK 5.0: The 5th International Workshop on Epidemiology Meets Data Mining and Knowledge discovery — 101
8:00 am - 5:00 pm	**Full Day Workshop,** Knowledge Graphs: Open Knowledge Network — 202A
8:00 am - 5:00 pm	**Full Day Workshop,** Machine Learning in Finance — 203A
8:00 am - 5:00 pm	**Full Day Workshop,** Fragile Earth: AI for Climate Mitigation, Adaptation, and Environmental Justice — 209A
8:00 am - 5:00 pm	**Full Day Workshop,** Data-driven Humanitarian Mapping — 203B
8:00 am - 5:00 pm	**Full Day Workshop,** AdKDD 2022 — 202B
8:00 am - 5:00 pm	**Full Day Workshop,** Urban Computing — 204A
8:00 am - 5:00 pm	**Full Day Workshop,** Mining and Learning from Time Series — 207B
8:00 am - 5:00 pm	**Full Day Workshop,** Data Science and Artificial Intelligence for Responsible Recommendations — 206
8:00 am - 5:00 pm	**Full Day Workshop,** Joint International Workshop on Misinformation and Misbehavior Mining on the Web & Making a Credible Web for Tomorrow (MIS2-TrueFact) — 208A
8:00 am - 5:00 pm	**Full Day Workshop,** Decision Intelligence and Analytics for Online Marketplaces: Jobs, Ridesharing, Retail and Beyond — 204B
9:30 am - 10:00 am	**Coffee Break** — Various
12:00 pm - 1:30 pm	**KDD Women's Lunch (part of EDI Day)** — Salon C
12:00 pm - 1:00 pm	**Lunch** — Various
1:00 pm - 5:00 pm	**Health Day,** https://kdd.org/kdd2022/HealthDay.html — Salon A
1:00 pm - 5:00 pm	**Afternoon Workshop,** Deep Learning for Spatiotemporal Data, Applications, and Systems (DeepSpatial'22) — 204C
1:00 pm - 5:00 pm	**Afternoon Workshop,** Adversarial Learning Methods for Machine Learning and Data Mining — 201
1:00 pm - 5:00 pm	**Afternoon Workshop,** AI4Cyber/MLHat: AI-enabled Cybersecurity Analytics and Deployable Defense — 209C

1:00 pm - 5:00 pm **Afternoon Workshop, The 5th AIoT Workshop @ KDD'22** — 102A

1:00 pm - 5:00 pm **Afternoon Workshop, Applied Machine Learning Management** — 209B

1:00 pm - 5:00 pm **Afternoon Workshop, Machine Learning for Materials Science (MLMS)** — 102B

3:00 pm - 3:30 pm **Coffee Break**

5:15 pm - 6:45 pm **KDD 2022 Opening Session** — Welcome remarks, SIGKDD Awards, KDD 2022 Stats & Highlights — Ballroom ABC

7:00 pm - 8:30 pm **Applied Data Science Track, and Undergraduate Consortium** — Poster Reception Group 1, Hall D

Tuesday, August 16

7:00 am - 8:00 am **Breakfast**

7:00 am - 5:00 pm **KDD Registration** — L Street Bridge

8:00 am - 9:15 am **Welcome & Announcements, Opening Keynote Address** — The Power of (Statistical) Relational Thinking | Lise Getoor, Distinguished Professor in the Computer Science & Engineering Department at UC Santa Cruz — Ballroom ABC

9:30 am - 6:00 pm **KDD Exhibits** — HALL D

9:30 am - 10:00 am **Coffee Break** — Various

9:30 am - 12:30 pm **Hands On Tutorial, Automated Machine Learning & Tuning with FLAML** — 101

9:30 am - 12:30 pm **Hands On Tutorial, Toolkit for Time Series Anomaly Detection** — 102B

9:30 am - 12:30 pm **Lecture Style Tutorial, Toward Graph Minimally-Supervised Learning** — 201

10:00 am - 5:00 pm **Government Day,** https://kdd.org/kdd2022/GovernDay.html — Salon A/B

10:00 am - 12:00 pm **ADS Invited Talks** — Sameena Shah (JP Morgan) **Task Centric AI,** Vidhya Navalpakkam (Google) **Accelerating Eye Movement Research via ML-based Smartphone Gaze Technology** — Salon C

10:00 am - 12:00 pm **Research Oral Presentations Graphs and Networks** — Session 1, Room 1, 206

10:00 am - 12:00 pm **Research Oral Presentation Interdisciplinary Applications: Biology, Climate and Physics** —Session 1, Room 2, 207B

10:00 am - 12:00 pm **Research Oral Presentation Causal Analysis and Explainability** — Session 1, Room 3, 208A / 208B

10:00 am - 12:00 pm **Research Oral Presentation Data Privacy, Ethics and Data Science for Society** — Session 1, Room 4, 209A / 209B / 209C

10:00 am - 12:00 pm **Research Oral Presentation Adverserial Learning and Information Security** — Session 1, Room 5, 102A

10:00 am - 12:00 pm **ADS Oral Presentation Recommendation Systems** — Session 1, Room 1, 202A

10:00 am - 12:00 pm **ADS Oral Presentation Smart Transportation and Geo** — Session 1, Room 2, 207A

12:00 pm - 1:30 pm **Lunch in Exhibit Hall** — Hall D

1:00 pm - 5:00 pm **Workshop, 3rd IADSS Workshop on Data Science Standards – Hiring, Assessing and Upskilling Data Science Talent** — 202B

1:30 pm - 4:30 pm **Hands On Tutorial, A Practical Introduction to Federated Learning** — 101

1:30 pm - 4:30 pm **Hands On Tutorial, Gradual AutoML using Lale** — 102B

1:30 pm - 4:30 pm **Lecture Style Tutorial, Model Monitoring in Practice: Lessons Learned and Open Challenges** — 201

1:30 pm - 3:30 pm **ADS Invited Talks** — Naila Murray (Meta) **Training Deep Vision Models in Low-data Regimes,** Pei-Yun Sabrina Hsueh (Bayesian Health) **Accountable AI Evaluation Framework for Intelligent Care Augmentation and Adaptive AI in Healthcare** — Salon C

1:30 pm - 3:30 pm **Research Oral Presentation Graphs and Networks** — Session 2, Room 1, 206

1:30 pm - 3:30 pm **Research Oral Presentation, Interdisciplinary Applications: Medicine, Humanities and Social Good** — Session 2, Room 2, 207B

1:30 pm - 3:30 pm **Research Oral Presentation, Anomaly Detection** — Session 2, Room 3, 208A / 208B

1:30 pm - 3:30 pm **Research Oral Presentation, Spatio-Temporal Data** — Session 2, Room 4, 209A / 209B / 209C

1:30 pm - 3:30 pm **ADS Oral Presentation, Recommendation Systems & E-commerce** — Session 2, Room 1, 202A

1:30 pm - 3:30 pm **ADS Oral Presentation, Geo Information and Failure Detection** — Session 2, Room 2, 207A

3:30 pm - 4:00 pm **Coffee Break** — Various

4:00 pm - 6:00 pm **Research Oral Presentation, Classsification and Clustering** — Session 3, Room 1, 206

4:00 pm - 6:00 pm **Research Oral Presentation, Deep Learning Applications** — Session 3, Room 2, 207B

4:00 pm - 6:00 pm **Research Oral Presentation, Deep Learning: New Architectures and Models** — Session 3, Room 3, 208A / 208B

4:00 pm - 6:00 pm **Research Oral Presentation, Ethics, Explainability and Society** — Session 3, Room 4, 209A / 209B / 209C

4:00 pm - 6:00 pm **ADS Oral Presentation, Human & Interfaces** — Session 3, Room 1, 207A

4:00 pm - 5:00 pm **Dissertation Award Talks** — Salon C

6:00 pm - 7:30 pm **Research Track** — Poster Reception: Group 2, Hall D

Wednesday, August 17

7:00 am - 8:00 am **Breakfast**

8:00 am - 5:00 pm **KDD Registration** — L Street Bridge

8:00 am - 9:15 am **Welcome & Announcements, Keynote Address: AI for Social Impact: Results From Deployments for Public Health and Conversation by Milind Tambe,** Gordon McKay Professor of Computer Science, Director of the Center for Research in Computation and Society (CRCS) at Harvard University, and Principal Scientist and Director, of AI for Social Good at Google Research — Ballroom ABC

9:15 am - 9:30 am **Coffee Break** — Various

9:30 am - 12:30 pm **Hands On Tutorial, Frontiers of Graph Neural Networks with DIG** — 102B

9:30 am - 12:30 pm **Lecture Style Tutorial, Algorithmic Fairness on Graphs: Methods and Trends** — 201

9:30 am - 4:30 pm **Undergraduate Consortium, The Undergraduate Consortium at KDD 2022 (KDD-UC) is a new initiative that endeavors to expand and enhance the participation of undergraduate students of diverse backgrounds in research pertaining to knowledge discovery from data** — Salon A

9:30 am - 6:00 pm **KDD Exhibits** — Hall D

9:30 am - 6:00 pm **KDD CUP DAY** — Each KDD cup workshop will include remarks by the organizers of the competitions about the participation statistics, challenges they faced, and key outcomes (including winner announcements). There will be a series of presentations by the winners of the cup and/or hands-on demonstration in each workshop, Salon B

10:00 am - 12:00 pm **ADS Invited Talks** — Ruofei Zhang (Microsoft) **PLM-NLG Model based Online Advertising Automation,** and George Karypis (Amazon) — Salon C

10:00 am - 12:00 pm **Research Oral Presentation, Graph Mining** — Session 4, Room 1, 206

10:00 am - 12:00 pm **Research Oral Presentation, Time Series and Spatiotemporal Data** — Session 4, Room 2, 207B

10:00 am - 12:00 pm **Research Oral Presentation, Deep Learning Applications** — Session 4, Room 3, 208A / 208B

10:00 am - 12:00 pm **Research Oral Presentation, Online Learning and Transfer Learning** — Session 4, Room 4, 209A / 209B / 209C

10:00 am - 12:00 pm **Research Oral Presentation, Few Shot Learning** — Session 4, Room 5, 102A

10:00 am - 12:00 pm **ADS Oral Presentation, Search & Information Retrieval** — Session 4, Room 1, 202A

10:00 am - 12:00 pm **ADS Oral Presentation, Health Care and Biomedical** — Session 4, Room 2, 207A

12:00 pm - 1:30 pm **Lunch in Exhibit Hall**

1:30 pm - 4:30 pm **Hands On Tutorial, Classifying Multimodal Data Using Transformers** — 101

1:30 pm - 4:30 pm **Lecture Style Tutorial, Temporal Graph Learning for Financial World: Algorithms, Scalability, Explainability & Fairness** — 201

1:30 pm - 3:30 pm **ADS Invited Talks,** Keerthi Selvaraj (LinkedIn) **Designing Performant Recommender Systems Using Linear Programming based Global Inference** — Salon C

1:30 pm - 3:30 pm **Research Oral Presentation, Text Mining** — Session 5, Room 1, 206

1:30 pm - 3:30 pm **Research Oral Presentation, Graph Mining** — Session 5, Room 2, 207B

1:30 pm - 3:30 pm **Research Oral Presentation, Mining, Inference and Learning** — Session 5, Room 3, 208A / 208B

1:30 pm - 3:30 pm **Research Oral Presentation, Recommendation Systems** — Session 5, Room 4, 209A / 209B / 209C

1:30 pm - 3:30 pm **Research Oral Presentation, Graph and Networks** — Session 5, Room 5, 102A

1:30 pm - 3:30 pm **ADS Oral Presentation, Question Answering & NLP Applications** — Session 5, Room 1, 202A

1:30 pm - 3:30 pm **ADS Oral Presentation, Biomedical** — Session 5, Room 2, 207A

3:30 pm - 4:00 pm **Coffee Break** — Various

6:00 pm - 9:30 pm **KDD 2022 Celebration Dinner sponsored by Meta**, Ballroom ABC

Thursday, August 18

7:00 am - 8:00 am **Breakfast**

8:00 am - 3:00 pm **KDD Registration** — L Street Bridge

8:00 am - 9:30 am **Welcome & Announcements, Keynote Address: Beyond Traditional Characterizations in the Age of Data: Big Models, Scalable Algorithms, and Meaningful Solutions by Shang-Hua Tang**, University Professor and Seeley G. Mudd Professor of Computer Science and Mathematics at University of Southern California — Ballroom ABC

9:30 am - 1:30 pm **KDD Exhibits** — Hall D

9:30 am - 10:00 am **Coffee Break** — Various

10:00 am - 12:00 pm **ADS Invited Presenters** — Xavier Amatriain (Curai) **From video streaming to telehealth: data driven approaches to building user facing products** — Salon C

10:00 am - 12:00 pm **Research Oral Presentation, Graph Mining** — Session 6, Room 1, 206

10:00 am - 12:00 pm **Research Oral Presentation, Mining, Inference and Learning** — Session 6, Room 2

10:00 am - 12:00 pm **Research Oral Presentation, Recommendation Systems** — Session 6, Room 3, 208A / 208B

10:00 am - 12:00 pm **Research Oral Presentation, Unstructured and Temporal Data** — Session 6, Room 4, 209A / 209B / 209C

10:00 am - 12:00 pm **Research Oral Presentation, Ethics, Explainabiliy and Fairness** — Session 6, Room 5, 202A

10:00 am - 12:00 pm **Research Oral Presentation, Potpourri Applications** — Session 6, Room 6, 102A

10:00 am - 12:00 pm **ADS Oral Presentation, Time-Series and Anomalies** — Session 6, Room 1, 207A

10:00 am - 12:00 pm **ADS Paper Showcase** — Short presentations, Salon A, Salon B, 201 & 202B

12:00 pm - 1:00 pm **Lunch in Exhibit Hall**, Hall D

1:30 pm - 3:30 pm **ADS Invited Presenters** — Geoff Chi-Johnston (Cruise) **Applications of data science for autonomous vehicles**, Salon C

1:30 pm - 3:30 pm **Research Oral Presentation, Mining, Inference, and Learning** — Session 7, Room 1, 206

1:30 pm - 3:30 pm **Research Oral Presentation, Data Cleaning, Transformation and Integration** — Session 7, Room 2, 207B

1:30 pm - 3:30 pm **Research Oral Presentation, Clustering, Imbalanced Data and Tensors** — Session 7, Room 3, 208A / 208B

1:30 pm - 3:30 pm **Research Oral Presentation, User Modeling, Knowledge and Ontologies, Web and Commerce** — Session 7, Room 4, 209A / 209B / 209C

1:30 pm - 3:30 pm **Research Oral Presentation, Time Series and Streaming Data** — Session 7, Room 5, 102A

1:30 pm - 3:30 pm **ADS Oral Presentation, Graph Learning** — Session 7, Room 1, 202A

1:30 pm - 3:30 pm **ADS Paper Showcase** — Short presentations, Salon A, Salon B, 201, & 202B

3:30 pm - 4:00 pm **KDD Closing Ceremony** — Thank you and final wrap up!, Ballroom ABC

Keynote Speakers

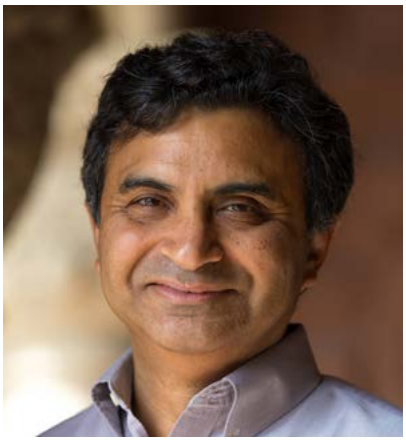
Lise Getoor

Distinguished Professor in the Computer Science & Engineering Department at UC Santa Cruz

The Power of (Statistical) Relational Thinking

Taking into account relational structure during data mining can lead to better results, both in terms of quality and computational efficiency. This structure may be captured in the schema, in links between entities (e.g., graphs) or in rules describing the domain (e.g., knowledge graphs). Further, for richly structured prediction problems, there is often a need for a mix of both logical reasoning and statistical inference. In this talk, I will give an introduction to the field of Statistical Relational Learning (SRL), and I'll identify useful tips and tricks for exploiting structure in both the input and output space. I'll describe our recent work on highly scalable approaches for statistical relational inference. I'll close by introducing a broader interpretation of relational thinking that reveals new research opportunities (and challenges!).

Bio: Lise Getoor is a Professor in the Computer Science & Engineering Department at UC Santa Cruz, where she holds the Jack Baskin Endowed Chair in Computer Engineering. She is founding Director of the UC Santa Cruz Data Science Research Center and is a Fellow of ACM, AAAI, and IEEE. Her research areas include machine learning and reasoning under uncertainty. She has extensive experience with machine learning and probabilistic modeling methods for graph and network data. She received her PhD from Stanford University in 2001, her MS from UC Berkeley, and her BS from UC Santa Barbara, and was a Professor at the University of Maryland, College Park from 2001-2013.



Milind Tambe

Gordon McKay Professor of Computer Science, Director of the Center for Research in Computation and Society (CRCS) at Harvard University, and Principal Scientist and Director, of AI for Social Good at Google Research

AI for Social Impact: Results From Deployments for Public Health and Conversation

With the maturing of AI and multiagent systems research, we have a tremendous opportunity to direct these advances towards addressing complex societal problems. I will focus on domains of public health and conservation, and address one key cross-cutting challenge: how to effectively deploy our limited intervention resources in these problem domains. I will present results from work around the globe in using AI for challenges in public health such as Maternal and Child care interventions, HIV prevention, and in conservation such as endangered wildlife protection. Achieving social impact in these domains often requires methodological advances. To that end, I will highlight key research advances in multiagent reasoning and learning, in particular in, restless multiarmed bandits, influence maximization in social networks, computational game theory and decision-focused learning. In pushing this research agenda, our ultimate goal is to facilitate local communities and non-profits to directly benefit from advances in AI tools and techniques.

Bio: Milind Tambe is Gordon McKay Professor of Computer Science and Director of Center for Research in Computation and Society at Harvard University; concurrently, he is also Director "AI for Social Good" at Google Research. He is recipient of the IJCAI (International Joint Conference on AI) John McCarthy Award, AAMAS ACM (Association for Computing Machinery) Autonomous Agents Research Award, AAAI (Association for Advancement of Artificial Intelligence) Robert S. Engelmore Memorial Lecture Award, and he is a fellow of AAAI and ACM. He is also a recipient of the INFORMS Wagner prize for excellence in Operations Research practice and Rist Prize from MORS (Military Operations Research Society). For his work on AI and public safety, he has received Columbus Fellowship Foundation Homeland security award and commendations and certificates of appreciation from the US Coast Guard, the Federal Air Marshals Service and airport police at the city of Los Angeles.

Shang-Hua Teng

University Professor and Seeley G. Mudd Professor of Computer Science and Mathematics at University of Southern California

Beyond Traditional Characterizations in the Age of Data: Big Models, Scalable Algorithms, and Meaningful Solutions

What are data and network models? What are efficient algorithms? What are meaningful solutions? Big Data, Network Sciences, and Machine Learning have fundamentally challenged the basic characterizations in computing, from the conventional graph-theoretical modeling of networks to the traditional polynomial-time worst-case measures of efficiency:

-- For a long time, graphs have been widely used for defining the structure of social and information networks. However, real-world network data and phenomena are much richer and more complex than what can be captured by nodes and edges. Network data is multifaceted, and thus network sciences require new theories, going beyond classic graph theory and graph-theoretical frameworks, to capture the multifaceted data.

-- More than ever before, it is not just desirable, but essential, that efficient algorithms should be scalable. In other words, their complexity should be nearly linear or even sub-linear with respect to the problem size. Thus, scalability, not just polynomial-time computability, should be elevated as the central complexity notion for characterizing efficient computation.

In this talk, I will discuss some aspects of these challenges. Using basic tasks in network analysis, geometric embedding, game theory, and machine learning as examples, I will highlight the role of big models, scalable algorithms and axiomatization in shaping our understanding of "effective solution concepts," which need to be both mathematically meaningful and algorithmically efficient.

Bio: Shang-Hua Teng is a University Professor and Seely G. Mudd Professor of Computer Science and Mathematics at USC. He is a fellow of SIAM, ACM, and Alfred P. Sloan Foundation, and has twice won the Gödel Prize, first in 2008, for developing smoothed analysis, and then in 2015, for designing the breakthrough scalable Laplacian solver. Citing him as, "one of the most original theoretical computer scientists in the world", the Simons Foundation named him a 2014 Simons Investigator to pursue long-term curiosity-driven fundamental research. He also received the 2009 Fulkerson Prize, 2021 ACM STOC Test of Time Award (for smoothed analysis), 2022 ACM SIGecom Test of Time Award (for settling the complexity of computing a Nash equilibrium), and 2011 ACM STOC Best Paper Award (for improving maximum-flow minimum-cut algorithms). In addition, he and collaborators developed the first optimal well-shaped Delaunay mesh generation algorithms for arbitrary three-dimensional domains, settled the Rousseeuw-Hubert regression-depth conjecture in robust statistics, and resolved two long-standing complexity-theoretical questions regarding the Sprague-Grundy theorem in combinatorial game theory. For his industry work with Xerox, NASA, Intel, IBM, Akamai, and Microsoft, he received fifteen patents in areas including compiler optimization, Internet technology, and social networks. Dedicated to teaching his daughter to speak Chinese as the sole Chinese-speaking parent in an otherwise English-speaking family and environment, he has also become fascinated with children's bilingual learning.

Special Days

Monday, August 15, 2022 – Salon C

SECOND WOMEN IN KDD WORKSHOP AT SIGKDD 2022

Towards Gender Equity in Tech

9:00 – 9:20 am **Welcome to the Workshop**

Judith Spitz, Founder and Executive Director, Break Through Tech.

Dawn Woodard, Distinguished Scientist, LinkedIn.

9:20 – 10:20 am **Keynote 1**

Brandeis Marshall, Founder and CEO DataedX Group

10:20 – 10:40 am **Coffee Break**

10:40 – 11:40 am **Keynote 2**

Rukmini Iyer, Corporate Vice President, Bing Ads, Microsoft

11:40 – 1:10 pm **Women's Networking Power Lunch**

Welcome by **Booking.com**.

Keynote Speaker: **Kristen Titus**, former Chief Technology & Innovation Officer of New York, founding executive director of the Cognizant Foundation, NYC Tech Talent Pipeline, and Girls Who Code.

1:10 – 2:10 pm **Panel: Career Journey Storytelling**

The career and life panel brings together a diverse group of women scientists and leaders to learn more about their career journey.

Moderator: **Sameena Shah**, Managing Director, AI Research, JP Morgan Chase & Co

Panelists include:

Linda Avery, Chief AI and Data Analytics Officer, Verizon

Laura Garbrysiak, Senior Manager Data Science, Visa and Founder of R-Ladies Miami

Naila Murray, Research Engineering Manager, AI at Facebook

Jennifer Neville, Senior Principal Research Manager, Microsoft Research Redmond

2:10 – 2:30 pm **Coffee Break**

2:30 – 3:30 pm **Panel: Understanding and Navigating Different Career Roles**

Moderator: **Kimberly Churches,** President of The Washington Center, former CEO of the American Association of University Women

Panelists include:

Sally Goldman, Research Scientist at Google

Brandeis Marshall, Founder and CEO DataedX Group

Meghna Sinha, Vice President, AI/DS, Verizon

3:30 – 5:00 pm **WiML Mentorship Session**

Mentoring Sessions.

Monday, August 15, 2022 – Salon A

DEEP LEARNING DAY

8:00 – 8:05 am **Opening Remarks**

8:05 – 8:40 am **Jennifer Neville (Microsoft Research / Purdue University)**

8:40 – 9:15 am **George Karypis (AWS AI / University of Minnesota), Graph Neural Network Research at AWS AI**

9:15 – 9:30 am **Junior researcher spotlights by**

Mengdi Huai (Iowa State University), **Building Trust in Machine Learning via Automatic and Robust Explanations**

Han Xu (Michigan State University), **Towards Fairness in Adversarial Robust DNNs**

Lu Lin (Penn State University), **Trustworthy Machine Learning On Graph-Structured Data**

9:30 – 10:00 am **Coffee Break**

10:00 – 10:45 am **Panel**

Panelists: **George Karypis, Yujia Li, Marinka Zitnik**

Moderator: **Jennifer Neville**

10:45 – 11:20 am **- Marinka Zitnik** (Harvard University), **Infusing Structure and Knowledge into Biomedical AI**

11:20 – 11:55 am **- Yujia Li** (DeepMind), **Competitive Programming with AlphaCode**

11:55 – 12:00 pm **- Closing Remarks (for the plenary session)**

12:00 – 1:00 pm **Lunch**

1:00 – 5:00 pm **Deep Learning Day Workshops**

The 3rd KDD Workshop on Deep Learning for Spatiotemporal Data, Applications, and Systems (DeepSpatial'22)

The 4th Workshop on Adversarial Learning Methods for Machine Learning and Data Mining

Workshops

The 3rd KDD Workshop on Deep Learning for Spatiotemporal Data, Applications, and Systems (DeepSpatial'22)

Organizers: Zhe Jiang, Zhao Liang, Xun Zhou, Robert Stewart, Junbo Zhang, Shashi Shekhar, Jieping Ye

Description: The significant advancements in software and hardware technologies stimulated the prosperities of the domains in spatial computing and deep learning algorithms, respectively. Recent breakthroughs in the deep learning field have exhibited outstanding performance in handling data in space and time in specific domains such as image, audio, and video. Meanwhile, the development of sensing and data collection techniques in relevant domains have enabled and accumulated large scale of spatiotemporal data over the years, which in turn has led to unprecedented opportunities and prerequisites for the discovery of macro- and micro- spatiotemporal phenomena accurately and precisely. The complementary strengths and challenges between spatiotemporal data computing and deep learning in recent years suggest urgent needs to bring together the experts in these two domains in prestigious venues, which is still missing until now.

This workshop will provide a premium platform for both research and industry to exchange ideas on opportunities, challenges, and cutting-edge techniques of deep learning in spatiotemporal data, applications, and systems

The 4th Workshop on Adversarial Learning Methods for Machine Learning and Data Mining

Organizers: Pin-Yu Chen, Cho-Jui Hsieh, Bo Li, Sijia Liu

Description: In recent years, adversarial learning methods are shown to be a key technique that leads to exciting breakthroughs and new challenges of many machine learning and data mining tasks. Examples include improved training of generative models (e.g., generative adversarial nets), adversarial robustness of machine learning systems in different domains (e.g., adversarial attacks, defenses, and property verification), and robust representation learning (e.g., adversarial loss for learning embedding), to name a few. Generally speaking, the idea of "learning with an adversary" is crucial for expanding the learning capability, ensuring trustworthy decision making, and enhancing generalizability of machine learning and data mining methods.

This workshop also aims to bridge theory and practice by encouraging theoretical studies motivated by adversarial ML/DM problems, such as robust (minimax) optimization and game theory.

Monday, August 15, 2022 – Salon A

HEALTH DAY

1:00 – 1:05 pm **Opening Remarks**

1:05 – 2:00 pm **Keynote from Milind Tambe**

2:00 – 3:00 pm **Keynote from Temiloluwa O. Prioleau**

2:35 – 3:10 pm **Accepted paper lightning talks**

3:00 – 3:15 pm **Break**

3:15 – 4:00 pm **Oral presentations for contributed papers**

4:00 – 5:00 pm **Panel discussions on data mining and healthcare**

Accepted Papers

Yuan Yuan, Jingtao Ding, Huandong Wang, Depeng Jin and Yong Li. **Activity Trajectory Generation via Modeling Spatiotemporal Dynamics**

Weijie He and Ting Chen. **Scalable Online Disease Diagnosis via Multi-Model-Fused Actor-Critic Reinforcement Learning**

Jiangzhuo Chen, Stefan Hoops, Achla Marathe, Henning Mortveit, Bryan Lewis, Srinivasan Venkatramanan, Arash Haddadan, Parantapa Bhattacharya, Abhijin Adiga, Anil Vullikanti, Aravind Srinivasan, Mandy Wilson, Gal Ehrlich, Maier Fenster, Stephen Eubank, Christopher Barrett and Madhav Marathe. **Effective Social Network-Based Allocation of COVID-19 Vaccines**

Yu Zhao, Yunxin Li, Yuxiang Wu, Baotian Hu, Qingcai Chen, Xiaolong Wang, Yuxin Ding and Min Zhang. **Medical Dialogue Response Generation with Pivotal Information Recalling**

Ziyang Song, Yuanyi Hu, Aman Verma, David Buckeridge and Yue Li. **Automatic Phenotyping by a Seed-guided Topic Model**

Mengying Sun, Jing Xing, Han Meng, Huijun Wang, Bin Chen and Jiayu Zhou. **MolSearch: Search-based Multi-objective Molecular Generation and Property Optimization**

Babaniyi Olaniyi, Ana Fernández del Río, África Periáñez and Lauren Bellhouse. **User Engagement and Churn in Mobile Health Applications**

Carl Yang*, Hongwen Song, Mingyue Tang, Leon Danon and Ymir Vigfusson. **Dynamic Network Anomaly Modeling of Cell-Phone Call Detail Records for Infectious Disease Surveillance**

Qianyue Hao, Wenzhen Huang, Fengli Xu, Kun Tang and Yong Li. **Reinforcement Learning Enhances the Experts: Large-scale COVID-19 Vaccine Allocation with Multi-factor Contact Network**

Yi Yang, Yanqiao Zhu*, Hejie Cui, Xuan Kan, Lifang He, Ying Guo and Carl Yang. **Data Efficient Learning for Cross-Dataset Brain Network Analysis**

Best Papers

Ziyang Song, Yuanyi Hu, Aman Verma, David Buckeridge and Yue Li. **Automatic Phenotyping by a Seed-guided Topic Model**

Mengying Sun, Jing Xing, Han Meng, Huijun Wang, Bin Chen and Jiayu Zhou. MolSearch: **Search-based Multi-objective Molecular Generation and Property Optimization**

Carl Yang, Hongwen Song*, Mingyue Tang, Leon Danon and Ymir Vigfusson. **Dynamic Network Anomaly Modeling of Cell-Phone Call Detail Records for Infectious Disease Surveillance**

Monday, August 15, 2022 – Salon B

TRUSTWORTHY AI DAY

8:30 am – 8:40 am **Opening Remarks**

8:40 am – 9:40 am **Keynote #1**

Elham Tabassi (NIST - Chief of Staff, Information Technology Laboratory), **AI Risk Management**

Session Chair: Wei Wang (UCLA)

9:30 am – 10:00 am **Coffee Break**

10:00 am – 11:05 am **Invited Talks**

Brian Stanton (NIST - Project Lead for AI User Trust), **Trust and Perception of an AI System**

David James Marcos (Microsoft - Director, Governance & Enablement: Office of Responsible AI), **Responsible AI: Building out Practical Governance**

Dinesh Verma (IBM Research - CTO for Edge computing), Title: **Trusting the outcomes of AI models: Experiences from Applications of AI in IoT Solutions**

Santosh Kumar (U. Memphis - Director, NIH NIBIB mHealth Center for Discovery, Optimization, and Translation of Temporally-Precise Interventions, **Challenges and Opportunities in Trustworthy AI for Health and Wellness**

Session Chair: Yizhou Sun (UCLA)

11:05 pm – 12:00 pm **Panel Discussion**

Panelists: **Elham Tabassi, Brian Stanton, David James Marcos, Dinesh Verma, Santosh Kumar**

Panel Moderator: Mani Srivastava (UCLA)

12:00 pm – 1:00 pm **Lunch**

1:00 pm – 2:00 pm **Keynote #2**

James Zou (Stanford University)), **Debugging and editing AI models using natural language**

Session Chair: Wei Wang (UCLA)

2:00 pm – 3:00 pm **Invited Talks**

Q. Vera Liao (Microsoft Research Montréal), **From trustworthy AI to appropriate trust: lessons from human-centered explainable AI**

Jiaqi Ma (Harvard University), **The Unique Challenges in Trustworthy Graph Machine Learning**

John P. Dickerson (University of Maryland), **On the Responsible Use of Machine Learning in Market Design**

Session Chair: Alexandra Chouldechova (CMU)

3:00 pm – 3:30 pm **Coffee Break**

3:30 pm – 4:10 pm **Invited Talks**

Susan Aaronson (George Washington University), **Our Data Driven Future Needs a Rethink: Data Governance Ain't Working**

Karen Levy (Cornell University), **AI and Data Governance**

Anne Washington (New York University), **AI and Data Governance**

Session Chair: Alexandra Chouldechova (CMU)

4:10 pm – 5:00 pm **Panel Discussion**

Panelists: **Jian Pei, Q. Vera Liao, James Zou, John P. Dickerson,**

Susan Aaronson, Karen Levy, Anne Washington

Panel Moderator: Alexandra Chouldechova (CMU)

5:00 pm **Closing Remarks**

Tuesday, August 16 – Salon A/B

GOVERNMENT DAY

10:00 am – 12:00 pm: **NSF (National Science Foundation) Programs (session chair: Vipin Kumar, University of Minnesota)**

Sylvia Spengler and Wei Ding (Program Directors, Information Integration and Informatics, NSF): Information Integration and Informatics programs

Wendy Nilsen (Deputy Division Director, Division of Information and Intelligent Systems, NSF): Smart and Connected Health and Information and Intelligent Systems Programs

Doug Maughan (Head of the National Science Foundation (NSF) Convergence Accelerator): Convergence Accelerator programs

12:00 pm – 12:30 pm: **Lunch**

12:30 pm – 2:00 pm: **NSF Leadership (session chair: Chaitanya Baru, University of California, San Diego)**

Margaret Martonosi (Assistant Director, Directorate of Computer and Information Science & Engineering, NSF): NSF Directorate on Computer and Information Science & Engineering

Erwin Gianchandani (Assistant Director, Directorate of Technology, Innovation, and Partnerships, NSF): New NSF Directorate on TIP (Technology, Innovation, and Partnerships)

2:00pm – 3:30pm: **NIH (National Institute of Health) Programs (session chairs: : Xia Ning, Ohio State University and Aidong Zhang, University of Virginia)**

Susan Gregurick (Associate Director for Data Science, NIH): NIH on AI and Data Science

Yanli Wang (Program Director, Extramural Programs (EP), National Library of Medicine, NIH): National Library of Medicine programs

Marilyn M. Miller (Program Director, Genetics of Alzheimer's Disease, Division of Neuroscience, NIH): National Institute of Aging programs

3:30 – 5:00pm: **USDA, DARPA, IARPA Programs (session chairs: Vansant Honavar, PSU) and Aidong Zhang, University of Virginia)**

Steven Thomson (National Program Leader of Agricultural and Biosystems Engineering, Institute of Food Production and Sustainability USDA-National Institute of Food and Agriculture (NIFA)): USDA-National Institute of Food and Agriculture (NIFA) programs

Mark Flood (Program Manager, DARPA – Information Innovation Office (I2O)): DARPA/I2O (Information Innovation Office) programs

Robert Rahmer (Director - Office of Analysis Research Intelligence Advanced Research Projects Activity (IARPA)): Intelligence Advanced Research Projects Activity (IARPA) AI Initiatives

ADS Invited Speakers

Xavier Amatriain
Curai

From Video Streaming to Telehealth: Data Driven Approaches to Building User Facing Products

Bio: Xavier Amatriain (Ph.D.) is co-founder and CTO of Curai, a series B health tech startup. Previous to this, he led Engineering at Quora and was Research/Engineering Director at Netflix, where he started and led the Algorithms team building the famous Netflix recommendations. Prior to this, he was a researcher both in academia and industry. With over 100 research publications (and 5k citations), Xavier is best known for his work on AI and machine learning in general, and recommender systems in particular. For the past five years at Curai, Xavier has led teams at the intersection of product development and medical AI research and engineering. Curai has built an end-to-end virtual primary care service that provides high-quality medical care for under $10 a month, thanks to its care delivery platform and state–of-the-art medical AI. On the research side, Curai focuses on medical language understanding and generation, and multimodal medical reasoning.

Naila Murray
Meta

Training Deep Vision Models in Low-data Regimes

Bio: Naila Murray obtained a BSE in electrical engineering from Princeton University in 2007. In 2012, she received her Ph.D. from the Universitat Autonoma de Barcelona, in affiliation with the Computer Vision Center. She joined Xerox Research Centre Europe in 2013 as a research scientist in the computer vision team, working on topics including fine-grained visual categorization, image retrieval and visual attention. From 2015 to 2019 she led the computer vision team at Xerox Research Centre Europe, and continued to serve in this role after its acquisition and transition to becoming NAVER LABS Europe. In 2019, she became the director of science at NAVER LABS Europe. In 2020, she joined Facebook AI Research where she is a senior research engineering manager for EMEA. She has served as area chair for ICLR 2018, ICCV 2019, ICLR 2019, CVPR 2020, ECCV 2020, and program chair for ICLR 2021. Her current research interests include few-shot learning and domain adaptation.

Geoffrey Chi-Johnston
Cruise

Applications of Data Science for Autonomous Vehicles

Bio: Geoffrey Chi-Johnston is a Senior Staff Tech Lead Manager at Cruise. He supports the Safety Data Science team, which builds algorithms for quantifying and benchmarking autonomous vehicle performance. Prior to Cruise, Geoff worked at Apple on the Apple Watch, where he helped develop the Fall Detection algorithm as well as supporting other health and activity features. He is a co-inventor on multiple patent grants and applications. He received a National Science Foundation Graduate Research Fellowship, a PhD from Columbia University in Sustainable Development and was a Postdoctoral Fellow at Johns Hopkins University. His academic work focused on mathematical modeling of infectious diseases and evaluation of intervention strategies, including co-authored papers in Science, PNAS, and PLoS Computational Biology.

Keerthi Selvaraj
LinkedIn

Designing Performant Recommender Systems Using Linear Programming based Global Inference

Bio: Keerthi is a Principal Staff Researcher in the AI Group of Linkedin where he works on Distributed training of machine learning and AI systems, Huge scale Linear programming, and Information extraction projects. Prior to LI he was a Distinguished researcher in Criteo Research working on fundamental and applied research problems in computational advertising. Previous to that, he was in Microsoft first with the CISL team in Big Data and later with the FAST division of Microsoft Office. Before which, he was with the Machine Learning Group of Yahoo! Research, in Santa Clara, CA. Prior to joining Yahoo! Research, he worked for 11 years at the Indian Institute of Science, Bangalore, and for 5 years at the National University of Singapore. During those sixteen years his research focused on the development of practical algorithms for a variety of areas, such as machine learning, robotics, computer graphics and optimal control. Overall, he have published more than 100 papers in leading journals and conferences. Keerthi is an Action Editor of JMLR (Journal of Machine Learning Research) since 2008. Previously, he was an Associate Editor for the IEEE Transactions on Automation Science and Engineering.

Sameena Shah
JP Morgan Chase

Task Centric AI

Bio: Sameena Shah is a Managing Director and AI Executive at JP Morgan, where she and the team work across the firm to create AI technologies for business transformation and growth. She is a highly accomplished leader with over 20 years of experience in AI, engineering, and data. Her leadership has resulted in award-winning AI technologies that have transformed products and businesses. Previously, Sameena was Managing Director at S&P Global where she led the firm's strategy and development for Augmented Intelligence. Prior to that, Sameena worked at Thomson Reuters, a Schonfeld securities hedge fund, Yahoo! Research, and ran her AI consultancy firm. Sameena has a PhD in AI, a MS in Computer Science from IIT Delhi, and a BS in Electronics Engineering. She is passionate about AI and change, and is a frequent invited speaker at top forums including Ted talks, and keynotes at premier AI conferences (IJCAI 2021). She is a recipient of several scientific and industry awards including Microsoft top PhD thesis in the country award, Cloudera top AI/ML application award, Google Women in Engineering award, United States CTO office nominee, and a JPMC prolific inventor with 30+ patents and 60+ peer reviewed publications.

Ruofei Zhang
Microsoft

PLM-NLG Model Based Online Advertising Automation

Bio: Ruofei Zhang is a VP & Distinguished Engineer in Microsoft Bing Ads, he oversees R&D and engineering of query/ads understanding and matching algorithms, relevance ranking, NLP and Computer Vision machine learning models, large-scale distributed serving systems that power Ads retrieval in Microsoft Advertising Marketplace. He also drives defining business growth strategies, technical directions, product roadmaps, and operating cadence of Microsoft Shopping and Vertical Ads. Prior to joining Microsoft, Ruofei was a R&D Director and Principal Scientist at Yahoo Labs, managing its Data Mining and Relevance Optimization Group in Advertising Science Department. Ruofei has co-authored two monograph books of Multimedia Data Mining and Deep Learning technologies respectively, published more than 60 papers on premier journals and top conferences in the areas of machine learning, data mining, NLP, and computer vision, and has been granted 23 US patents. He has been regularly serving as program committee members, reviewers, speakers, panelists for numerous leading academic conferences and journals as well as federal agencies including NSF. Ruofei received 2022 Distinguished Alumni Award from Thomas Watson Engineering & Applied Science College of State University of New York Binghamton, and is also on the Industry Advisory Board for its Computer Science Department.

Vidhya Navalpakkam
Google

Accelerating Eye Movement Research ia ML-based Smartphone Gaze Technology

Bio: Vidhya Navalpakkam is a Principal research scientist and leads an interdisciplinary team in Google research, focused on modeling human attention and behavior at scale. Her work is at the intersection of Computer Science, Neuroscience and Psychology. Prior to joining Google 10 years ago, she worked briefly at Yahoo research. She enjoyed modeling attention mechanisms in the brain during her postdoc at Caltech, and PhD at USC. She has a Bachelors in Computer Science from IIT, Kharagpur.

George Karypis
Amazon

Bio: George Karypis is a Distinguished McKnight University Professor at the University of Minnestoa, Twin Cities and an Amazon Scholar & Sr. Principal Scientist at Amazon Web Services (AWS). His research interests spans the areas of data mining, high performance computing, information retrieval, collaborative filtering, bioinformatics, cheminformatics, and scientific computing. His research has resulted in the development of software libraries for serial and parallel graph partitioning (METIS and ParMETIS), hypergraph partitioning (hMETIS), for parallel Cholesky factorization (PSPASES), for collaborative filtering-based recommendation algorithms (SUGGEST), clustering high dimensional datasets (CLUTO), finding frequent patterns in diverse datasets (PAFI), and for protein secondary structure prediction (YASSPP). He has coauthored over 250 papers on these topics and two books ("Introduction to Protein Structure Prediction: Methods and Algorithms" (Wiley, 2010) and "Introduction to Parallel Computing" (Publ. Addison Wesley, 2003, 2nd edition)). In addition, he is serving on the program committees of many conferences and workshops on these topics, and on the editorial boards of the IEEE Transactions on Knowledge and Data Engineering, ACM Transactions on Knowledge Discovery from Data, Data Mining and Knowledge Discovery, Social Network Analysis and Data Mining Journal, International Journal of Data Mining and Bioinformatics, the journal on Current Proteomics, Advances in Bioinformatics, and Biomedicine and Biotechnology. At Amazon, his team works on areas such as large-scale distributed training of deep learning models, model compression, natural language processing (NLP), graph neural networks (GNNs), multi-modal represenattion learning and multi-task learning.

Pei-Yun Sabrina Hsueh
Bayesian Health

Accountable AI Evaluation Framework for Intelligent Care Augmentation and Adaptive AI in Healthcare

Bio: Pei-Yun Sabrina Hsueh (Ph.D., FAMIA) is the global health AI leader and a pioneer in personal health informatics at Bayesian Health Inc. She is currently serving on the Practitioners Board of the ACM and as the Vice-Chair of the AMIA 2022 SPC and the incoming Co-Chair of the AMIA AI Evaluation Showcase 2023. Previously at IBM Research, she co-chaired the Health Informatics Professional Community and was elected as an IBM Academy of Technology Member. In her roles, she is actively leading the industrial best practice in health AI, with a focus on establishing a responsible and ethical AI governance framework and operationalizing AI in workflows. Her dedication has won her recognitions such as the AMIA Distinguished Paper Award, Fellow of the AMIA, Google European Anita Borg Scholar, High-Value Inventions, Eminence and Excellence, and Manager Choice awards. She is on the Editorial Board of Sensors Journal, Frontiers in Public Health, and JAMIA OPEN Special Issue on Precision Medicine. Her commitment has led to 20+ patents, 50+ technical articles, two new textbooks: Machine Learning for Medicine and Healthcare (in prep.) and Personal Health Informatics - Patient nt Participation in Precision Health (in print by Springer Nature).

Research Track Papers Schedule

SESSION 1: Tuesday, August 16, 10:00 AM-12:00 PM

Room 206 (Graphs and Networks) Session Chair: Tim Weninger

Streaming Graph Neural Networks with Generative Replay — Junshan Wang (Alibaba); Wenhao Zhu (Peking University); Guojie Song (Peking University); Liang Wang (Alibaba group)

Graph Rationalization with Environment-based Augmentations — Gang Liu (University of Notre Dame); Tong Zhao (Snap Inc.); JIAXIN XU (UNIVERSITY OF NOTRE DAME); Tengfei Luo (University of Notre Dame); Meng Jiang (University of Notre Dame)

Causal Attention for Graph Classification — Yongduo Sui (University of Science and Technology of China); Xiang Wang (National University of Singapore); Jiancan Wu (University of Science and Technology of China); Min Lin (University of Montreal); Xiangnan He (University of Science and Technology of China); Tat-Seng Chua (National University of Singapore)

Minimizing Congestion for Balanced Dominators — Yosuke Mizutani (University of Utah); Annie Staker (University of Utah); Blair D Sullivan (University of Utah)

SMORE: Knowledge Graph Completion and Multi-hop Reasoning in Massive Knowledge Graphs — Hongyu Ren (Stanford University); Hanjun Dai (Google Brain); Bo Dai (Google Brain); Xinyun Chen (UC Berkeley); Denny Zhou (Google Brain); Jure Leskovec (Stanford University); Dale Schuurmans (Google / University of Alberta)

FlowGEN: A Generative Model for Flow Graphs — Ambuj K Singh (UCSB); Arlei Silva (Rice University); Furkan Kocayusufoglu (UC, Santa Barbara)

Room 207B (Interdisciplinary Applications: Biology, Climate and Physics) Session Chair: Zhe Jiang

Graph-in-Graph Network for Automatic Gene Ontology Description Generation — Fenglin Liu (Peking University); Bang Yang (Peking University); Xian Wu (Tencent Medical AI Lab); Shen Ge (Tencent Medical AI Lab); Adelaide Chambers (University of Washington); Sheng Wang (Paul G. Allen School of Computer Science, , University of Washington)

Deep Representations for Time-varying Brain Datasets — Sikun Lin (University of California, Santa Barbara); Shuyun Tang (University of California, Santa Barbara); Ambuj K Singh (UCSB); Scott T Grafton (UC Santa Barbara)

Geometric Graph Representation Learning on Protein Structures — Sarp Aykent (Auburn University); Tian Xia (Auburn University)

RetroGraph: Retrosynthetic Planning with Graph Search — Shufang Xie (Gaoling School of Artificial Intelligence, Renmin University of China); Peng Han (KAUST); Yingce Xia (Microsoft Research Asia); Lijun Wu (Microsoft Research); Tao Qin (Microsoft Research Asia); Chenjuan Guo (Aalborg University); Bin Yang (Aalborg University); Rui Yan (Peking University)

KRATOS: Context-aware cell type classification and interpretation using joint dimensionality reduction and clustering — Zihan Zhou (Purdue University); Zijia Du (Shanghai Jiao Tong University); Somali Chaterji (Purdue University)

Dense feature tracking of atmospheric winds with deep optical flow — Thomas J Vandal (NASA Ames); Kate Duffy (NASA Ames); Akira Sewnath (NASA Goddard Space Flight Center); Will McCarty (NASA); Ramakrishna Nemani (NASA Ames Research Center)

Room 208AB (Causal Analysis and Explainability) Session Chair: Yanfang (Fanny) Ye

Causal Discovery on Non-Euclidean Data — Jing Yang (Heifei University of Technology); Kai Xie (Heifei University of Technology); Ning An (Hefei University of Technology)

Improving Data-driven Heterogeneous Treatment Effect Estimation Under Structure Uncertainty — Christopher Tran (University of Illinois at Chicago); Elena Zheleva (University of Illinois at Chicago)

ML4S: Learning Causal Skeleton from Vicinal Graphs — Pingchuan Ma (HKUST); Rui Ding (Microsoft Research); Haoyue Dai (Carnegie Mellon University); Yuanyuan Jiang (Renmin University of China); Shuai Wang (HKUST); Shi Han (Microsoft Research); Dongmei Zhang (Microsoft Research Asia)

Discovering Invariant and Changing Mechanisms from Data — Sarah Mameche (CISPA Helmholtz-Zentrum fŸr Informationssicherheit); David Kaltenpoth (CISPA Helmholtz Center for Information Security); Jilles Vreeken (CISPA Helmholtz Center for Information Security)

Variational Flow Graphical Model — Shaogang Ren (Baidu Research, USA); Belhal Karimi (Baidu Research); Dingcheng Li (Baidu Research); Ping Li (Baidu Research)

Framing Algorithmic Recourse for Anomaly Detection — Debanjan Datta (Virginia Tech); Feng Chen (UT Dallas); Naren Ramakrishnan (Virginia Tech)

Room 209ABC (Data Privacy, Ethics and Data Science for Society) Session Chair: Tong Yu

What Makes Your Data Unavailable To Deep Learning? — Da Yu (Sun Yat-sen University); Huishuai Zhang (Microsoft Research Asia); Wei Chen (Chinese Academy of Sciences); Jian Yin (Sun Yat-Sen University); Tie-Yan Liu (Microsoft Research)

MetaV: A Meta-Verifier Approach to Task-Agnostic Model Fingerprinting — Xudong Pan (Fudan University); Yifan Yan (Fudan University); Mi Zhang (Fudan University); Min Yang (Fudan University)

Scalable Differentially Private Clustering via Hierarchically Separated Trees — Vincent Cohen-Addad (Google); Alessandro Epasto (Google)*; Silvio Lattanzi (Google); Vahab Mirrokni (Google); andres munoz (Google); David Saulpic (LIP6); Chris Schwiegelshohn (Aarhus University); Sergei Vassilvitskii (Google)

A Nearly-Linear Time Algorithm for Minimizing Risk of Conflict in Social Networks — Liwang Zhu (Fudan University); Zhongzhi Zhang (Fudan University)

Room 102A (Adverserial Learning and Information Security) Session Chair: Jinghui Chen

A Model-Agnostic Approach to Differentially Private Topic Mining — Han Wang (Illinois Institute of Technology); Jayashree Sharma (Illinois Institute of Technology); Shuya Feng (Illinois Institute of Technology); Kai Shu (Illinois Institute of Technology); Yuan Hong (Illinois Institute of Technology)

Model Integrity Authentication in Gradient Boosting Machine — Weijie Zhao (Rochester Institute of Technology); Yingjie Lao (Clemson University); Ping Li (Baidu)

Pairwise Adversarial Training for Unsupervised Class-imbalanced Domain Adaptation — WEILI SHI (University of Georgia); Ronghang Zhu (University of Georgia); Sheng Li (University of Georgia)

LeapAttack: Hard-Label Adversarial Attack on Text via Gradient-Based Optimization — Muchao Ye (The Pennsylvania State University); Jinghui Chen (Penn State University); Chenglin Miao (University of Georgia); Ting Wang (Penn State); Fenglong Ma (Pennsylvania State University)

Bilateral Dependency Optimization: Defending Against Model-inversion Attacks — Xiong Peng (NUDT)*; Feng Liu (UTS/RIKEN); Jingfeng Zhang (RIKEN); long lan (NUDT); Junjie Ye (PolyU Hong Kong); Tongliang Liu (The University of Sydney); Bo Han (HKBU / RIKEN)

SESSION 2: Tuesday, August 16, 1:30 PM-3:30 PM

Room 206 (Graphs and Networks) Session Chair: Leman Akoglu

Task-Adaptive Few-shot Node Classification — Song Wang (University of Virginia); Kaize Ding (Arizona State University); Chuxu Zhang (Brandeis University); Chen Chen (University of Virginia); Jundong Li (University of Virginia)

Geometer: Graph Few-Shot Class-Incremental Learning via Prototype Representation — Bin Lu (Shanghai Jiao Tong University); Xiaoying Gan (Shanghai Jiao Tong University); Lina Yang (Shanghai Jiao Tong University); Weinan Zhang (Shanghai Jiao Tong University); Luoyi Fu (Shanghai Jiao Tong University); Xinbing Wang (Shanghai Jiao Tong University)

Avoiding Biases due to Similarity Assumptions in Node Embeddings — Deepayan Chakrabarti (University of Texas at Austin)

Repository Embedding via Heterogeneous Graph Adversarial Contrastive Learning — Yiyue Qian (University of Notre Dame); Yiming Zhang (Case Western Reserve University); Qianlong Wen (University of Notre Dame); Yanfang Ye (University of Notre Dame); Chuxu Zhang (Brandeis University)

Towards a Native Quantum Paradigm for Graph Representation Learning: a Sampling-based Recurrent Embedding Approach — Ge Yan (Shanghai Jiaotong University); Yehui Tang (Shanghai Jiao Tong University); Junchi Yan (Shanghai Jiao Tong University)

Room 207B (Interdisciplinary Applications: Medicine, Humanities and Social Good) Session Chair: Tyler Derr

Fair and interpretable models for survival analysis — Md Mahmudur Rahman (University of Maryland Baltimore County); Sanjay Purushotham (University of Maryland, Baltimore County)

SIPF: Sampling Method for Inverse Protein Folding — Tianfan Fu (Georgia Institute of Technology); Jimeng Sun (UIUC)

Antibody Complementarity Determining Regions (CDRs) design using Constrained Energy Model — Tianfan Fu (Georgia Institute of Technology); Jimeng Sun (UIUC)

Deconfounding Actor-Critic Network with Policy Adaptation for Dynamic Treatment Regimes — Changchang Yin (The Ohio State University); Ruoqi Liu (The Ohio State University); Jeffrey Caterino (The Ohio State University); Ping Zhang (The Ohio State University)

Incremental Cognitive Diagnosis for Intelligent Education — Shiwei Tong (University of Science and Technology of China (USTC)); Jiayu Liu (University of Science and Technology of China); Yuting Hong (ustc); Zhenya Huang (University of Science and Technology of China); Le Wu (Hefei University of Technology); Qi Liu ("University of Science and Technology of China, China"); Wei Huang (University of Science and Technology of China); Enhong Chen (University of Science and Technology of China); Dan Zhang (iFLYTEK CO.LTD.)

Room 208AB (Anomaly Detection) Session Chair: Sanjay Chawla

Detecting Cash-out Users via Dense Subgraphs — Yingsheng Ji (Tsinghua University); zheng zhang (China Etek Service & Technology); xinlei tang (Fudan university); Jiachen Shen (China Etek Service & Technology Co.,Ltd.); Xi Zhang (Beijing University of Posts and Telecommunications); Guangwen Yang (Tsinghua University)

Scaling Time Series Anomaly Detection to Trillions of Datapoints and Ultra-fast Arriving Data Streams — Yue Lu (University of California, Riverside)*; Renjie Wu (University of California, Riverside); Abdullah Mueen (University of New Mexico, USA); Maria A. Zuluaga (EURECOM); Eamonn Keogh (UC Riverside)

Adaptive Model Pooling for Online Deep Anomaly Detection from a Complex Evolving Data Stream — Susik Yoon (UIUC); Youngjun Lee (KAIST); Jae-Gil Lee (KAIST); Byung Suk Lee (University of Vermont)

Subset Node Anomaly Tracking over Large Dynamic Graphs — Xingzhi Guo (Stony Brook University); Baojian Zhou (Fudan University); Steven Skiena (Stony Brook University)

PAC-Wrap: Semi-Supervised PAC Anomaly Detection — Shuo Li (University of Pennsylvania); Xiayan Ji (University of Pennsylvania); Edgar Dobriban (University of Pennsylvania); Oleg Sokolsky (University of Penssylvania); Insup Lee (University of Pennsylvania)

Toward Learning Robust and Invariant Representations with Alignment Regularization and Data Augmentation — Haohan Wang (Carnegie Mellon University); Zeyi Huang (Carnegie Mellon University); Xindi Wu (Carnegie Mellon University); Eric Xing (MBZUAI, CMU, and Petuum Inc.)

Room 209ABC (Spatio-Temporal Data) Session Chair: Xiaorui Liu

Modeling Network-level Traffic Flow Transitions on Sparse Data — Xiaoliang Lei (Xi'an Jiaotong University); Hao Mei (New Jersey Institue of Technology); Bin Shi (Xi'an jiaotong University); Hua Wei (NJIT)

Selective Cross-city Transfer Learning for Traffic Prediction via Source City Region Re-weighting — Yilun Jin (The Hong Kong University of Science and Technology); Kai Chen (HKUST); Qiang Yang (Hong Kong UST)

Semisupervised Drifted Stream Learning with Short Lookback — Weijieying Ren (Universivity of Central Florida); Pengyang Wang (University of Macau); Xiaolin Li (Nanjing University); Charles E Hughes (University of Central Florida); Yanjie Fu (University of Central Florida)

Human mobility prediction with causal and spatial-constrained multi-task network — Zongyuan Huang (Shanghai Jiao Tong University); Shengyuan Xu (Shanghai Jiao Tong University); Menghan Wang (ebay); Hansi Wu (eBay Inc.); Yaohui Jin (Shanghai Jiao Tong University); Yanyan Xu (Shanghai Jiao Tong Unniversity)

TrajGAT: A Graph-based Long-term Dependency Modeling Approach for Trajectory Similarity Computation — Di Yao (Institute of Computing Technology, Chinese Academy of Sciences); Haonan Hu (Institute of Computing Technology, Chinese Academy of Sciences); Lun Du (Microsoft Research); Gao Cong (Nanyang Technological Univesity); Shi Han (Microsoft Research); Jingping Bi (Institute of Computing Technology, Chinese Academy of Sciences)

Spatio-Temporal Trajectory Similarity Learning in Road Networks — Ziquan Fang (Zhejiang University); Yuntao Du (Zhejiang University); xinjun zhu (zhejiang university); Danlei Hu (Zhejiang University); Lu Chen (Zhejiang University); Yunjun Gao (Zhejiang University); Christian S Jensen (Aalborg University)

SESSION 3: Tuesday, August 16, 4:00 PM-6:00 PM

Room 206 (Classsification and Clustering) Session Chair: Matteo Riondato

Contrastive Learning with Complex Heterogeneity — Lecheng Zheng (University of Illinois at Urbana-Champaign); Jinjun Xiong (University at Buffalo); Yada Zhu (IBM); Jingrui He (University of Illinois at Urbana-Champaign)

Delayed Feedback Modeling with a Time Window Assumption — Shota Yasui (Cyberagent); Masahiro Kato (Cyberagent / The University of Tokyo)

Partial Label Learning with Semantic Label Representations — Shuo He (University of Electronic Science and Technology of China); Lei Feng (Chongqing University); Fengmao Lv (Southwest Jiaotong University); Wen Li (University of Electronic Science and Technology of China); Guowu Yang (Big Data Research Center and School of Computer Science and Engineering,University of Electronic Science and Technology of China)

A Generalized Backward-Compatibility Metric — Tomoya Sakai (IBM)

On missing labels, long-tails and propensities in extreme multi-label classification — Erik Schultheis (Aalto University); Marek Wydmuch (Poznan University of Technology); Rohit Babbar (Aalto University); Krzysztof Dembczynski (Poznan University of Technology)

HyperAid: Denoising in hyperbolic spaces for tree-fitting and hierarchical clustering — Eli Chien (UIUC); Puoya Tabaghi (University of Illinois at Urbana-Champaign); Olgica Milenkovic (University of Illinois UC)

Room 207B (Deep Learning Applications) Session Chair: Lu Lin

ERNet: Unsupervised Collective Extraction and Registration in Neuroimaging Data — Yao Su (Worcester Polytechnic Institute); Zhentian Qian (Worcester Polytechnic Institute); Lifang He (Lehigh University); Xiangnan Kong (Worcester Polytechnic Institute)

Learned Token Reduction for Efficient Transformer Inference — Sehoon Kim (University of California, Berkeley); Sheng Shen (UC Berkeley); David Thorsley (Samsung Semiconductor, Inc); Amir Gholami (UC Berkeley); Woosuk Kwon (UC Berkeley); Joseph Hassoun (Samsung Semiconductor, Inc.); Kurt Keutzer (EECS, UC Berkeley)

Comprehensive Fair Meta-learned Recommender System — Tianxin Wei (University of Illinois Urbana Champaign); Jingrui He (University of Illinois at Urbana-Champaign)

Group-wise Reinforcement Feature Generation for Optimal and Explainable Representation Space Reconstruction — Dongjie Wang (University of Central Florida); Yanjie Fu (University of Central Florida); Kunpeng Liu (University of Central Florida); Xiaolin Li (Nanjing University); Yan Solihin (University of Central Florida)

Probing Schema Linking Information from Pre-trained Language Models for Text-to-SQL Parsing — Lihan Wang (Chinese Academy of Sciences); Bowen Qin (Chinese Academy of Sciences); Binyuan Hui (Alibaba Group); Bowen Li (University of Edinburgh); Min Yang (Chinese Academy of Sciences); Bailin Wang (Unviersity of Edinburgh); Binhua Li (Alibaba Group)

Room 208AB (Deep Learning: New Architectures and Models) Session Chair: Dongkuan Xu

Demystify Hyperparameters for Stochastic Optimization with Transferable Representations — Jianhui Sun (University of Virginia); Mengdi Huai (University of Virginia); Kishlay Jha (University of Virginia); Aidong Zhang (University of Virginia)

Global Self-Attention as a Replacement for Graph Convolution — Md Shamim Hussain (Rensselaer Polytechnic Institute); Mohammed Zaki (RPI); Dharmashankar Subramanian (IBM Research)

ROLAND: Graph Learning Framework for Dynamic Graphs — Jiaxuan You (Stanford University); Tianyu Du (Stanford University); Jure Leskovec (Stanford University)

Multi-fidelity Hierarchical Neural Processes — Dongxia Wu (University of California, San Diego); Matteo Chinazzi (Northeastern University); Alessandro Vespignani (Northeastern University); Yian Ma (UCSD); Rose Yu (University of California, San Diego)

Graph Neural Networks with Node-wise Architecture — Zhen Wang (Alibaba Group); Yaliang Li (Alibaba Group); Zhewei Wei (Renmin University of China); Weirui Kuang (Alibaba Group); Bolin Ding ("Data Analytics and Intelligence Lab, Alibaba Group")

Improving Social Network Embedding via New Second-Order Continuous Graph Neural Networks — Yanfu Zhang (University of Pittsburgh); Shangqian Gao (University of Pittsburgh); Jian Pei (Simon Fraser University); Heng Huang (University of Pittsburgh)

Tuesday, August 16, 4:00 PM-6:00 PM

Room 209ABC (Ethics, Explainability and Society) Session Chair: Reza Zafarani

Explaining Recurrent Neural Networks by Learning Automata with Adaptive States — Dat Hong (The University of Iowa); Alberto Segre (The University of Iowa); Tong Wang (University of Iowa)

Optimal Interpretable Clustering Using Oblique Decision Trees — Magzhan Gabidolla (University of California, Merced); Miguel A Carreira-Perpinan (UC Merced)

Fair Representation Learning: An Alternative to Mutual Information — Ji Liu (Nanjing University); Zenan Li (Nanjing University); Yuan Yao (Nanjing University); Feng Xu (Nanjing University); Xiaoxing Ma (Nanjing University); Miao Xu (University of Queensland); Hanghang Tong (University of Illinois at Urbana-Champaign)

Fair Labelled Clustering — Seyed A Esmaeili (University of Maryland, College Park); Sharmila Duppala (University of Maryland, College Park); Brian Brubach (Wellesley College); John P Dickerson (University of Maryland)

Learning Fair Representation via Distributional Contrastive Disentanglement — Learning Fair Representation via Distributional Contrastive Disentanglement

Adaptive Fairness-Aware Online Meta-Learning for Changing Environments — Chen Zhao (Kitware Inc.); Feng Mi (University of Texas at Dallas); Xintao Wu (University of Arkansas); Kai Jiang (University of Texas at Dallas); Latifur Khan (The university of Texas at Dallas); Feng Chen (UT Dallas)

SESSION 4: Wednesday, August 17, 10:00 AM-12:00 PM

Room 206 (Graph Mining) Session Chair: Feng Chen

Few-shot Heterogeneous Graph Learning via Cross-domain Knowledge Transfer — Qiannan Zhang (King Abdullah University of Science and Technology); Xiaodong Wu (King Abdullah University of Science and Technology); Qiang Yang (King Abdullah University of Science and Technology); Chuxu Zhang (Brandeis University); Xiangliang Zhang (University of Notre Dame)

Multiplex Heterogeneous Graph Convolutional Network — Pengyang Yu (Ocean University of China), Chaofan Fu (Ocean University of China), Yanwei Yu (Ocean University of China), Chao Huang (The University of Hong Kong), Zhongying Zhao (Shandong University of Science and Technology), Junyu Dong (Ocean University of ChinaXDAI: A Tuning-free Framework for Exploiting Pre-trained Language Models in Knowledge Grounded Dialogue Generation

Disentangled Heterogeneous Dynamic Graph Learning for Opioid Overdose Prediction — Qianlong Wen (University of Notre Dame); Zhongyu Ouyang (University of Notre Dame); Jianfei Zhang (University of Alberta); Yiyue Qian (University of Notre Dame); Yanfang Ye (University of Notre Dame); Chuxu Zhang (Brandeis University)

JuryGCN: Quantifying Jackknife Uncertainty on Graph Convolutional Networks — Jian Kang (University of Illinois at Urbana-Champaign); Qinghai Zhou (University of Illinois at Urbana-Champaign); Hanghang Tong (University of Illinois at Urbana-Champaign)

SL-VAE: Variational Autoencoder for Source Localization in Graph Information Diffusion — Chen Ling (Emory University); Junji Jiang (Tianjin University); Junxiang Wang (Emory University); Zhao Liang (Emory University)

Towards an Optimal Asymmetric Graph Structure for Robust Semi-supervised Node Classification — Zixing Song (The Chinese University of Hong Kong); Yifei Zhang (The Chinese University of Hong Kong); Irwin King (The Chinese University of Hong Kong)

Room 207B (Time Series and Spatiotemporal Data) Session Chair: Abdullah Mueen

Graph-Flashback Network for Next Location Recommendation — Xuan Rao (University of Electronic Science and Technology of China); Lisi Chen (KAUST); Yong Liu (Nanyang Technological University); Shuo Shang (KAUST); Bin Yao (Shanghai Jiao Tong University); Peng Han (KAUST)

MSDR: Multi-Step Dependency Relation Networks for Spatial Temporal Forecasting — Dachuan Liu (University of Electronic Science and Technology of China); Jin Wang (UCLA); Shuo Shang (KAUST); Peng Han (KAUST)

Quantifying and Reducing Registration Uncertainty of Spatial Vector Labels on Earth Imagery — Wenchong He (University of Florida); Marcus Kriby (University of Alabama); Zhe Jiang (University of Florida); Yiqun Xie (The University of Maryland); Xiaowei Jia (University of Pittsburgh); Da Yan (University of Alabama at Birmingham); Yang Zhou (Auburn University)

Multi-Agent Graph Convolutional Reinforcement Learning for Dynamic Electric Vehicle Charging Pricing — Weijia Zhang (School of Computer Science, University of Science and Technology of China); Hao Liu (HKUST); Jindong Han (The Hong Kong University of Science and Technology); Yong Ge (The University of Arizona); Hui Xiong (Hong Kong University of Science and Tech)

Mining Spatio-Temporal Relations via Self-Paced Graph Contrastive Learning — Rongfan Li (School of Information and Software Engineering, University of Electronic Science and Technology of China); Xinke Jiang (University of Electronic Science and Technology of China); Fan Zhou (School of Information and Software Engineering, University of Electronic Science and Technology of China); Goce Trajcevski (Iowa State University); Jin Wu (School of Information and Software Engneering, University of Electronic Science and Technology of China); Ting Zhong (School of Information and Software Engineering, University of Electronic Science and Technology of China)

Beyond Point Prediction: Capturing Zero-Inflated & Heavy-Tailed Spatiotemporal Data with Deep Extreme Mixture Models — Tyler Wilson (Michigan State University); Andrew R McDonald (Michigan State University); Asadullah Hill Galib (Michigan State University); Pang-Ning Tan (Michigan State University); Lifeng Luo (Michigan State University)

Room 208AB (Deep Learning Applications) Session Chair: Hua Wei

Robust and Informative Text Augmentation (RITA) via Constrained Worst-Case Transformations for Low-Resource Named Entity Recognition — Hyunwoo Sohn (North Carolina State University); Baekkwan Park (The University of Missouri)

Deep Learning For Prognosis Using Task-fMRI: A Novel Architecture and Training Scheme — Ge Shi (UC Davis); Jason Smucny (University of California Davis); Ian Davidson (UC Davis)

Modeling Individual Decision-Making Style in Chess — Reid H McIlroy-Young (University of Toronto); Russell Wang (University of California, Berkeley); Siddhartha Sen (Microsoft Research); Jon Kleinberg (Cornell); Ashton Anderson (University of Toronto)

Robust Event Forecasting with Spatiotemporal Confounder Learning — Songgaojun Deng (STEVENS INSTITUTE OF TECHNOLOGY); Huzefa Rangwala (George Mason University); Yue Ning (Stevens Institute of Technology)

Physics-infused Machine Learning for Crowd Simulation — Guozhen Zhang (Tsinghua University); Zihan Yu (Tsinghua University); Depeng Jin (Tsinghua University); Yong Li (Tsinghua University)

Learning Binarized Graph Representations with Multi-faceted Quantization Reinforcement for Top-K Recommendation — Yankai Chen (The Chinese University of Hong Kong); Huifeng Guo (Huawei Noah's Ark Lab); Yingxue Zhang (Huawei Technologies Canada); Chen Ma (City University of Hong Kong); Ruiming Tang (Huawei Noah's Ark Lab); Jingjie Li (Huawei Noah's Ark Lab); Irwin King (The Chinese University of Hong Kong)

Room 209ABC (Online Learning and Transfer Learning) Session Chair: Qi Li

S2RL: Do We Really Need to Perceive All States in Deep Multi-Agent Reinforcement Learning? — Shuang Luo (Zhejiang University); Yinchuan Li (Huawei NoahÕs Ark Lab); Jiahui Li (Zhejiang University); Kun Kuang (Zhejiang University); Furui Liu (Huawei Noah's Ark Lab); Yunfeng Shao (Huawei Noah's Ark Lab); Chao Wu (Zhejiang University)

Neural Bandit with Arm Group Graph — Yunzhe Qi (University of Illinois at Urbana-Champaign); Yikun Ban (University of Illinois at Urbana-Champaign); Jingrui He (University of Illinois at Urbana-Champaign)

Domain Adaptation with Dynamic Open-Set Targets — Jun Wu (University of Illinois at UrbanaÐChampaign); Jingrui He (University of Illinois at Urbana-Champaign)

External Knowledge Infusion for Tabular Pre-training Models with Dual-adapters — Can Qin (Northeastern University); Sungchul Kim (Adobe); Handong Zhao (Adobe Research); Tong Yu (Adobe Research); Ryan A. Rossi (Adobe Research); YUN FU (Northeastern University)

Spatio-Temporal Graph Few-Shot Learning with Cross-City Knowledge Transfer — Bin Lu (Shanghai Jiao Tong University); Xiaoying Gan (Shanghai Jiao Tong University); Weinan Zhang (Shanghai Jiao Tong University); Huaxiu Yao (Stanford University); Luoyi Fu (Shanghai Jiao Tong University); Xinbing Wang (Shanghai Jiao Tong University)

Room 102A (Few Shot Learning) Session Chair: Huaxiu Yao

Collaboration Equilibrium in Federated Learning — Sen Cui (Department of Automation, Tsinghua University); Jian Liang (Alibaba Group); Weishen Pan (Tsinghua University); Kun Chen (University of Connecticut); Changshui Zhang (Tsinghua University); Fei Wang (Cornell University)

Connected Low-Loss Subspace Learning for a Personalization in Federated Learning — Seok-Ju Hahn (Ulsan National Institute of Science and Technology); Minwoo Jeong (Kakao Enterprise); Junghye Lee (Ulsan National Institute of Science and Technology)

FedMSplit: Correlation-Adaptive Federated Multi-Task Learning across Multimodal Split Networks — Jiayi Chen (University of Virginia); Aidong Zhang (University of Virginia)

p-Meta: Towards On-device Deep Model Adaptation — Zhongnan Qu (ETH Zurich); Zimu Zhou (Singapore Management University); Yongxin Tong (Beihang University); Lothar Thiele (ETH ZŸrich)

Dual Bidirectional Graph Convolutional Networks for Zero-shot Node Classification — Qin Yue (Shanxi University); Jiye Liang (Shanxi University); Junbiao Cui (Shanxi University); Liang Bai (Shanxi University, China)

Finding Meta Winning Ticket to Train Your MAML — Dawei Gao (Alibaba-inc); Yuexiang Xie (Alibaba Group); Zimu Zhou (Singapore Management University); Zhen Wang (Alibaba Group); Yaliang Li (Alibaba Group); Bolin Ding ("Data Analytics and Intelligence Lab, Alibaba Group")

SESSION 5: Wednesday, August 17, 1:30 PM-3:30 PM

Room 206 (Text Mining) Session Chair: Goce Trajcevski

SagDRE: Sequence-Aware Graph-Based Document-Level Relation Extraction with Adaptive Margin Loss — Ying Wei (Iowa State University); Qi Li (Iowa State University)

Variational Graph Author Topic Modeling — Delvin Ce Zhang (Singapore Management University); Hady Lauw (Singapore Management University)

Label-enhanced Prototypical Network with Contrastive Learning for Multi-label Few-shot Aspect Category Detection — Han Liu (Dalian University of Technology); Feng Zhang (Peking University); Xiaotong Zhang (Dalian University of Technology); Siyang Zhao (Dalian University of Technology); Junjie Sun (Dalian University of Technology); Hong Yu (Dalian University of Technology); Xianchao Zhang (Dalian University of Technology)

Open-Domain Aspect-Opinion Co-Mining with Double-Layer Span Extraction — Adithya Mr. Kulkarni (Iowa State University); Mohna Chakraborty (Iowa State University); Qi Li (Iowa State University)

Unsupervised Key Event Detection from Massive Text Corpus — Yunyi Zhang (University of Illinois at Urbana-Champaign); Fang Guo (Westlake University); Jiaming Shen (Google Research); Jiawei Han (UIUC)

Few-Shot Fine-Grained Entity Typing with Automatic Label Interpretation and Instance Generation — Jiaxin Huang (University of Illinois Urbana-Champaign); Yu Meng (University of Illinois Urbana-Champaign); Jiawei Han (UIUC)

Room 207B (Graph Mining) Session Chair: Chuxu Zhang

Joint Knowledge Graph Completion and Question Answering — Lihui Liu (University of Illinois at Urbana-Champaign); Boxin Du (University of Illinois at Urbana-Champaign); Jiejun Xu (HRL); Yinglong Xia (Facebook); Hanghang Tong (University of Illinois at Urbana-Champaign)

Learning Causal Effects on Hypergraphs — Jing Ma (University of Virginia); Mengting Wan (Microsoft); Longqi Yang (Microsoft); Jundong Li (University of Virginia); Brent Hecht (Microsoft); Jaime Teevan (Microsoft)

Meta-Learned Metrics over Multi-Evolution Temporal Graphs — Dongqi Fu (University of Illinois at Urbana-Champaign); Liri Fang (University of Illinois Urbana-Champaign); Ross Maciejewski (Arizona State University); Vetle I Torvik (University of Illinois at Urbana-Champaign); Jingrui He (University of Illinois at Urbana-Champaign)

On Structural Explanation of Bias in Graph Neural Networks — Yushun Dong (University of Virginia); Song Wang (University of Virginia); Yu Wang (Vanderbilt university); Tyler Derr (Vanderbilt University); Jundong Li (University of Virginia)

Accurate Node Feature Estimation with Structured Variational Graph Autoencoder — Jaemin Yoo (Carnegie Mellon University); Hyunsik Jeon (Seoul National University); Jinhong Jung (Jeonbuk National University); U Kang (Seoul National University)

GUIDE: Group Equality Informed Individual Fairness in Graph Neural Networks — Weihao Song (University of Virginia); Yushun Dong (University of Virginia); Ninghao Liu (University of Georgia); Jundong Li (University of Virginia)

Room 208AB (Mining, Inference and Learning) Session Chair: Somali Chaterji

Detecting Arbitrary Order Beneficial Feature Interactions for Recommender Systems — Yixin Su (The University of Melbourne); Yunxiang Zhao (The University of Melbourne); Sarah Erfani (University of Melbourne); Junhao Gan (University of Melbourne); Rui Zhang (ruizhang.info)

pureGAM: Learning an Inherently Pure Additive Model — Xingzhi Sun (Yale University); Ziyu Wang (Peking University); Rui Ding (Microsoft Research); Shi Han (Microsoft Research); Dongmei Zhang (Microsoft Research Asia)

Balancing Bias and Variance for Active Weakly Supervised Learning — Hitesh Sapkota (Rochester Institute of Technology); Qi Yu (Rochester Institute of Technology)

Training Graph Neural Networks in Extreme Low-Data Regime — Danning Lao (Shanghai Jiao Tong University); Xinyu Yang (Shanghai Jiao Tong University); Qitian Wu (Shanghai Jiao Tong University); Junchi Yan (Shanghai Jiao Tong University)

Practical Counterfactual Policy Learning for Top-K Recommendations — Yaxu Liu (National Taiwan University); Jui-Nan Yen (National Taiwan University); Bowen Yuan (National Taiwan University); Rundong Shi (Meituan); Peng Yan (Meituan); Chih-Jen Lin (National Taiwan University)

Room 209ABC (Recommendation Systems) Session Chair: Tong Zhao

Addressing Unmeasured Confounder for Recommendation with Sensitivity Analysis — Sihao Ding (University of Science and Technology of China); Peng Wu (Peking University); Fuli Feng (University of Science and Technology of China); Yitong Wang (University of Science and Technology of China); Xiangnan He (University of Science and Technology of China); Yong Liao (University of Sciences and Technology of China); Yongdong Zhang (University of Science and Technology of China)

Towards Representation Alignment and Uniformity in Collaborative Filtering — Chenyang Wang (Tsinghua University); Yuanqing Yu (Tsinghua University); Weizhi Ma (Tsinghua University); Min Zhang (Tsinghua University); Chong Chen (Tsinghua University); Yiqun LIU (Tsinghua University); Shaoping Ma (Tsinghua University)

CoRGi: Content-Rich Graph Neural Networks with Attention — Jooyeon Kim (RIKEN); Angus Lamb (Microsoft); Simon Woodhead (Eedi); Simon Pyton Jones (Microsoft); Cheng Zhang (Microsoft); Miltiadis Allamanis (MSR Cambridge)

Knowledge-enhanced Black-box Attacks for Recommendations — Jingfan Chen (Nanjing University); Wenqi FAN (The Hong Kong Polytechnic University); Guanghui Zhu (Nanjing University); Xiangyu Zhao (City University of Hong Kong); Chunfeng Yuan (Nanjing University); Qing Li (The Hong Kong Polytechnic University); Yihua Huang (Nanjing University)

Towards Universal Sequence Representation Learning for Recommender Systems — Yupeng Hou (Renmin University of China); Shanlei Mu (Renmin University of China); Wayne Xin Zhao (Renmin University of China); Yaliang Li (Alibaba Group); Bolin Ding ("Data Analytics and Intelligence Lab, Alibaba Group"); Ji-Rong Wen (Renmin University of China)

Room 102A (Graph and Networks) Session Chair: Fenglong Ma

Ultrahyperbolic Knowledge Graph Embeddings — Bo Xiong (University of Stuttgart); Shichao Zhu (Institute of Information Engineering, Chinese Academy of Sciences); Mojtaba Nayyeri (University of Stuttgart); Chengjin Xu (University of Bonn); Shirui Pan (Monash University); Chuan Zhou (Chinese Academy of Sciences); Steffen Staab ("IPVS, Universität Stuttgart, DE and WAIS, University of Southampton, UK")

Core-periphery Partitioning and Quantum Annealing — Catherine F Higham (University of Glasgow); Desmond J Higham (University of Edinburgh); Francesco Tudisco (Gran Sasso Science Institute)*

A Spectral Representation of Networks: The Path of Subgraphs — Shengmin Jin (Syracuse University); Hao Tian (Syracuse University); Jiayu Li (Syracuse University); Reza Zafarani (Syracuse University)

Enhancing Machine Learning Approaches for Graph Optimization Problems with Diversifying Graph Augmentation — Chen-Hsu Yang (National Tsing Hua University); Chih-Ya Shen (National Tsing Hua University)

CLARE: A Semi-supervised Community Detection Algorithm — Xixi Wu (Fudan University); Yao Zhang (Fudan Univeristy); Yun Xiong (Fudan University); Yizhu Jiao (Fudan University); Caihua Shan (microsoft); Yangyong Zhu (Fudan University); Philip S Yu (UIC)

Efficient Join Order Selection Learning with Graph-based Representation — Jin Chen (University of Electronic Science and Technology of China(UESTC)); Guanyu Ye (University of Electronic Science and Technology of China); Yan Zhao (Aalborg University); Shuncheng Liu (University of Electronic Science and Technology of China); Liwei Deng (University of Electronic Science and Technology of China); Xu Chen (University of Electronic Science and Technology of China); rui zhou (Huawei Technologies Co., Ltd.); Kai Zheng (University of Electronic Science and Technology of China)*

SESSION 6: Thursday, August 18, 10:00 AM-12:00 PM

Room 206 (Graph Mining) Session Chair: Yao Ma

COSTA: Covariance-Preserving Feature Augmentation for Graph Contrastive Learning — Yifei Zhang (The Chinese University of Hong Kong); Hao Zhu (Australian National University); Zixing Song (The Chinese University of Hong Kong); Piotr Koniusz (ANU College of Engineering and Computer Science); Irwin King (The Chinese University of Hong Kong)

RLogic: Recurrent Logical Rule Learning from Knowledge Graphs — Kewei Cheng (UCLA); Jiahao Liu (Tongji University); Wei Wang (UCLA); Yizhou Sun (UCLA)

Nimble GNN Embedding with Tensor-Train — Chunxing Yin (Georgia Institute of Technology); Da Zheng (Amazon); Israt Nisa (Amazon); Christos Faloutsos (Amazon); George Karypis (Amazon); Richard Vuduc (Georgia Institute of Technology)

Condensing Graphs via One-Step Gradient Matching — Wei Jin (Michigan State University); Xianfeng Tang (Amazon); Haoming Jiang (Georgia Tech); Zheng Li (Amazon); Danqing Zhang (Amazon); Jiliang Tang (Michigan State University); Bing Yin (Amazon)

Graph Structural Attack by Perturbing Spectral Distance — Lu Lin (University of Virginia); Ethan Blaser (University of Virginia); Hongning Wang (University of Virginia)

Feature Overcorrelation in Deep Graph Neural Networks: A New Perspective — Wei Jin (Michigan State University); Xiaorui Liu (Michigan State University); Yao Ma (Michigan State University); Charu Aggarwal (IBM); Jiliang Tang (Michigan State University)

Room 207B (Mining, Inference and Learning) Session Chair: Liang Zhao

Sample-Efficient Kernel Mean Estimator with Marginalized Corrupted Data — Xiaobo Xia (The University of Sydney); Shuo Shan (Southeast University); Mingming Gong (University of Melbourne); Nannan Wang (Xidian University); Fei Gao (Hangzhou Dianzi University); Haikun Wei (Southeast University); Tongliang Liu (The University of Sydney)

Non-stationary A/B Tests — Yuhang Wu (Department of Industrial Engineering and Operations Research, University of California, Berkeley); Guangyu Zhang (Amazon); Zeyu Zheng (Department of Industrial Engineering and Operations Research, University of California, Berkeley); Zuohua Zhang (Amazon.com); Chu Wang (Amazon)

Nonlinearity Encoding for Extrapolation of Neural Networks — Gyoung S. Na (KRICT); Chanyoung Park (KAIST)

Batch Stochastic Bin Packing in Cloud: A Chance-constrained Optimization Approach — Jie Yan (Microsoft Research); Yunlei Lu (MSRA); Liting Chen (Microsoft); Si Qin (Microsoft Research); Yixin Fang (Microsoft); Qingwei Lin (Microsoft Research); Thomas Moscibroda (Microsoft, USA); Saravan Rajmohan (Microsoft 365); Dongmei Zhang (Microsoft Research Asia)

LinE: Logical Query Reasoning over Hierarchical Knowledge Graphs — Zijian Huang (University of Auckland); Meng-Fen Chiang (University of Auckland); Wang-Chien Lee (Pennsylvania State University, USA)

Learning Task-relevant Representations for Generalization via Characteristic Functions of Reward Sequence Distributions — Rui Yang (University of Science and Technology of China); Jie Wang (University of Science and Technology of China); Zijie Geng (University of Science and Technology of China); Mingxuan Ye (University of Science and Technology of China); Shuiwang Ji (Texas A&M University); Bin Li (University of Science and Technology of China); Feng Wu (University of Science and Technology of China)

Room 208AB (Recommendation Systems) Session Chair: Chu Wang

Towards Unified Conversational Recommender Systems via Knowledge-Enhanced Prompt Learning — Xiaolei Wang (Renmin University of China); Kun Zhou (Renmin University of China); Ji-Rong Wen (Renmin University of China); Wayne Xin Zhao (Renmin University of China)

Debiasing Learning for Membership Inference Attacks Against Recommender Systems — Zihan Wang (Shandong University); Na Huang (Shandong University); Fei Sun (Alibaba Group); Pengjie Ren (Shandong University); Zhumin Chen (Shandong University); Hengliang Luo (Meituan); Maarten de Rijke (University of Amsterdam); Zhaochun Ren (Shandong University)

BLISS: A Billion scale Index using Iterative Re-partitioning — Gaurav Gupta (Rice University); Tharun Medini (ThirdAI Corp.); Anshumali Shrivastava (Rice University); Alex J Smola (Amazon)

Debiasing the Cloze Task in Sequential Recommendation with Bidirectional Transformers — Khalil Damak (University of Louisville); Sami Khenissi (University of Louisville); Olfa Nasraoui (university of Louisville)

User-Event Graph Embedding Learning for Context-Aware Recommendation — Dugang Liu (Shenzhen University); Mingkai He (Shenzhen University); Jinwei Luo (Shenzhen University); Jiangxu Lin (Southeast University); Meng Wang (Southeast University); Xiaolian Zhang (Huawei 2012 lab); Weike Pan (Shenzhen University); Zhong Ming (Shenzhen University)

Aligning Dual Disentangled User Representations from Ratings and Textual Content — Nhu-Thuat Tran (Singapore Management University); Hady Lauw (Singapore Management University)

Room 209ABC (Unstructured and Temporal Data) Session Chair: Rajesh Gupta

Knowledge Enhanced Search Result Diversification — Zhan Su (Renmin University of China); Zhicheng Dou (Renmin University of China); Yutao Zhu (UniversitŽ de MontrŽal); Ji-Rong Wen (Renmin University of China)

Mask and Reason: Pre-Training Knowledge Graph Transformers for Complex Logical Queries — Xiao Liu (Tsinghua University); Shiyu Zhao (Tsinghua University); Kai Su (Tsinghua University); Yukuo Cen (Tsinghua University); Jiezhong Qiu (Tencent); Mengdi Zhang (Meituan-Dianping Group); Wei Wu (Meituan-Dianping Group); Yuxiao Dong (Tsinghua University); Jie Tang (Tsinghua University)

Learning the Evolutionary and Multi-scale Graph Structure for Multivariate Time Series Forecasting — Junchen Ye (Beihang University); Zihan Liu (Beihang University); Bowen Du (Beihang Univeristy); Leilei Sun (Beihang Univerisity); Weimiao Li (BeiHang University); Yanjie Fu (University of Central Florida); Hui Xiong (Hong Kong University of Science and Tech)

Task-Aware Reconstruction for Time-Series Transformer — Ranak Roy Chowdhury (University of California, San Diego); Xiyuan Zhang (University of California, San Diego); Jingbo Shang (UC San Diego); Rajesh Gupta (UC San Diego); Dezhi Hong (UC San Diego)

Multi-Variate Time Series Forecasting on Variable Subsets — Jatin Chauhan (Google AI); Aravindan Raghuveer (Google Research); Rishi Saket (Google Research); Jay Nandy (Google Research); Balaraman Ravindran (Indian Institute of Technology, Madras)

ProActive: Self-Attentive Temporal Point Process Flows for Activity Sequences — Vinayak Gupta (IIT Delhi); Srikanta Bedathur (IIT Delhi)

Room 202A (Ethics, Explainabiliy and Fairness) Session Chair: Mengdi Huai

Fair Ranking as Fair Division: Impact-Based Individual Fairness in Ranking — Yuta Saito (Cornell University); Thorsten Joachims (Cornell)

Make Fairness More Fair: Fair Item Utility Estimation and Exposure Re-Distribution — Jiayin Wang (Tsinghua University); Weizhi Ma (Tsinghua University); Jiayu Li (Tsinghua University); Hongyu Lu (Tsinghua University); Min Zhang (Tsinghua University); Biao Li (Kuaishou Inc.); Yiqun LIU (Tsinghua University); Peng Jiang (Kuaishou Inc.); Shaoping Ma (Tsinghua University)

Improving Fairness in Graph Neural Networks via Mitigating Sensitive Attribute Leakage — Yu Wang (Vanderbilt university); Yuying Zhao (Vanderbilt university); Yushun Dong (University of Virginia); Huiyuan Chen (Case Western Reserve University); Jundong Li (University of Virginia); Tyler Derr (Vanderbilt University)

RES: A Robust Framework for Visual Explanation Supervision — Yuyang Gao (Emory University); Tong Sun (George Mason University); Guangji Bai (Emory University); Siyi Gu (Emory University); Sungsoo Hong (George Mason University); Zhao Liang (Emory University)

ExMeshCNN: An Explainable Convolutional Neural Network Architecture for 3D Shape Analysis — SeongGyeom Kim (Hanyang University); Dong-Kyu Chae (Hanyang University)

Room 102A (Potpourri Applications) Session Chair: Yiqun Xie

Robust Inverse Framework using Self-Supervised Learning: An application to Hydrology — Rahul Ghosh (University of Minnesota); Arvind Renganathan (University of Minnesota); Kshitij Tayal (University of Minnesota); Xiang Li (University of Minnesota Twin Cities); Ankush Khandelwal (University of Minnesota); Xiaowei Jia (University of Pittsburgh); Christopher Duffy (Penn State); John L Nieber (University of Minnesota); Vipin Kumar (University of Minnesota)

Domain Adaptation in Physical Systems via Graph Kernel — Haoran Li (Arizona State University); Hanghang Tong (University of Illinois at Urbana-Champaign); Yang Weng (Arizona State University)

State Dependent Parallel Neural Hawkes Process for Limit Order Book Event Stream Prediction and Simulation — Zijian Shi (University of Bristol); John Cartlidge (University of Bristol)

Sparse Conditional Hidden Markov Model for Weakly Supervised Named Entity Recognition — Yinghao Li (Georgia Institute of Technology); Le Song (Biomap & MBZUAI); Chao Zhang (Georgia Institute of Technology)

Intrinsic-Motivated Sensor Management: Exploring with Physical Surprise — Jingyi Yuan (Arizona State University); Yang Weng (Arizona State University); Erik Blasch (AFRL)

SESSION 7: Thursday, August 18, 1:30 PM-3:30 PM

Room 206 (Mining, Inference, and Learning) Session Chair: Krzysztof Dembczynski

Efficient Approximate Algorithms for Empirical Variance with Hashed Block Sampling — Xingguang Chen (The Chinese University of Hong Kong); Fangyuan ZHANG (The Chinese Univesity of Hong Kong); Sibo Wang (The Chinese University of Hong Kong)

Discovering Significant Patterns under Sequential False Discovery Control — Sebastian Dalleiger (CISPA Helmholtz Center for Information Security); Jilles Vreeken (CISPA Helmholtz Center for Information Security)

Flexible Modeling and Multitask Learning using Differentiable Tree Ensembles — Shibal Ibrahim (Massachusetts Institute of Technology); Hussein Hazimeh (MIT); Rahul Mazumder (Massachusetts Institute of Technology)

How does Heterophily Impact Robustness of Graph Neural Networks? Theoretical Connections and Practical Implications — Jiong Zhu (University of Michigan); Junchen Jin (University of Michigan, Ann Arbor); Donald Loveland (University of Michigan Ann Arbor); Michael Schaub (RWTH Aachen University); Danai Koutra (U Michigan)

Saliency-regularized Deep Multi-task Learning — Guangji Bai (Emory University); Zhao Liang (Emory University)

Geometric Policy Iteration for Markov Decision Processes — Yue Wu (UC Davis); Jesus de Loera (UC Davis)

Room 207B (Data Cleaning, Transformation and Integration) Session Chair: Kunpeng Liu

Evaluating Knowledge Graph Accuracy Powered by Optimized Human-machine Collaboration — Yifan Qi (Fudan University); Weiguo Zheng (Fudan University); Liang Hong ("Wuhan University, China"); Lei Zou (Peking University)

Communication-Efficient Robust Federated Learning with Noisy Labels — Junyi Li (University of Pittsburgh); Jian Pei (Simon Fraser University); Heng Huang (University of Pittsburgh)

In Defense of Core-set: A Density-aware Core-set Selection for Active Learning — Yeachan Kim (Deargen Inc.); Bonggun Shin (Deargen Inc.)

HyperLogLogLog: Cardinality Estimation With One Log More — Matti Karppa (IT University of Copenhagen); Rasmus Pagh (University of Copenhagen)

Learning Optimal Priors for Task-Invariant Representations in Variational Autoencoders — Hiroshi Takahashi (NTT Computer and Data Science Laboratories); Tomoharu Iwata (NTT); Atsutoshi Kumagai (NTT Computer and Data Science Laboratories); Sekitoshi Kanai (NTT); Masanori Yamada (NTT Social Informatics Laboratories); Yuuki Yamanaka (NTT Social Informatics Laboratories); Hisashi Kashima (Kyoto University)

PARSRec: Explainable Personalized Attention-fused Recurrent Sequential Recommendation Using Session Partial Actions — Ehsan Gholami (University of California, Davis); Mohammad Motamedi (University of California, Davis); Ashwin Aravindakshan (University of California-Davis)

Room 208AB (Clustering, Imbalanced Data and Tensors) Session Chair: Claudia Plant

The DipEncoder: Enforcing Multimodality in Autoencoders — Collin Leiber (LMU Munich); Lena Greta Marie Bauer (University of Vienna, ds:UniVie); Michael Neumayr (LMU Munich); Claudia Plant (University of Vienna, Austria); Christian Boehm (University of Munich)

Clustering with fair center representation: parameterized approximation algorithms and heuristics — Suhas Thejaswi (Aalto Univeristy); Ameet Gadekar (Aalto University); Bruno Ordozgoiti (Queen Mary University of London); Micha_ Osadnik (Aalto University)

An Embedded Feature Selection Framework for Control — Jiawen Wei (Central South University); Fangyuan Wang (Zhejiang Sci-Tech University); Wanxin Zeng (Central South university); Wenwei Lin (Central South University); Ning Gui (Central South University)

SOS: Score-based Oversampling Minor Classes for Tabular Data — Jayoung Kim (Yonsei University); ChaeJeong Lee (Yonsei University); Yehjin Shin (Yonsei University); Sewon Park (Samsung SDS); Minjung Kim (Samsung SDS); Noseong Park (Yonsei University, Korea); Jihoon Cho (Samsung SDS)

Low-rank Nonnegative Tensor Decomposition in Hyperbolic Space — Bo Hui (Auburn University); Wei-Shinn Ku (Auburn University)

Robust Tensor Graph Convolutional Networks via T-SVD based Graph Augmentation — Zhebin Wu (Sun Yat-Sen University); Lin Shu (Sun Yat-sen University); Ziyue Xu (Sun Yat-Sen University); Yaomin Chang (Sun Yat-sen University); Chuan Chen (Sun Yat-sen University); Zibin Zheng (Sun Yat-sen University)

Room 209ABC (User Modeling, Knowledge and Ontologies, Web and Commerce) Session Chair: Hongning Wang

CrossCBR: Cross-view Contrastive Learning for Bundle Recommendation — Yunshan Ma (National University of Singapore); Yingzhi He (National University of Singapore); An Zhang (National University of Singapore); Xiang Wang (National University of Singapore); Tat-Seng Chua (National university of Singapore)

HICF: Hyperbolic Informative Collaborative Filtering — Menglin Yang (The Chinese University of Hong Kong); Li Zhihao (Harbin Institute of Technology, Shenzhen); Min Zhou (Huawei Technologies co. ltd); Jiahong Liu (Harbin Institute of Technology(Shenzhen)); Irwin King (The Chinese University of Hong Kong)

Dual-Geometric Space Embedding Model for Two-View Knowledge Graphs — Roshni Iyer (University of California, Los Angeles); Yunsheng Bai (University of California, Los Angeles); Wei Wang (UCLA); Yizhou Sun (UCLA)

Disentangled Ontology Embedding for Zero-shot Learning — Yuxia Geng (Zhejiang University); Jiaoyan Chen (University of Oxford); Wen Zhang (Zhejiang University); yajing xu (zhejiang university); Zhuo Chen (Zhejiang University); Jeff Z. Pan (The University of Edinburgh); yufeng huang (Zhejiang University); Feiyu Xiong (Alibaba); Huajun Chen (Zhejiang University)

Scalar is Not Enough: Vectorization-based Unbiased Learning to Rank — Mouxiang Chen (Zhejiang University); Chenghao Liu (Salesforce); Zemin Liu (Singapore Management University); Jianling Sun (Zhejiang University)

Learning Relevant Information in Conversational Search and Recommendation using Deep Reinforcement Learning — Ali Montazeralghaem (University of Massachusetts Amherst); James Allan (University of Massachusetts Amherst)

Room 102A (Time Series and Streaming Data) Session Chair: Jaemin Yoo

Local Evaluation of Time Series Anomaly Detection Algorithms — Alexis Huet (Huawei Technologies France); Jose M Navarro (Huawei Technologies Co. Ltd.); dario rossi (Huawei)

Learning to Rotate: Quaternion Transformer for Complicated Periodical Time Series Forecasting — Weiqi Chen (Alibaba Group); Wenwei WANG (Alibaba Group); Bingqing Peng (Alibaba Group); Qingsong Wen (Alibaba Group U.S.); Tian Zhou (Alibaba DAMO Academy); Liang Sun (Alibaba Group)

Learning Differential Operators for Interpretable Time Series Modeling — Yingtao Luo (Carnegie Mellon University); Chang Xu (Microsoft); Yang Liu (Microsoft); Weiqing Liu (Microsoft Research); Shun Zheng (Microsoft Research); Jiang Bian (Microsoft Research)

Non-stationary Time-aware Kernelized Attention for Temporal Event Prediction — Yu Ma (AntGroup); Zhining Liu (Ant Group); Chenyi Zhuang (Ant Financial); Yize Tan (Ant Financial Services Group); Yi Dong (Ant Financial Services Group); WENLIANG ZHONG (Ant Group); Jinjie Gu (Ant Group)

RL2: A Call for Simultaneous Representation Learning and Rule Learning for Graph Streams — Qu Liu (University of Massachusetts, Lowell); Tingjian Ge (University of Massachusetts, Lowell)

Streaming Hierarchical Clustering based on Point-set Kernel — Xin Han (University of Macau); Ye Zhu (Deakin University); Kai Ming Ting (Nanjing University); De-Chuan Zhan (Nanjing University); Gang Li (Deakin Univeristy, Australia)

All Other Papers Accepted in Research Track

Sufficient Vision Transformer — Zhi Cheng (The University of Sydney); Xiu Su (University of Sydney); XUEYU WANG (The University of Sydney); Shan You (SenseTime); Chang Xu (University of Sydney)

Estimating Individualized Causal Effect with Confounded Instruments — Haotian Wang (National University of Defense Technology); Wenjing Yang (National University of Defense Technology); Longqi Yang (National University of Defense Technology); Anpeng Wu (Zhejiang University); liyang xu (National University of Defense Technology); Jing Ren (NUDT); Fei Wu (Zhejiang University, China); Kun Kuang (Zhejiang University)

MDP2 Forest: A Constrained Continuous Multi-dimensional Policy Optimization Approach for Short-video Recommendation — Sizhe Yu (Shanghai University of Finance and Economics); Ziyi Liu (School of Statistics, Renmin University of China); Shixiang Wan (Tencent); zero Jay (Tencent); Zang Li (DiDi AI Labs, Didi Chuxing); Fan Zhou (Shanghai University of Finance and Economics

FLDetector: Detecting Malicious Clients in Federated Learning via Checking Model-Updates Consistency — ZAIXI ZHANG (University of Science and Technology of China); Xiaoyu Cao (Duke University); Jinyuan Jia (Duke University); Neil Zhenqiang Gong (Duke University)

Adaptive Learning for Weakly Labeled Streams — Zhen-Yu Zhang (Nanjing University); Yu-Yang Qian (Nanjing University); Yu-Jie Zhang (Nanjing University); Yuan Jiang (Nanjing University); Zhi-Hua Zhou (Nanjing University)

MetaPTP: An Adaptive Meta-optimized Model for Personalized Spatial Trajectory Prediction — Yuan Xu (Soochow University); Jiajie Xu (Soochow University); Jing ZHAO (HKUST); Kai Zheng (University of Electronic Science and Technology of China); An Liu (Soochow University); Lei Zhao (Soochow University); Xiaofang Zhou (The Hong Kong University of Science and Technology)

Partial Label Learning with Discrimination Augmentation — Wei Wang (Southeast University); Min-Ling Zhang (Southeast University)

UD-GNN: Uncertainty-aware Debiased Training on Semi-Homophilous Graphs — Yang Liu (Institute of Computing Technology_Chinese Academy of Sciences); Xiang Ao (Institute of Computing Technology, CAS); Fuli Feng (University of Science and Technology of China); Qing He (Institute of Computing Technology, Chinese Academy of Sciences)

Unified 2D and 3D Pre-Training of Molecular Representations — Jinhua Zhu (University of Science and Technology of China); Yingce Xia (Microsoft Research Asia); Lijun Wu (Microsoft Research); Shufang Xie (Microsoft Research Asia); Tao Qin (Microsoft Research Asia); Wengang Zhou (University of Science and Technology); Houqiang Li (University of Science and Technology of China); Tie-Yan Liu (Microsoft Research)

On Aligning Tuples for Regression — Chenguang Fang (Tsinghua University); Shaoxu Song (Tsinghua University); Yinan Mei (Tsinghua University); Ye Yuan (Beijing Institute of Technology); Jianmin Wang ("Tsinghua University, China")

Toward Real-life Dialogue State Tracking Involving Negative Feedback Utterances — Puhai Yang (Beijing Institute of Technology); Heyan Huang (Beijing Institute of Technology); Wei Wei (Huazhong University of Science and Technology); Xian-Ling Mao (Beijing Institute of Technology)

M3Care: Learning with Missing Modalities in Multimodal Healthcare Data — Chaohe Zhang (Peking University); Xu Chu (Peking University); Liantao Ma (Peking University); Yinghao Zhu (Beihang University); Yasha Wang (Peking University); Jiangtao Wang (Coventry University); Junfeng Zhao (peking university)

Counteracting User Attention Bias in Music Streaming Recommendation via Reward Modification — Xiao Zhang (Renmin University of China); Sunhao Dai (Renmin University of China); Jun Xu (Renmin University of China)*; Zhenhua Dong (Huawei Noah's Ark Lab); Quanyu Dai (Huawei Noah's Ark Lab); Ji-Rong Wen (Renmin University of China)

Pre-training Enhanced Spatial-temporal Graph Neural Network for Multivariate Time Series Forecasting — Zezhi Shao (Institute of Computing Technology, Chinese Academy of Sciences); Zhao Zhang (Institute of Computing Technology, Chinese Academy of Sciences); Fei Wang (Institute of Computing Technology, Chinese Academy of Sciences); yongjun xu (Institute of Computing Technology, Chinese Academy of Sciences)

Practical Lossless Federated Singular Vector Decomposition Over Billion-Scale Data — Di Chai (HKUST); Leye Wang (Peking University, China); Junxue Zhang (HKUST); Liu Yang (HKUST); Shuowei Cai (HKUST); Kai Chen (HKUST); Qiang Yang (Hong Kong UST)

HierCDF: A Bayesian Network-based Hierarchical Cognitive Diagnosis Framework Jiatong Li (University of Science and Technology of China); Fei Wang (University of Science and Technology of China); Qi Liu (University of Science and Technology of China); Mengxiao Zhu (University of Science and Technology of China); Wei Huang (University of Science and Technology of China); Zhenya Huang (University of Science and Technology of China); Enhong Chen (University of Science and Technology of China); Yu Su (Hefei Normal University); Shijin Wang (iFLYTEK AI Research (Central China))

Multi-View Clustering for Open Knowledge Base Canonicalization — Wei Shen (Nankai University); Yang Yang (Nankai university); Yinan Liu (Nankai University)

OODGAT: Learning on Graphs with Out-of-distribution Nodes — Yu Song (Westlake University); Donglin Wang (Westlake University)

Adversarial Gradient Driven Exploration for Deep Click-Through Rate Prediction — Kailun Wu (Alibaba Group); Weijie Bian (Alibaba Group); Zhangming Chan (Alibaba Group); Lejian Ren (Alibaba Group); SHIMING XIANG (Chinese Academy of Sciences, China); Shu-Guang Han (Alibaba Group); Hongbo Deng (Alibaba Group); Bo Zheng (Alibaba Group)

Multi-modal Siamese Network for Entity Alignment — Liyi Chen (University of Science and Technology of China); Zhi Li (University of Science and Technology of China); Tong Xu (University of Science and Technology of China); Han Wu (University of Science and Technology of China); Zhefeng Wang (Huawei Cloud); Nicholas Jing Yuan (Huawei Cloud); Enhong Chen (University of Science and Technology of China)

Stabilizing Voltage in Power Distribution Networks via Multi-Agent Reinforcement Learning with Transformer — Minrui Wang (University of Science and Technology of China); Mingxiao Feng (University of Science and Technology of China); Wengang Zhou (University of Science and Technology of China); Houqiang Li (University of Science and Technology of China)

m-mix: Generating Hard Negatives via Multi-sample Mixing for Contrastive Learning — Shaofeng Zhang (Shanghai Jiao Tong University); Meng Liu (Shanghai Jiao Tong University); Junchi Yan (Shanghai Jiao Tong University); Hengrui Zhang (University of Illinois at Chicago); Lingxiao Huang (Huawei TCS Lab); Pinyan Lu (Shanghai University of Finance and Economics); Xiaokang Yang (Shanghai Jiao Tong University of China)

On-Device Learning for Model Personalization with Large-Scale Cloud-Coordinated Domain AdaptionYikai Yan (Shanghai Jiao Tong University); Chaoyue Niu (Shanghai Jiao Tong University); Renjie Gu (Shanghai Jiao Tong University); Fan Wu (Shanghai Jiao Tong University); Shaojie Tang (University of Texas at Dallas); Lifeng Hua (Alibaba Group); Chengfei Lyu (Alibaba Group); Guihai Chen (Shanghai Jiao Tong University)

Noisy Interactive Graph Search — Qianhao Cong (National University of Singapore); Jing Tang (The Hong Kong University of Science and Technology); Kai Han (Soochow University); Yuming Huang (National University of Singapore); Lei Chen (Hong Kong University of Science and Technology); Yeow Meng Chee (National University of Singapore)

Continuous-Time and Multi-Level Graph Representation Learning for Origin-Destination Demand Prediction — Liangzhe Han (Beihang University); Xiaojian Ma (Beihang University); Leilei Sun (Beihang Univerisity); Bowen Du (Beihang Univeristy); Yanjie Fu (University of Central Florida); Weifeng Lv (Beihang University); Hui Xiong (Hong Kong University of Science and Tech)

Efficient Orthogonal Multi-view Subspace Clustering — Man-Sheng Chen (Sun Yat-sen University); Chang-Dong Wang (Sun Yat-sen University); Dong Huang (South China Agricultural University); Jian-Huang Lai (Sun Yat-sen University); Philip S Yu (UNIVERSITY OF ILLINOIS AT CHICAGO)

Submodular Feature Selection for Partial Label Learning — Wei-Xuan Bao (Southeast University); Jun-Yi Hang (Southeast University); Min-Ling Zhang (Southeast University)

FedWalk: Communication Efficient Federated Unsupervised Node Embedding with Differential Privacy — Qiying Pan (Shanghai Jiao Tong University); Yifei Zhu (Shanghai Jiao Tong University)

Compressing Deep Graph Neural Networks via Adversarial Knowledge Distillation — Huarui He (University of Science and Technology of China); Jie Wang (University of Science and Technology of China); Zhanqiu Zhang (University of Science and Technology of China); Feng Wu (University of Science and Technology of China)

Free-direction Knowledge Distillation via Reinforcement Learning for Graph Neural Networks — Kaituo Feng (Beijing Institute of Technology); Changsheng Li (Beijing Institute of Technology); Ye Yuan (Beijing Institute of Technology); Guoren Wang (Beijing Institute of Technology)

GraphMAE: Self-Supervised Masked Graph Autoencoders — Zhenyu Hou (Tsinghua University); Xiao Liu (Tsinghua University); Yukuo Cen (Tsinghua University); Yuxiao Dong (Tsinghua University); Hongxia Yang (Alibaba Group); chunjie wang (BirenTech Research); Jie Tang (Tsinghua University)

RGVisNet: A Hybrid Retrieval-Generation Neural Framework Towards Automatic Data Visualization Generation — Yuanfeng Song (The Hong Kong University of Science and Technology); Xuefang Zhao (WeBank Co., Ltd); Raymond Chi-Wing Wong (Hong Kong University of Science and Technology); Di Jiang (WeBank)

Partial-Quasi-Newton Methods: Efficient Algorithms for Minimax Optimization Problems with Unbalanced Dimensionality — Chengchang Liu (The Chinese University of Hong Kong); Shuxian Bi (University of Science and Technology of China); Luo Luo (Fudan University); John C. S. Lui (The Chinese University of Hong Kong)

Instant Graph Neural Networks for Dynamic Graphs — Yanping Zheng (Renmin University of China); Hanzhi Wang (Renmin University of China); Zhewei Wei (Renmin University of China)*; Jiajun Liu (CSIRO); Sibo Wang (The Chinese University of Hong Kong)

An Empirical Study of Deep Graph Neural Networks — Wentao Zhang (Peking University); Zeang Sheng (Peking University); Ziqi Yin (BeiJing Institute of Technology); Yuezihan Jiang (Peking University); Yikuan Xia (Peking University); Jun Gao (Peking University); Zhi Yang (Peking University); Bin Cui (Peking University)

Releasing Private Data for Numerical Queries — Yuan Qiu (Hong Kong Univ. of Science and Technology); Wei DONG (Hong Kong University of Science and Technology, Hong Kong); Ke Yi (Hong Kong Univ. of Science and Technology); Bin Wu (Alibaba); Feifei Li (Alibaba Group)

Multi-Behavior Hypergraph-Enhanced Transformer for Next-Item Recommendation — Yuhao Yang (Wuhan University); Chao Huang (University of Hong Kong); Lianghao Xia (South China University of Technology); Yuxuan Liang (National University of Singapore); Yanwei Yu (Ocean University of China); Chenliang Li (Wuhan University)

End-to-End Semi-Supervised Ordinal Regression AUC Maximization with Convolutional Kernel Networks — Ziran Xiong (Nanjing University of Information Science and Technology); Wanli Shi (Nanjing University of Information Science & Technology); Bin Gu (MBZUAI)

Sampling-based estimation of the number of distinct values in distributed environment — Jiajun Li (Renmin University of China); Zhewei Wei (Renmin University of China); Bolin Ding ("Data Analytics and Intelligence Lab, Alibaba Group"); Xiening Dai (Alibaba Group); Lu Lu (Alibaba Group); Jingren Zhou (Alibaba Group)

Self-Augmented Hypergraph Transformer for Recommender Systems — Lianghao Xia (South China University of Technology); Chao Huang (University of Hong Kong); Chuxu Zhang (Brandeis University)

GPPT: Graph Pre-training and Prompt Tuning to Generalize Graph Neural Networks — Ming-chen Sun (JiLin University); Kaixiong Zhou (Rice University); Xin He (Jilin university); Ying Wang (Jilin University); Xin Wang (Jilin University)

TransBO: Hyperparameter Optimization via Two-Phase Transfer Learning — Yang Li (Peking University); Yu Shen (Peking University); Huaijun Jiang (Peking University); Wentao Zhang (Peking University); Zhi Yang (Peking University); Ce Zhang (ETH); Bin Cui (Peking University)

Transfer Learning based Search Space Design for Hyperparameter Tuning — Yang Li (Peking University); Yu Shen (Peking University); Huaijun Jiang (Peking University); Tianyi Bai (Beijing Institute of Technology); Wentao Zhang (Peking University); Ce Zhang (ETH); Bin Cui (Peking University)

Semantic Enhanced Text-to-SQL Parsing via Iteratively Learning Schema Linking Graph — Aiwei Liu (Tsinghua University); Xuming Hu (Tsinghua University); Li Lin (Tsinghua University); Lijie Wen (Tsinghua University)

Reliable Representations Make A Stonger Defender:Unsupervised Structure Refinement for Robust GNN — Kuan Li (Institute of Computing Technology, Chinese Academy of Science); Yang Liu (Institute of Computing Technology_Chinese Academy of Sciences); Xiang Ao (Institute of Computing Technology, CAS); Jianfeng Chi (Alibaba Group); Jinghua Feng (Ailbaba Group); Hao Yang (Alibaba Group); Qing He (Institute of Computing Technology, Chinese Academy of Sciences)

Preserving Privacy and Robustness through the Lens of Causality — Qibing Ren (Shanghai Jiao Tong University); Yiting Chen (Shanghai Jiao Tong University); Yichuan Mo (Shanghai Jiao Tong University); Qitian Wu (Shanghai Jiao Tong University); Junchi Yan (Shanghai Jiao Tong University)

Numerical Tuple Extraction from Tables with Pre-training — Qingping Yang (Chinese Academy of Sciences (CAS), Institute of Computing Technology); Yixuan Cao (Institute of Computing Technology, CAS); Yingming Hu (Huatai Securities); Jianfeng Li (Huatai Securities); Nanbo Peng (Huatai Securities); Ping Luo (Chinese Academy of Sciences)

ClusterEA: Scalable Entity Alignment with Stochastic Training and Normalized Mini-batch Similarities — Yunjun Gao (Zhejiang University); Xiaoze Liu (Zhejiang University); Junyang Wu (Zhejiang University); Tianyi Li (Aalborg Univeristy); Pengfei Wang (Zhejiang University); Lu Chen (Zhejiang University)

Reinforcement Subgraph Reasoning for Fake News Detection — Ruichao Yang (Hong Kong Baptist University); Xiting Wang (Microsoft Research Asia); Yiqiao Jin (University of California, Los Angeles); Chaozhuo Li (Microsoft Research Asia); Jianxun Lian (MSRA); Xing Xie (Microsoft Research Asia)

MT-FlowFormer: A Semi-Supervised Flow Transformer for Encrypted Traffic Classification — Ruijie Zhao (Shanghai Jiao Tong University); Xianwen Deng (Shanghai Jiao Tong University); Zhicong Yan (Shanghai JiaoTong University); Jun Ma (Shanghai Jiao Tong University); Zhi Xue (Shanghai Jiao Tong University); Yijun Wang (Shanghai Jiao Tong University)

Motif Prediction with Graph Neural Networks — Maciej Besta (ETH Zurich); Raphael Grob (ETH Zurich); Cesare Miglioli (University of Geneva); Nicola Bernold (ETH Zürich); Grzegorz Kwasniewski (ETH Zurich); Gabriel Gjini (ETH Zurich); Raghavendra Kanakagiri (University of Illinois at Urbana-Champaign);

Synthesising Audio Adversarial Examples for Automatic Speech Recognition — Xinghua Qu (Bytedance AI Lab); Pengfei Wei (National University of Singapore); Mingyong Gao (USTC); Zhu Sun (Macquarie University); Yew Soon Ong (Nanyang Technological University, Nanyang View, Singapore); Zejun Ma (Bytedance)

Importance Prioritized Policy Distillation — Xinghua Qu (Bytedance AI Lab); Yew Soon Ong (Nanyang Technological University, Nanyang View, Singapore); Abhishek Gupta (Singapore Institute of Manufacturing Technology); Pengfei Wei (National University of Singapore); Zhu Sun (Macquarie University); Zejun Ma (Bytedance)

Knowledge-Guided Pre-training of Graph Transformer for Molecular Property Prediction — Han Li (Tsinghua University); Dan Zhao (Tsinghua University); Jianyang Zeng (Tsinghua)

Compute Like Humans: Interpretable Step-by-step Symbolic Computation with Deep Neural Network — Shuai Peng (Peking University); Di Fu (Bytedance); Yong CAO (Bytedance Inc.); Yijun Liang (ByteDance); Gu Xu (Bytedance Inc.); Liangcai Gao (Peking University); Zhi Tang (Peking University)

A Generalized Doubly Robust Learning Framework for Debiasing Post-Click Conversion Rate Prediction — Quanyu Dai (Huawei Noah's Ark Lab); Peng Wu (Peking University); Haoxuan Li (Peking University); Zhenhua Dong (Huawei Noah's Ark Lab); Xiao-Hua Zhou (Peking University); Rui Zhang (ruizhang.info); Rui zhang (Huawei Technologies Co., Ltd.); Jie Sun (Theory Lab, Huawei Hong Kong Research Center)

Active Model Adaptation Under Unknown Shift — Jie-Jing Shao (Nanjing University); Yunlu Xu (Hikvision Research Institute); Zhanzhan Cheng (Zhejiang University & Hikvision Research Institute); Yu-Feng Li (Nanjing University)

Invariant Preference Learning for General Debiasing in Recommendation — Zimu Wang (Tsinghua University); Yue He (Tsinghua University); Jiashuo Liu (Tsinghua University); Wenchao Zou (Siemens China); Philip S Yu (UNIVERSITY OF ILLINOIS AT CHICAGO); Peng Cui (Tsinghua University)

ADS Track Papers Schedule

SESSION 1: Tuesday, August 16, 10:00 AM-12:00 PM

Room 202A (Recommendation Systems) Session Chair: Weize Kong

Persia: An Open, Hybrid System Scaling Deep Learning-based Recommenders up to 100 Trillion Parameters — Xiangru Lian (University of Rochester); Binhang Yuan (ETH Zurich); Xuefeng Zhu (Kuaishou Technology); Yulong Wang (Kuaishou Technology); Yongjun He (ETH Zürich); wu honghuan (Kuaishou); Lei Sun (Kuaishou Technology); Haodong Lyu (Kuaishou Technology); Chengjun Liu (Kuaishou Technology); Xing Dong (Kuaishou Technology); Yiqiao Liao (Kuaishou Technology); Mingnan Luo (Kuaishou Technology); Congfei Zhang (Kuaishou Technology); Jingru Xie (Kwai Inc.); Haonan Li (Kuaishou Technology); Lei Chen (Kuaishou Technology); Renjie Huang (Kuaishou Technology); Jianying Lin (Kuaishou); Chengchun Shu (Kuaishou Technology); Xuezhong Qiu (Kuaishou Technology); Zhishan Liu (Kuaishou Technology); Dongying Kong (Kuaishou Technology); Lei Yuan (Kuaishou Technology); Hai Yu (Kuaishou Technology); Sen Yang (Kwai Inc.); Ce Zhang (ETH); Ji Liu (Kwai Inc.)

Uncovering the Heterogeneous Effects of Preference Diversity on User Activeness: A Dynamic Mixture Model — Yunfei Lu (Huawei); Peng Cui (Tsinghua University); Linyun Yu (Bytedance AI Lab); Lei Li (Bytedance); Wenwu Zhu (Tsinghua University)

Affective Signals in a Social Media Recommender System — Jane Yu (Facebook); Yi-Chia Wang (Uber); Lijing Qin (Meta AI); Canton Cristian (Facebook AI); Alon Y Halevy (Facebook)

Pricing the Long Tail by Explainable Product Aggregation and Monotonic Bandits — Marco Mussi (Politecnico di Milano); Gianmarco Genalti (Politecnico di Milano); Francesco Trovò (Politecnico di Milano); Alessandro Nuara (Politecnico di Milano, Italy); Nicola Gatti (Politecnico di Milano); Marcello Restelli (Politecnico di Milano)

Multi Armed Bandit vs. A/B Tests in E-commence - Confidence Interval and Hypothesis Test Power Perspectives — Ding Xiang (The Home Depot); Rebecca West (The Home Depot); Jiaqi Wang (The Home Depot); Xiquan Cui (Homedepot); Jinzhou Huang (The Home Depot)

Room 207A (Smart Transportation and Geo) Session Chair: Yushun Dong

Representative Routes Discovery From Massive Trajectories Tingting Wang (RMIT University); Shixun Huang (RMIT); Zhifeng Bao (RMIT University); J. Shane Culpepper (RMIT University); Reza Arablouei (CSIRO)

Uncertainty Quantification of Sparse Trip Demand Prediction with Spatial-Temporal Graph Neural Networks — Dingyi Zhuang (MIT); Shenhao Wang (MIT); Haris Koutsopoulos (Northeastern University); Jinhua Zhao (MIT)

Reinforcement Learning-based Placement of Charging Stations in Urban Road Networks — Leonie A von Wahl (Volkswagen Group); Nicolas Tempelmeier (Volkswagen AG); Ashutosh Sao (L3S Research Center, Leibniz University Hannover); Elena Demidova (DSIS Research Group, University of Bonn)

Graph Meta-Reinforcement Learning for Transferable Autonomous Mobility-on-Demand — Daniele Gammelli (Technical University of Denmark (DTU)); Kaidi Yang (Stanford University); James Harrison (Google); Filipe Rodrigues (Technical University of Denmark (DTU)); Francisco Pereira (DTU); Marco Pavone (Stanford University)

Para-Pred: Addressing Heterogeneity for City-Wide Indoor Status Estimation in On-Demand Delivery — Wei Liu (Southeast University); Yi Ding (UNIVERSITY OF MINNESOTA); Shuai Wang (Southeast University); Yu Yang (Lehigh University); Desheng Zhang (Rutgers University)

SESSION 2: Tuesday, August 16, 1:30 PM-3:30 PM

Room 202A (Recommendation Systems & E-commerce) Session Chair: Teng Ye

Multilingual Taxonomic Web Page Classification for Contextual Targeting at Yahoo — Eric Ye (Yahoo Research); Xiao Bai (Yahoo); Neil O'Hare (Yahoo Research); Eliyar Asgarieh (Yahoo Research); Kapil Thadani (Yahoo Research); Francisco Perez-Sorrosal (Yahoo Research); Sujyothi Adiga (Ads - Targeting & Identity Engineering)

Deconfounding Duration Bias in Watch-time Prediction for Video Recommendation — Ruohan Zhan (Stanford University); Changhua Pei (Alibaba Group); Qiang Su (Kuaishou Technology); Jianfeng WEN (Kuaishou Inc.); Xueliang Wang (University of Science and Technology of China); Guanyu Mu (Kuaishou Inc.); Dong Zheng (Kuaishou Technology); Peng Jiang (Kuaishou Inc.); Kun Gai (AI)

Automatic Controllable Product Copywriting for E-Commerce — Xiaojie Guo (JD.COM Silicon Valley Research Center); Qingkai Zeng (University of Notre Dame); Meng Jiang (University of Notre Dame); Xiao Yun (JD.com); Bo Long (JD.com); Lingfei Wu (JD.COM Silicon Valley Research Center)

Modeling the Effect of Persuasion Factor on User Decision for Recommendation — Chang Liu (Tsinghua University); Chen Gao (Tsinghua University); Yuan Yuan (Tsinghua University); BAI CHEN (Meituan); Lingrui Luo (Meituan); Xiaoyi Du (Meituan); shi xinlei (meituan); Hengliang Luo (Meituan); Depeng Jin (Tsinghua University); Yong Li (Tsinghua University)

An Online Multi-task Learning Framework for Google Feed Ads Auction Models — Ning Ma (Google); Mustafa Ispir (Google); Yuan Li (Google); Yongpeng Yang (Google); Zhe Chen (Google); Zhiyuan Cheng (Google); Lan Nie (Google); Kishor Barman (Google)

Room 207A (Geo Information and Failure Detection) Session Chair: Yanchi Liu

Connecting the Hosts: Street-Level IP Geolocation with Graph Neural Networks — Zhiyuan Wang (University of Electronic Science and Technology of China); Wenxuan Zeng (University of Electronic Science and Technology of China); Fan Zhou (School of Information and Software Engineering, University of Electronic Science and Technology of China); Goce Trajcevski (Iowa State University); Chunjing Xiao (Henan University); Yong Wang (Zhengzhou Aiwen Tech); Kai Chen (HKUST)

Physics-Guided Graph Meta Learning for Predicting Water Temperature and Streamflow in Stream Networks — Shengyu Chen (University of Pittsburgh); Jacob Zwart (U.S. geological survey); Xiaowei Jia (University of Pittsburgh)

DuARE: Automatic Road Extraction with Aerial Images and Trajectory Data at Baidu Maps — Jianzhong Yang (Baidu); Xiaoqing Ye (baidu); Bin Wu (Beijing Baidu Co,. Ltd); yanlei gu (Beijing Baidu Co,. Ltd); Ziyu Wang (Baidu); Deguo Xia (Baidu); Jizhou Huang (Baidu)

NENYA: Cascade Reinforcement Learning for Cost-Aware Failure Mitigation at Microsoft 365 — Lu Wang (East China Normal University); Pu Zhao (Microsoft Research); Chao Du (Microsoft Research); Chuan Luo (Beihang University); Mengna Su (Microsoft); Fangkai Yang (Microsoft Research); yudong Liu (https://www.microsoft.com); Qingwei Lin (Microsoft Research); Paul Wang (Microsoft 365); Yingnong Dang (Microsoft, USA); Hongyu Zhang (University of Newcastle); Saravan Rajmohan (Microsoft 365); Dongmei Zhang (Microsoft Research Asia)

Multi-task Hierarchical Classification for Disk Failure Prediction in Online Service Systems — Yudong Liu (https://www.microsoft.com); Hailan Yang (Microsoft); Pu Zhao (Microsoft Research); Minghua Ma (Microsoft Research); Chengwu Wen (Peking University); Hongyu Zhang (University of Newcastle); Chuan Luo (Beihang University); Qingwei Lin (Microsoft Research); Chang Yi (Microsoft); Jiaojian Wang (M365); Chenjian Zhang (Microsoft); Paul Wang (Microsoft 365); Yingnong Dang (Microsoft, USA); Saravan Rajmohan (Microsoft 365); Dongmei Zhang (Microsoft Research Asia)

SESSION 3: Tuesday, August 16, 4:00 PM-6:00 PM

Room 207A (Human & Interfaces) Session Chair: Liang Wu

Looper: an end-to-end ML platform for product decisions — Igor L Markov (Meta); Hanson Wang (Facebook); Nitya S Kasturi (Facebook); Shaun Singh (Facebook); Mia R Garrard (Facebook); Yin Huang (Facebook); Sze Way Celeste Yuen (Facebook); Sarah Tran (Facebook); Zehui Wang (Facebook); Igor Glotov (Facebook Inc.); Tanvi Gupta (Facebook); Peng Chen (Facebook); Boshuang Huang (Facebook); Xiaowen Xie (Google); Michael Belkin (Facebook); Sal Uryasev (Facebook); Sam Howie (Facebook); Eytan Bakshy (Meta); Norm Zhou (Facebook)

Interpretability, Then What? Editing Machine Learning Models to Reflect Human Knowledge and Values — Zijie J. Wang (Georgia Tech); Alex Kale (University of Washington); Harsha Nori (Microsoft); Peter Stella (NYU Langone Health); Mark Nunnally (NYU Langone health); Duen Horng Chau (Georgia Institute of Technology); Mihaela Vorvoreanu (Microsoft); Jennifer Wortman Vaughan (Microsoft Research); Rich Caruana (Microsoft Research)

Promotheus: An End-to-End Machine Learning Framework for Optimizing Markdown in Online Fashion E-commerce — Eleanor Loh (ASOS); Jalaj Khandelwal (ASOS); Brian Regan (ASOS); Duncan A. Little (ASOS.com)

Crowdsourcing with Contextual Uncertainty — Viet-An Nguyen (Facebook); Peibei Shi (Facebook); Jagdish Ramakrishnan (Facebook); Narjes Torabi (Facebook); Nimar S Arora (Bayesian Logic); Udi Weinsberg (Facebook); Michael Tingley (Facebook)

CausalMTA: Eliminating the User Confounding Bias for Causal Multi-touch Attribution — Di Yao (Institute of Computing Technology, Chinese Academy of Sciences); Chang Gong (Institute of Computing Technology, Chinese Academy of Sciences); Lei Zhang (Alibaba); Sheng Chen (Alibaba Group); Jingping Bi (Institute of Computing Technology, Chinese Academy of Sciences)

SESSION 4: Wednesday, August 17, 10:00 AM-12:00 PM

Room 202A (Search & Information Retrieval) Session Chair: Yuening Li

Rax: Composable Learning-to-Rank using JAX — Rolf Jagerman (Google Research); Xuanhui Wang (Google); Honglei Zhuang (Google Research); Zhen Qin (Google); Michael Bendersky (Google); Marc Najork (Google)

Multi-Aspect Dense Retrieval — Weize Kong (Google); Swaraj Khadanga (Google); Cheng Li (Google); Shaleen Gupta (Google); Mingyang Zhang (Google); Wensong Xu (Google); Michael Bendersky (Google)

A New Generation of Perspective API: Efficient Multilingual Character-level Transformers — Alyssa Lees (Google); Vinh Q Tran (Google); Yi Tay (Google); Jeffrey Sorensen (Google); Jai Gupta (Google); Donald Metzler (Google); Lucy Vasserman (Google)

A Graph Learning Based Framework for Billion-Scale Offline User Identification — Daixin Wang (Ant Financial Services Group); Zujian Weng (Ant Financial Services Group); Zhengwei Wu (Ant Financial); Zhiqiang Zhang (Ant Group); Peng Cui (Tsinghua University); Hongwei Zhao (Ant Financial Services Group); Jun Zhou (Ant Financial)

RT-VeD: Real-Time VoI Detection on Edge Nodes with an Adaptive Model Selection Framework — Shuai Wang (Southeast University); Junke Lu (Southeast University); Baoshen Guo (Southeast University); Zheng Dong (Wayne State University)

Room 207A (Health Care and Biomedical) Session Chair: Kimis Perros

DNA-Stabilized Silver Nanocluster Design via Regularized Variational Autoencoders — Fariha Moomtaheen (University at Albany SUNY); Matthew Killeen (University at Albany-SUNY); James T Oswald (SUNY Albany DMM Lab); Anna Gonzàlez-Rosell (University of California, Irvine); Peter Mastracco (University of California, Irvine); Alexander Gorovits (Regeneron Pharmaceuticals); Stacy Copp (University of California, Irvine); Petko Bogdanov (University at Albany-SUNY)

What Makes Good Contrastive Learning on Small-Scale Wearable-based Tasks? — Hangwei Qian (Nanyang Technological University); Tian Tian (Nanyang Technological University); Chunyan Miao (NTU)

Multiwave COVID-19 Prediction from Social Awareness using Web Search and Mobility Data — Jiawei Xue (Purdue University); Takahiro Yabe (Massachusetts Institute of Technology); Kota Tsubouchi (Yahoo Japan Corporation); Jianzhu Ma (Institute for Artificial Intelligence, Peking University); Satish V. Ukkusuri (Purdue University)

Counseling Summarization using Mental Health Knowledge Guided Utterance Filtering — ASEEM SRIVASTAVA (IIIT Delhi); Tharun Suresh (Indraprastha Institute of Information Technology - Delhi); Sarah P Lord (Mpathic.ai); Md Shad Akhtar (IIIT Delhi); Tanmoy Chakraborty (Indraprastha Institute of Information Technology Delhi (IIIT-D),India)

ChemicalX: A Deep Learning Library for Drug Pair Scoring — Benedek A Rozemberczki (AstraZeneca); Charles T Hoyt (Harvard Medical School); Anna Gogleva (AstraZeneca); Piotr Grabowski (AstraZeneca); Klas Karis (Harvard Medical School); Andrej Lamov (AstraZeneca); Andriy Nikolov (AstraZeneca); Sebastian Nilsson (AstraZeneca); Michael Ughetto (AstraZeneca); Yu Wang (Vanderbilt university); Tyler Derr (Vanderbilt University); Bejamin Gyori (Harvard Medical School)

SESSION 5: Wednesday, August 17, 1:30 PM-3:30 PM

Room 202A (Question Answering & NLP Applications) Session Chair: Sushant More

BE3R: BERT based Early-Exit using Expert Routing — Sourab Mangrulkar (Amazon Development Center India Pvt. Ltd.); Ankith M S (Amazon); Vivek Sembium (amazon)

Proactively Reducing the Hate Intensity of Online Posts via Hate Speech Normalization — Sarah Masud (IIIT Delhi, India); Manjot Bedi (Northeastern University); Mohammad Aflah Khan (IIIT Delhi); Md Shad Akhtar (IIIT Delhi); Tanmoy Chakraborty (Indraprastha Institute of Information Technology Delhi (IIIT-D),India)

Generating Examples From CLI Usage: Can Transformers Help? — Roshanak Zilouchian Moghaddam (Microsoft); Spandan Garg (Microsoft); Colin Clement (Microsoft); Yevhen Mohylevskyy (Microsoft); Neel Sundaresan (Microsoft)

Pretraining Representations of Multi-modal Multi-query E-commerce Search — Xinyi Liu (Xiamen University); Wanxian Guan (alibaba group); Lianyun Li (Xiamen University); Hui Li (Xiamen University); Chen Lin (Xiamen University); Xubin Li (Alibaba Group); Si Chen (alibaba); Jian Xu (Alibaba Group); Hongbo Deng (Alibaba Group); Bo Zheng (Alibaba Group)

Improving Relevance Modeling via Heterogeneous Behavior Graph Learning in Bing Ads — Bochen Pang (Microsoft); Chaozhuo Li (Microsoft Research Asia); Yuming Liu (Microsoft); Jianxun Lian (MSRA); Jianan Zhao (University of Notre Dame); Hao Sun (Microsoft); Weiwei Deng (Microsoft); Xing Xie (Microsoft Research Asia); Qi Zhang (Microsoft)

Room 207A (Biomedical) Session Chair: Menglling Feng

Fast Mining and Forecasting of Co-evolving Epidemiological Data Streams — Tasuku Kimura (Osaka University); Yasuko Matsubara (Osaka University); Koki Kawabata (Osaka University); Yasushi Sakurai (Osaka University)

T-Cell Receptor-Peptide Interaction Prediction with Physical Model Augmented Pseudo-Labeling — Yiren Jian (Dartmouth College); Erik J Kruus (NEC Labs); Martin Renqiang Min (NEC Labs America-Princeton)

Predicting Age-Related Macular Degeneration Progression with Contrastive Attention and Time-Aware LSTM — Changchang Yin (The Ohio State University); Sayoko Moroi (Ohio State University); Ping Zhang (The Ohio State University)

SAMCNet: Towards a Spatially Explainable AI Approach for Classifying MxIF Oncology Data — Majid Farhadloo (University of Minnesota); Carl Molnar (University of Minnesota); Gaoxiang Luo (University of Minnesota); Yan Li (University of Minnesota); Shashi Shekhar (University of Minnesota); Rachel L Maus (Mayo Clinic); Svetomir Markovic (Mayo Clinic); Alexey Leontovich (Mayo Clinic); Raymond Moore (Mayo Clinic)

SESSION 6: Thursday, August 18, 10:00 AM-12:00 AM

Room 207A (Time-Series and Anomalies) Session Chair: Jing Ma

Data-Driven Oracle Bone Rejoining: A Dataset and Practical Self-Supervised Learning Scheme — Chongsheng Zhang (Henan University); Bin Wang (Henan University); Ke Chen (South China University of Technology); Ruixing Zong (Henan University); Bofeng Mo (Capital Normal University, China); Yi Men (Henan University); George Almpanidis (Henan University); Shanxiong Chen (southwest university); Xiangliang Zhang (University of Notre Dame)

Towards Learning Disentangled Representations for Time Series — Yuening Li (Texas A&M University); Zhengzhang Chen (NEC Laboratories America, Inc.); Daochen Zha (Rice University); Mengnan Du (Texas A&M University); Jingchao Ni (NEC Laboratories America); Denghui Zhang (Rutgers University); Haifeng Chen (NEC Labs); Xia Hu (Rice University)

Greykite: Deploying Flexible Forecasting at Scale in LinkedIn — Albert Chen (LinkedIn); Reza Hosseini (LinkedIn Inc); Kaixu Yang (LinkedIn); Sayan Patra (LinkedIn); Yi Su (LinkedIn); Saad Eddin Al Orjany (LinkedIn); Sishi Tang (Linkedin); Parvez Ahammad (LinkedIn)

Large-Scale Acoustic Automobile Fault Detection: Diagnosing Engines Through Sound — Dennis Fedorishin (University at Buffalo); Justas Birgiolas (ACV Auctions); Deen D Mohan (University at Buffalo); Livio Forte (ACV Auctions); Philip Schneider (ACV Auctions); Srirangaraj Setlur (University at Buffalo, SUNY); Venu Govindaraju (University at Buffalo, SUNY)

Rapid Regression Detection in Software Deployments through Sequential Testing — Michael S Lindon (Netflix); Chris Sanden (Netflix); Vache Shirikian (Netflix)

SESSION 7: Thursday, August 18, 1:30 PM-3:30 PM

Room 202A (Graph Learning) Session Chair: Tyler Derr

EasyFGL: Towards a Unified, Comprehensive and Efficient Platform for Federated Graph Learning -> FederatedScope-GNN: Towards a Unified, Comprehensive and Efficient Package for Federated Graph Learning — Zhen Wang (Alibaba Group); Weirui Kuang (Alibaba Group); Yuexiang Xie (Alibaba Group); Liuyi Yao (Alibaba Group); Yaliang Li (Alibaba Group); Bolin Ding ("Data Analytics and Intelligence Lab, Alibaba Group"); Jingren Zhou (Alibaba Group)

Company-as-Tribe: Company Financial Risk Assessment On Tribe-Style Graph With Hierarchical Graph Neural Networks — Wendong Bi (Institute of Computing Technology, University of Chinese Academy of Sciences); Bingbing Xu (Institute of Computing Technology,University of Chinese Academy of Sciences); Xiaoqian Sun (Institute of Computing Technology, Chinese Academy of Sciences); Zidong Wang (Institute of Computing Technology, Chinese Academy of Sciences); Huawei Shen (Institute of Computing Technology, Chinese Academy of Sciences); Xueqi Cheng (Institute of Computing Technology, Chinese Academy of Sciences)

2693, OAG-LM: Towards A Unified Backbone Language Model For Academic Knowledge Services — Xiao Liu (Tsinghua University); Da Yin (Tsinghua University); Jingnan Zheng (National University of Singapore); Xingjian Zhang (Tsinghua University); Peng Zhang (Tsinghua University); Hongxia Yang (Alibaba Group); Yuxiao Dong (Tsinghua University); Jie Tang (Tsinghua University)

2604, GraphWorld: Fake Graphs Bring Real Insights for GNNs — John Palowitch (Google); Anton Tsitsulin (Google); Brandon Mayer (Google); Bryan Perozzi (Google Research)

2227, CognitionNet: A Collaborative Neural Network for Play Style Discovery in Online Skill Gaming Platform — Rukma A Talwadker (Games24x7); Surajit Chakrabarty (Games24x7); Aditya Pareek (Games24x7); Tridib Mukherjee (Games24x7); Deepak Saini (Games24x7)

ADS PAPER SHOWCASE: Thursday, August 18, 10:00 AM-12:00 PM

Room Salon A (Abnormal Detection, Adversarial Attacks & Robustness) Session Chairs: Yingtong Dou and Wentao Wang

Predicting Bearings' Degradation Stages for Predictive Maintenance in the Pharmaceutical Industry — Dovile Juodelyte (IT University of Copenhagen); Veronika Cheplygina (ITU); Therese Graversen (IT University of Copenhagen); Philippe Bonnet (IT Univ Copenhagen, Denmark)

RCAD:Real-time Collaborative Anomaly Detection System for Mobile Broadband Networks — Azza H. Ahmed (SimulaMet); Michael Riegler (Simula); Steven Hicks (SimulaMet); Ahmed Elmokashfi (Simula Met)

AntiBenford Subgraphs: Unsupervised Anomaly Detection in Financial Networks — Tianyi Chen (Boston University); Charalampos Tsourakakis (Boston University and ISI Foundation)

One Label on Result Can Reduce Thirty False Anomalies: Augmenting Log-based Anomaly Detection Models with Human Feedback — Tong Jia (Peking University); Yong Yang (Peking University); Ying Li (Peking University); Gang Huang (Peking University); Zhonghai Wu (Peking University)

CMMD: Cross-Metric Multi-Dimensional Root Cause Analysis — Shifu Yan (East China University of Science and Technology); Caihua Shan (microsoft); Wenyi YANG (Microsoft); Dongsheng Li (Microsoft Research Asia); Lili Qiu (The University of Texas at Austin); Bixiong Xu (Microsoft); Jie Tong (Microsoft); Qi Zhang (Microsoft)

Learning Sparse Latent Graph Representations for Anomaly Detection in Multivariate Time Series — Siho Han (Sungkyunkwan University); Simon S Woo (Sungkyunkwan University (SKKU))

User Behavior Pre-training for Online Fraud Detection — Can Liu (Alibaba Group); Yuncong Gao (Institute of Computing Technology, CAS); Li Sun (Alibaba Group); Jinghua Feng (Ailbaba Group); Hao Yang (Alibaba Group); Xiang Ao (Institute of Computing Technology, CAS)

CAT: Beyond Efficient Transformer for Content-Aware Anomaly Detection in Event Sequences — SHENGMING ZHANG (Rutgers University); Yanchi Liu (NEC Labs America); Xuchao Zhang (NEC Labs America); Wei Cheng (NEC Laboratories America); Haifeng Chen (NEC Labs); Hui Xiong (the State University of New Jersey)

BrainNet: Epileptic Wave Detection from SEEG with Hierarchical Graph Diffusion Learning — Junru Chen (Zhejiang University); Yang Yang (Zhejiang University); Tao Yu (Zhejiang University); Yingying Fan (Zhejiang University); Xiaolong Mo (Neuroechos Medical(Shenzhen) Co., Ltd); Carl Yang (Emory University)

Human-in-the-Loop Large-Scale Predictive Maintenance of Workstations — Alexander V Nikitin (Aalto University); Samuel Kaski (Aalto University and University of Manchester)

Room Salon B (Conversation, QA and Other NLP Applications) Session Chairs: Kaize Ding and Xian Li

DocLayNet: A Large Human-annotated Dataset for Document Layout Segmentation — Birgit Pfitzmann (IBM Research); Christoph Auer (IBM Research); Michele Dolfi (IBM Research); Ahmed S Nassar (IBM Research); Peter W J Staar (IBM Research)

COBART: Controlled, Optimized, Bidirectional and Auto-Regressive Transformer for Ad Headline Generation — Yashal S Kanungo (Amazon); Gyanendra Das (Amazon); Pooja A (Amazon); Sumit Negi (Amazon)

Semantic Aware Answer Sentence Selection using Self-Learning based Domain Adaptation — Rajdeep Sarkar (National University of Ireland Galway); Sourav Dutta (Huawei Research Centre); Haytham Assem (Huawei Research); Mihael Arcan (Insight Centre for Data Analytics); John McCrae (National University of Ireland Galway)

Preventing Catastrophic Forgetting in Natural Language Tasks — Sudipta Kar (Amazon); Giuseppe Castellucci (Amazon); Simone Filice (Amazon); Shervin Malmasi (Amazon); Oleg Rokhlenko (Amazon)

ILASR: Privacy-Preserving Incremental Learning for Automatic Speech Recognition at Production Scale — Gopinath Chennupati (Amazon Alexa); Milind Rao (Amazon Alexa); Gurpreet Chadha (Amazon Alexa); Aaron Eakin (Amazon Alexa); Anirudh Raju (Amazon Alexa); Gautam Tiwari (Amazon Alexa); Anit Kumar Sahu (Amazon Alexa AI); Ariya Rastrow (Amazon Alexa); Jasha Droppo (Amazon Alexa); Andy Oberlin (Amazon Alexa); Buddha Nandanoor (Amazon Alexa); Prahalad Venkataramanan (Amazon Alexa); Zheng Wu (Amazon Alexa); Pankaj Sitpure (Amazon Alexa)

Ask to know more: Counterfactual Explanations for Fake Claims — Shih-Chieh Dai (University of Texas at Austin); Yi-Li Hsu (Academia Sinica; National Tsing Hua University); Aiping Xiong (The Pennsylvania State University); Lun-Wei Ku (Academia Sinica)

GradMask: Gradient-Guided Token Masking for Textual Adversarial Example Detection — Han Cheol Moon (Nanyang Technological University); Shafiq Joty (Nanyang Technological University); Xu Chi (Singapore Institute of Manufacturing Technology, A-Star)

Duplex Conversation: Enable Human-like Interaction in Spoken Dialogue System — Ting-En Lin (Alibaba Group); Yuchuan Wu (Alibaba); Fei Huang (Alibaba); Luo Si (); Jian Sun (Alibaba DAMO Academy); Yongbin Li (Alibaba Group)

Personalized Chit-Chat Generation for Recommendation Using External Chat Corpora — Changyu Chen (Renmin University of China); Xiting Wang (Microsoft Research Asia); Xiaoyuan Yi (Microsoft Research Asia); Fangzhao Wu (MSRA); Xing Xie (Microsoft Research Asia); Rui Yan (Peking University)

Room 201 (Graph Learning & Social Network) Session Chairs: Denghui Zhang and Neil Shah

Graph Neural Network Training and Data Tiering — Seung Won Min (University of Illinois at Urbana-Champaign); Kun Wu (University of Illinois at Urbana-Champaign); Mert Hidayetoglu (University of Illinois at Urbana-Champaign); Jinjun Xiong (University at Buffalo); Xiang Song (Amazon); Wen-mei Hwu (NVIDIA Corporation)

Learning Large-scale Subsurface Simulations with a Hybrid Graph Network Simulator — Tailin Wu (Stanford); Qinchen Wang (Stanford); Yinan Zhang (Stanford University); Rex Ying (Stanford University); Kaidi Cao (Stanford University); Rok Sosic (Stanford University); Ridwan Jalali (Saudi Aramco); Hassan Hamam (Saudi Aramco); Marko Maucec (Saudi Aramco); Jure Leskovec (Stanford University)

CS-RAD: Conditional Member Status Refinement and Ability Discovery for Social Network Applications — Yiming Ma (LinkedIn)

Embedding Compression with Hashing for Efficient Representation Learning in Large-Scale Graph — Michael Yeh (Visa Research); Mengting Gu (Visa Research); Yan Zheng (Visa Research); Huiyuan Chen (Visa Research); Javid Ebrahimi (Visa Research); Zhongfang Zhuang (Visa Research); Junpeng Wang (Visa Research); Liang Wang (Visa Research); Wei Zhang (Visa Research)

TAG: Toward Accurate Social Media Content Tagging with a Concept Graph — Jiuding Yang (University of Alberta); Weidong Guo (Tencent); Bang Liu (University of Montreal); Yakun Yu (University of Alberta); Chaoyue Wang (Tencent); Jinwen Luo (Tencent); Linglong Kong (University of Alberta); Di Niu (University of Alberta); Zhen Wen (Tencent Technology (Shenzhen) Co., Ltd)

TwHIN: Embedding the Twitter Heterogeneous Information Network for Personalized Recommendation — Ahmed El-Kishky (Twitter); Thomas Markovich (Twitter); Serim Park (Twitter); Chetan Verma (Twitter); Baekjin Kim (Twitter); Ramy Eskander (Twitter); Yury Malkov (Twitter); Frank Portman (Twitter); Sofia Samaniego (Twitter); Ying Xiao (Twitter); Aria Haghighi (Twitter)

DP-GAT: A Framework for Image-based Disease Progression Prediction — Alex Foo (National University of Singapore); Wynne Hsu (National University of Singapore); Mong Li Lee (National University of Singapore); Gavin S Tan (Singapore eye research institute)

Distributed Hybrid CPU and GPU training for Graph Neural Networks on Billion-Scale Heterogeneous Graphs — Da Zheng (Amazon); Xiang Song (Amazon); Chengru Yang (Amazon); Dominique LaSalle (NVIDIA Corporation); George Karypis (Amazon)

Generalizable floorplanner through Corner Block List representation and Hypergraph embedding — Mohammad Amini (Huawei Noah's Ark Lab); Zhanguang Zhang (Huawei); Surya Penmetsa (Huawei Noah's Ark Lab); Yingxue Zhang (Huawei Technologies Canada); Jianye Hao (Huawei Noah's Ark Lab); Wulong Liu (Huawei Noah's Ark Lab)

Multi-objective Optimization of Notifications Using Offline Reinforcement Learning — Prakruthi Prabhakar (LinkedIn Corporation); Yiping Yuan (LinkedIn); Guangyu Yang (LinkedIn Corporation); Wensheng Sun (LinkedIn Corporation); Ajith Muralidharan (LINKEDIN CORPORATION)

Graph Neural Networks for Multimodal Single-Cell Data Integration — Hongzhi Wen (Michigan State University); Jiayuan Ding (Michigan State University); Wei Jin (Michigan State University); Yuying Xie (Michigan State University); Jiliang Tang (Michigan State University)

Room 202B (Health, Business, Geo and Other Real-World Applications) Session Chairs: Yifan Ethan Xu and Sam Han

What is the Most Effective Intervention to Increase Job Retention for this Disabled Worker? — Ha Xuan Tran (University of South Australia); Thuc Duy Le (University of South Australia); Jiuyong Li (University of South Australia); Lin Liu (University of South Australia); Jixue Liu (University of South Australia); Yanchang Zhao (CSIRO); Tony Waters (Maxima Training Group (Aust) Ltd.)

HiPAL: A Deep Framework for Physician Burnout Prediction Using Activity Logs in Electronic Health Records — Hanyang Liu (Washington University in St Louis); Sunny S. Lou (Washington University In St Louis); Benjamin C. Warner (Washington University In St Louis); Derek R. Harford (Washington University In St Louis); Thomas Kannampallil (Washington University in St. Louis); Chenyang Lu (Washington University in St. Louis)

Solar: Science of Entity Loss Attribution — Anshuman Mourya (Amazon); Prateek Sircar (Amazon); Anirban Majumder (Amazon); Deepak Gupta (Amazon)

A Process-Aware Decision Support System for Business Processes — Prerna Agarwal (IBM Research); Buyu Gao (IBM Research - China); Siyu Huo (IBM Research); Prabhat Reddy (IBM Research); Sampath Dechu (IBM Research); Yazan Obeidi (IBM); Vinod Muthusamy (IBM Research); Vatche Isahagian (IBM Research); Sebastian Carbajales (IBM)

4SDrug: Symptom-based Set-to-set Small and Safe Drug Recommendation — Yanchao Tan (Zhejiang University); Chengjun Kong (National University of Singapore); Leisheng Yu (Emory University); Pan Li (Purdue University); Chaochao Chen (Zhejiang University); Xiaolin Zheng (Zhejiang University); Vicki Hertzberg (Emory University); Carl Yang (Emory University)

Multi-task Envisioning Transformer-based Autoencoder for Corporate Credit Rating Migration Early Prediction — Han Yue (Brandeis University); Steve Xia (Guardian Life Insurance); Hongfu Liu (Brandeis University)

Counterfactual Phenotyping with Censored Time-to-Events — Chirag Nagpal (Carnegie Mellon University); Mononito Goswami (Carnegie Mellon University); Keith A Dufendach (University of Pittsburgh Medical Center); Artur Dubrawski (CMU)

Characterizing Covid waves via spatio-temporal decomposition — Kevin Quinn (Boston University); Evimaria Terzi (Boston University); Mark Crovella (Boston University)

Towards reliable detection of dielectric hotspots in thermal images of the underground distribution network — François Miralles (Hydro-Québec); Luc Cauchon (Hydro-Québec); Marc-Andre Magnan (Hydro-Québec); François Grégoire (Hydro-Québec); Mouhamadou Makhtar Dione (Hydro-Québec); Arnaud Zinflou (Hydro-Québec)

SoccerCPD: Formation and Role Change-Point Detection in Soccer Matches Using Spatiotemporal Tracking Data — Hyunsung Kim (Fitogether Inc.); Bit Kim (Fitogether Inc.); Dongwook Chung (Fitogether Inc.); Jinsung Yoon (Fitogether Inc.); Sang-Ki Ko (Kangwon National University)

Vexation-Aware Active Learning for On-Menu Restaurant Dish Availability — Jean-François Kagy (Google); Flip Korn (Google, USA); Afshin Rostamizadeh (Google Research); Chris Welty (Google)

A/B Testing Intuition Busters: Common Misunderstandings in Online Controlled Experiments — Ronny Kohavi (Kohavi); Alex Deng (Airbnb); Lukas Vermeer (Vista)

ADS PAPER SHOWCASE: Thursday, August 18, 1:30 pM-3:30 PM

Room Salon A (Multi-Modal and Multilingual knowledge & Data Mining) Session Chairs: Amey Barapatre and Dawei Zhou

The Good, the Bad, and the Outliers: A Testing Framework for Decision Optimization Model Learning — Orit Davidovich (IBM); Gheorghe-Teodor Bercea (IBM Research); Segev Wasserkrug (IBM Research)

Design Domain Specific Neural Network via Symbolic Testing — Hui Li (Ant Financial); Xing Fu (Ant Group); Ruofan Wu (Ant Group); Jinyu Xu (Ant group); Kai Xiao (Ant Group); Weiqiang Wang (Ant Group); SHUAI CHEN (Ant Financial); Leilei Shi (Ant Group); Tao Xiong (Ant Group); Yuan Qi (Ant Financial Services Group)

Seq2Event: Learning the Language of Soccer using Transformer-based Match Event Prediction — Ian Simpson (University of Southampton); Ryan J Beal (University of Southampton); Duncan Locke (Rugby Football Union); Timothy J Norman (University of Southampton)

A Fully Differentiable Set Autoencoder — Nikita Janakarajan (ETH Zürich); Jannis Born (IBM Research); Matteo Manica (IBM Research)

Temporal Multimodal Multivariate Learning — Hyoshin Park (North Carolina A&T State University); Justice Darko (North Carolina A&T State University); Niharika Deshpande (North Carolina A&T State University); Venktesh Pandey (North Carolina A&T State University); Hui Su (Jet Propulsion Laboratory); Masahiro Ono (JPL); Dedrick Barkley (North Carolina A&T State University); Larkin Folsom (North Carolina A&T State University); Derek Posselt (Jet Propulsion Laboratory); Steve Chien (Jet Propulsion Laboratory, California Institute of Technology)

Alexa Teacher Model: Pretraining and Distilling Multi-Billion-Parameter Encoders for Natural Language Understanding Systems — Jack FitzGerald (Amazon Alexa Artificial Intelligence); Shankar Ananthakrishnan (Amazon); Konstantine Arkoudas (Amazon); Davide Bernardi (Amazon); Abhishek Bhagia (Amazon); Claudio Delli Bovi (Amazon); Jin Cao (Amazon Inc); Rakesh Chada (Amazon); Amit Chauhan (Amazon); Luoxin Chen (Amazon); Anurag Dwarakanath (Amazon); Satyam Dwivedi (Amazon); Turan Gojayev (Amazon); Karthik Gopalakrishnan (Amazon Alexa AI); Thomas Gueudre (Amazon); Dilek Z Hakkani-Tur (Amazon Alexa AI); Wael Hamza (Amazon); Jonathan J Hüser (Amazon Alexa); Kevin Jose (Amazon); Haidar Khan (Amazon); Beiye Liu (Amazon); Jianhua Lu (Amazon Alexa AI); Alessandro Manzotti (Amazon); Pradeep Natarajan (Amazon.com Inc.); Karolina Owczarzak (Amazon); Gokmen Oz (Amazon); Enrico Palumbo (Amazon); Charith Peris (Amazon); Chandana Prakash (Amazon); Stephen Rawls (Amazon); Andy Rosenbaum (Amazon); Anjali Shenoy (Amazon); Saleh Soltan (Amazon); Mukund Sridhar (Amazon); Lizhen Tan (Amazon); Fabian Triefenbach (Amazon); Pan Wei (Amazon); Haiyang Yu (Amazon); Shuai Zheng (Amazon Web Services); Gokhan Tur (Amazon Alexa AI); Prem Natarajan (Amazon.com Inc.)

TaxoTrans: Taxonomy-Guided Entity Translation — Zhuliu Li (LinkedIn) , Yiming Wang (LinkedIn), Xiao Yan (LinkedIn), Weizhi Meng (LinkedIn), Yanen Li (LinkedIn), Jaewon Yang (LinkedIn)

Perioperative Predictions with Interpretable Latent Representation — Bing Xue (Washington University in St. Louis); York Jiao (Washington University in Saint Louis); Thomas Kannampallil (Washington University in St. Louis); Bradley A Fritz (Washington University in St. Louis); Christopher King (Washington University in St. Louis); Joanna Abraham (Washington University in St. Louis); Michael Avidan (Washington University in St. Louis); Chenyang Lu (Washington University in St. Louis)

Precise Mobility Intervention for Epidemic Control Using Unobservable Information via Deep Reinforcement Learning — Tao Feng (Tsinghua University); Tong Xia (University of Cambridge); Xiaochen Fan (Tsinghua University); Huandong Wang (Tsinghua University); Zefang Zong (Tsinghua University); Yong Li (Tsinghua University)

Room Salon B (Recommendation & Contextualization) Session Chairs: Charles Liu and Menglling Feng

Surrogate for Long-Term User Experience in Recommender Systems — Yuyan Wang (Google Brain); Mohit Sharma (University of Minnesota); Sriraj Badam (Google); Can Xu (Google); Qian Sun (Google); Lee Richardson (Google); Lisa Chung (Google); Ed H. Chi (Google); Minmin Chen (Google)

Reinforcement Learning in the Wild: Scalable RL Dispatching Algorithm Deployed in Ridehailing Marketplace — Soheil Sadeghi Eshkevari (DiDi Labs); Xiaocheng Tang (DiDi AI Labs); Zhiwei Qin (DiDi AI Labs); Jinhan Mei (DiDi Global); Cheng Zhang (Didi Chuxing); Qianying Meng (DiDi Global); Jia Xu (DiDi Global)

Generalized Deep Mixed Models — Jun Shi (LinkedIn); Chengming Jiang (LinkedIn Corporation); Aman Gupta (LinkedIn); Mingzhou Zhou (LinkedIn Corporation); Yunbo Ouyang (LinkedIn Corporation); Charles Xiao (LinkedIn); Qingquan Song (LinkedIn); Alice Wu (LinkedIn Corporation); Haichao Wei (LinkedIn Corporation); Huiji Gao (LinkedIn)

Automatically Discovering User Consumption Intents in Meituan — Yinfeng Li (Tsinghua University); Chen Gao (Tsinghua University); Xiaoyi Du (Meituan); HUAZHOU WEI (Meituan); Hengliang Luo (Meituan); Depeng Jin (Tsinghua University); Yong Li (Tsinghua University)

Automatic Generation of Product-Image Sequence in E-commerce — Xiaochuan Fan (JD.com); Chi Zhang (JD.com); Yong Yang (JD); Yue Shang (JD.com); xueying zhang (jd.com silicon valley research center); Zhen He (JD); Xiao Yun (JD.com); Bo Long (JD.com); Lingfei Wu (JD.COM Silicon Valley Research Center)

PinnerFormer: Sequence Modeling for User Representation at Pinterest — Nikil Pancha (Pinterest, Inc.); Andrew H Zhai (Pinterest, Inc.); Jure Leskovec (Stanford University); Charles Rosenberg (Pinterest)

ItemSage: Learning Product Embeddings for Shopping Recommendations at Pinterest — Paul D Baltescu (Pinterest); Paul Baltescu (Pinterest); Haoyu Chen (Pinterest); Nikil Pancha (Pinterest, Inc.); Andrew H Zhai (Pinterest, Inc.); Jure Leskovec (Stanford University); Charles Rosenberg (Pinterest)

ASPIRE: Air Shipping Recommendation for E-commerce Products via Causal Inference Framework — Abhirup Mondal (Amazon); Anirban Majumder (Amazon); Vineet Chaoji (Amazon)

Recommendation in offline stores: A gamification approach for learning the spatiotemporal representation of indoor shopping — JongKyung Shin (Ulsan National Institute of Science and Technology); Changhun Lee (UNIST); Chiehyeon Lim (Ulsan National Institute of Science and Technology); Yunmo Shin (Retailtech co., Ltd.); Junseok Lim (Retailtech co., Ltd.)

ROI-Constrained Bidding via Curriculum-Guided Bayesian Reinforcement Learning — Haozhe Wang (ShanghaiTech University); Chao Du (Alibaba Group); Panyan Fang (Alibaba Group); Shuo Yuan (Alibaba Group); Xuming He (ShanghaiTech University); Liang Wang (Alibaba group); Bo Zheng (Alibaba Group)

NxtPost: User to Post Recommendations in Facebook Groups — Fedor Borisyuk (Facebook); Kaushik Rangadurai (Facebook); Yiqun Liu (Facebook); Siddarth Malreddy (Facebook); Xiaoyi Liu (Facebook)

Room 201 (Scalable, Distributed Systems & Trustable AI) Session Chairs: Tianxiang Zhao and Dongkuan Xu

Collborative Intelligence Orchestration: Inconsistency-Based Fusion of Semi-Supervised Learning and Active Learning — Jiannan Guo (Zhejiang University); Yangyang Kang (Alibaba Group); Yu Duan (Alibaba Group); Xiaozhong Liu (Indiana University Bloomington); Siliang Tang (Zhejiang University); Wenqiao Zhang (Zhejiang University); Kun Kuang (Zhejiang University); Changlong Sun (Alibaba Group); Fei Wu (Zhejiang University, China)

AutoShard: Automated Embedding Table Sharding for Recommender Systems — Daochen Zha (Rice University); Louis Feng (Meta); Bhargav Bhushanam (Facebook); Dhruv Choudhary (Facebook Inc.); Jade Nie (Meta); Yuandong Tian (Facebook); Jay Chae (Meta); Yinbin Ma (Meta Platforms, Inc.); Arun Kejariwal (Facebook Inc.); Xia Hu (Rice University)

Profiling Deep Learning Workloads at Scale using Amazon SageMaker — Nathalie Rauschmayr (Amazon); Sami Kama (Amazon); Muhyun Kim (AWS); Miyoung Choi (Amazon); Krishnaram Kenthapadi (Fiddler AI)

Fed-LTD: Towards Cross-Platform Ride Hailing via Federated Learning to Dispatch — Yansheng Wang (Beihang University); Yongxin Tong (Beihang University); Zimu Zhou (Singapore Management University); Ziyao Ren (Beihang University); Yi Xu (Beihang University); Guobin Wu (Didichuxing Inc.); Weifeng Lv (Beihang University)

Optimizing Long-Term Efficiency and Fairness in Ride-Hailing via Joint Order Dispatching and Driver Repositioning — Jiahui Sun (Shanghai Jiao Tong University); Haiming Jin (Shanghai Jiao Tong University); Zhaoxing Yang (Shanghai Jiao Tong University); Lu Su (Purdue University); Xinbing Wang (Shanghai Jiao Tong University)

A Meta Reinforcement Learning Approach for Predictive Autoscaling In the Cloud — Siqiao Xue (Ant Group); Chao Qu (Ant Financial Services Group); Xiaoming Shi (Ant Group); Cong Liao (Ant Group); Shiyi Zhu (Ant Group); Xiaoyu Tan (Ant Group); Lin-Tao Ma (Ant Group); Shiyu Wang (antgroup); Shijun Wang (Ant Group); hu yun (ant group); Lei Lei (Ant Group); YangFei Zheng (antgroup); Jianguo Li (Ant Group); James Y Zhang (Ant Group)

Sparx: Distributed Outlier Detection at Scale — Sean Zhang (Carnegie Mellon University); Varun Ursekar (Carnegie Mellon University); Leman Akoglu (CMU)

Task-optimized User Clustering based on Mobile App Usage for Cold-start Recommendations — Bulou Liu (Tsinghua University); Bing Bai (Tencent); Weibang Xie (Tencent); Yiwen Guo (Independent Researcher); Hao Chen (UC Davis)

Real-Time Rideshare Driver Supply Values using Online Reinforcement Learning — Benjamin Han (Lyft); Hyungjun Lee (Snapchat); Sebastien Martin (Kellogg School of Management)

Amazon SageMaker Model Monitor: A System for Real-Time Insights into Deployed Machine Learning Models — David Nigenda (Amazon Web Services); Zohar Karnin (Amazon); Muhammad Bilal Zafar (Amazon Web Services); Raghu Ramesha (Amazon Web Services); Alan Tan (Amazon Web Services); Michele Donini (Amazon); Krishnaram Kenthapadi (Fiddler AI)

Interpretable Personalized Experimentation — Han Wu (Stanford University); Sarah Tan (Facebook); WEIWEI LI (Meta); Mia R Garrard (Facebook); Adam Obeng (Meta); Drew Dimmery (Facebook); Shaun Singh (Facebook); Hanson Wang (Facebook); Daniel Jiang (Facebook); Eytan Bakshy (Meta)

CERAM: Coverage Expansion for Recommendations by Associating Discarded Models — Yoshiki Matsune (Ritsumeikan University); Kota Tsubouchi (Yahoo Japan Corporation); Nobuhiko Nishio (Ritsumeikan University)

Room 202B (Search & Information Retrieval) Session Chairs: Jiyun Luo and Pan Du

Learning Supplementary NLP features for CTR Prediction in Sponsored Search — Dong Wang (Microsoft); Shaoguang Yan (Microsoft); Yunqing Xia (Microsoft); Kave Salamatian (University of Savoie); Weiwei Deng (Microsoft); Qi Zhang (Microsoft)

Type Linking for Query Understanding and Semantic Search — Georgios Stoilos (Huawei Technologies UK); Nikos Papasarantopoulos (Huawei Technologies); Pavlos Vougiouklis (Huawei Technologies); Patrik Bansky (Huawei Technologies)

Amazon StyleSnap: A Visual Search System for Fashion and Home — Ming Du (Amazon); Arnau Ramisa (Amazon); Amit Kumar K C (Amazon); Sampath Chanda (Amazon); Mengjiao Wang (Amazon); Neelakandan Rajesh (Amazon); Shasha Li (Amazon); Yingchuan Hu (Amazon); Tao Zhou (Amazon Inc.); Nagashri Lakshminarayana (Amazon); Son Tran (Amazon A9); Douglas R Gray (Amazon)

Scale Calibration of Deep Ranking Models — Le Yan (Google); Zhen Qin (Google); Xuanhui Wang (Google); Michael Bendersky (Google); Marc Najork (Google)

Dynamic Graph Segmentation For Deep Graph Neural Networks — Johan Zhi Kang Kok (Grab); Suwei Yang (National University of Singapore); Suriya Venkatesan (Grab); Sienyi Tan (Grab); Feng Cheng (Grab); Bingsheng He (National University of Singapore)

CommerceMM: Large-Scale Commerce MultiModal Representation Learning with Omni Retrieval — Licheng Yu (Facebook); Jun Chen (Facebook); Animesh Sinha (Facebook AI); Mengjiao Wang (Facebook); Hugo Chen (Facebook); Tamara Berg (Facebook AI Research); Ning Zhang (Facebook)

Structure-Aware Multilingual Language Model: Leveraging Graph Structures for Search Relevance in E-commerce — Nurendra Choudhary (Virginia Tech); Nikhil Rao (Amazon); Karthik Subbian (Amazon); Chandan K Reddy (Virginia Tech)

Semantic Retrieval at Walmart — Alessandro Magnani (); Feng Liu (Walmart); Suthee chaidaroon (Walmart); Praveen Reddy Suram (Walmart); Sachin Yadav (Walmart); Ajit Puthenputhussery (Walmart Global Tech); Tony Lee (Walmart); Sijie Chen (Walmart); Ciya Liao (Walmart Global Technology); Min Xie (Instacart); Anirudh Kashi (Usc)

Septor: Seismic Depth Estimation using Hierarchical Neural Network — Mohammad Ashraf Siddiquee (University of New Mexico); Vinicius Souza (Pontificia Universidade Catolica do Parana (PUCR)); Abdullah Mueen (University of New Mexico)

Learning Backward Compatible Embeddings — Weihua Hu (Stanford University); Rajas Bansal (Stanford University); Kaidi Cao (Stanford University); Nikhil Rao (Amazon); Karthik Subbian (Amazon); Jure Leskovec (Stanford University)

Adaptive Multi-view Rule Discovery for Weakly-Supervised Compatible Products Prediction — Rongzhi Zhang (Georgia Institution of Technology); Rebecca West (The Home Depot); Xiquan Cui (Homedepot); Chao Zhang (Georgia Institute of Technology)

All Other Accepted Papers

Downscaling Earth System Models with Deep Learning — Sungwon Park (KAIST); Tung Duong Mai (KAIST); Karandeep Singh (Institute for Basic Science); Arjun Babu Nellikkattil (IBS Center for Climate Physics, Pusan National University); Elke CE Zeller (IBS Center for Climate Physics); Meeyoung Cha (Institute for Basic Science)

Generative Adversarial Networks Enhanced Pre-training for Insufficient Electronic Health Records Modeling — Houxing Ren (Beihang University); Jingyuan Wang (Beihang University); Wayne Xin Zhao (Renmin University of China)

POLARIS: A Geographic Pre-trained Model and its Applications in Baidu Maps — Jizhou Huang (Baidu); Haifeng Wang (Baidu); Yibo Sun (Baidu); yunsheng shi (baidu); Zhengjie Huang (Baidu); An Zhuo (Baidu); Shikun Feng (Baidu)

G2NET: A General Geography-Aware Representation Network for Hotel Search Ranking — Jia Xu (Guangxi University); Fei Xiong (Alibaba Group); Zulong Chen (Alibaba); Mingyuan Tao (Alibaba Group); Liangyue Li (Alibaba Group); Quan Lu (Alibaba Group)

Service Time Prediction for Delivery Tasks via Spatial Meta-Learning — Sijie Ruan (Xidian University); Cheng Long (Nanyang Technological University); Zhipeng Ma (Southwest Jiaotong University); Jie Bao (JD Finance); Tianfu He (Harbin Institute of Technology); Ruiyuan Li (Chongqing University); Yiheng Chen (JD Logistics); Shengnan Wu (JD Logistics); Yu Zheng (JD)

Precision CityShield Against Hazardous Chemicals Threats via Location Mining and Self-supervised Learning — Jiahao Ji (Beihang University); Jingyuan Wang (Beihang University); Junjie Wu (Beihang University); Boyang Han (JD Intelligent Cities Research); Junbo Zhang (JD Intelligent Cities Research); Yu Zheng (JD)

DuIVA: An Intelligent Voice Assistant for Hands-free and Eyes-free Voice Interaction with Baidu Maps App — Jizhou Huang (Baidu); Haifeng Wang (Baidu); Shiqiang Ding (BAIDU); Shaolei Wang (Baidu)

Applying Deep Learning Based Probabilistic Forecasting to Food Preparation Time for On-Demand Delivery Service — Chengliang Gao (Meituan); Fan Zhang (Meituan); Yue Zhou (Meituan); Ronggen Feng (Meituan); Qiang Ru (Meituan); Kaigui Bian (Peking University); Renqing He (Meituan-Dianping Group); Zhizhao Sun (Meituan-Dianping Group)

RBG: Hierarchically Solving Large-Scale Routing Problems in Logistic Systems via Reinforcement Learning — Zefang Zong (Tsinghua University); Hansen Wang (Tsinghua University); wang jingwei (Tsinghua); Meng Zheng (Hitachi); Yong Li (Tsinghua University)

Felicitas: Federated Learning in Distributed Cross Device Collaborative Frameworks — QI ZHANG (USTC); tiancheng wu (huawei); Zhou Peichen (Huawei Technologies Co., Ltd.); shan zhou (Huawei Technologies Co. Ltd); xiulang jin (huawei); Yuan Yang (Huawei)

Multi-Task Fusion via Reinforcement Learning for Long-Term User Satisfaction in Recommender Systems — Qihua Zhang (Tencent); Junning Liu (Tencent Inc.); Yuzhuo Dai (Tencent); Kunlun Zheng (Tencent); Fan Huang (Tencent); Yifan Yuan (Tencent); Xianfeng Tan (Tencent); Yiyan Qi (Tencent)

Causal Inference-Based Root Cause Analysis for Online Service Systems with Intervention Recognition — Mingjie Li (Tsinghua University); Zeyan Li (Tsinghua University); Kanglin Yin (BizSeer); Xiaohui Nie (BizSeer); Wenchi Zhang (BizSeer); Kaixin Sui (Bizseer Technology); Dan Pei (Tsinghua University)

Three-Stage Root Cause Analysis for Logistics Time Efficiency via Explainable Machine Learning — Shiqi Hao (JD Logistics); Yang Liu (JD Logistics); Yu Wang (JD Logistics); Yuan Wang (JD Logistics); Wenming Zhe (JD Logistics)

CONFLUX: A Request-level Fusion Framework for Impression Allocation via Cascade Distillation — XiaoYu Wang (University of Science and Technology of China); bin tan (tencent); Guo Yonghui (tencent); Tao Yang (Tencent); Dongbo Huang (Tencent); Lan Xu (Tencent); Nikolaos Freris (University of Science and Technology of China); Hao Zhou (University of Science and Technology of China); Xiangyang Li (University of Science and Technology of China)

Arbitrary Distribution Modeling with Censorship in Real-Time Bidding Advertising — Xu Li (FreeWheel); Michelle Zhang (Northwestern University)

Interpreting Trajectories from Multiple Views: A Hierarchical Self-Attention Network for Estimating the Time of Arrival — Zebin Chen (South China University of Technology); Xiaolin Xiao (South China University of Technology); Yuejiao Gong (South China University of Technology); Jun Fang (Didi Chuxing); Nan Ma (Didi Chuxing); Hua Chai (Didi Chuxing); Zhiguang Cao (Singapore Institute of Manufacturing Technology)

Retrieval-Based Gradient Boosting Decision Trees for Disease Risk Assessment — Handong Ma (Shanghai Jiaotong University); Jiahang Cao (Shanghai Jiao Tong University); Yuchen Fang (Shanghai Jiao Tong University); Weinan Zhang (Shanghai Jiao Tong University); Yong Yu (Shanghai Jiao Tong University); Wenbo Sheng (Shanghai Synyi Medical Technology Co. Ltd); Shaodian Zhang (Shanghai Synyi Medical Technology Co. Ltd)

EXTR: Click-Through Rate Prediction with Externalities in E-Commerce Sponsored Search — Chi Chen (Alibaba); Hui Chen (Tsinghua University); Kangzhi Zhao (Alibaba Group); Junsheng Zhou (Alibaba Group); Li He (Alibaba Group); Hongbo Deng (Alibaba Group); Jian Xu (Alibaba Group); Bo Zheng (Alibaba Group); Yong Zhang (" Tsinghua University, China"); Chunxiao Xing (Tsinghua University)

Lion: A GPU-Accelerated Online Serving System for Web-Scale Recommendation at Baidu — Hao Liu (HKUST); Qian Gao (Baidu, Inc); Xiaochao Liao (Baidu Inc.); Guangxing Chen (Baidu, Inc.); Hao Xiong (Baidu, Inc.); Silin Ren (Baidu Inc.); Guobao Yang (Baidu, Inc.); Zhiwei Zha (Baidu, Inc.)

EGM: Enhanced Graph-based Model for Large-scale Video Advertisement Search — Tan Yu (Baidu Research); Jie Liu (BaiDu); yi yang (Baidu); YI LI (Baidu); Hongliang Fei (Baidu Research); Ping Li (Baidu Research)

Mixture of Virtual-Kernel Experts for Multi-Objective User Profile Modeling — Zhenhui Xu (Tencent Inc.); Meng Zhao (Tencent Inc.); Liqun Liu (Tencent Inc.); Lei Xiao (Tencent); Xiaopeng Zhang (Tencent); Bifeng Zhang (Tencent Inc.)

A Stochastic Shortest Path Algorithm for Optimizing Spaced Repetition Scheduling — Junyao Ye (Harbin Institute of Technology, Shenzhen); Jingyong Su (Harbin Institute of Technology, Shenzhen); Yilong Cao (Maimemo, Inc.)

A Logic Aware Neural Generation Method for Explainable Data-to-text — Xiexiong Lin (ant-fintech); Huaisong Li (Ant Group); Tao Huang (Antgroup); Feng Wang (ant-fintech); Taifeng Wang (Ant Group); Tianyi Zhang (Alipay (Hangzhou) Information & Technology Co., Ltd); Fuzhen Zhuang (Institute of Artificial Intelligence, Beihang University); Linlin Chao (Ant Financial Services Group)

AutoFAS: Automatic Feature and Architecture Selection for Pre-Ranking System — Xiang Li (Meituan); Xiaojiang Zhou (Meituan); Yao Xiao (Meituan); Peihao Huang (Meituan); Dayao Chen (Meituan); Sheng Chen (Meituan); Yunsen Xian (Meituan)

Graph2Route: A Dynamic Spatial-Temporal Graph Neural Network for Pick-up and Delivery Route Prediction — Haomin Wen (Beijing Jiaotong University); Youfang Lin (Beijing Jiaotong University); Xiaowei Mao (Beijing Jiaotong University); Fan Wu (Cainiao Network); Yiji Zhao (Beijing JiaoTong University); Haochen Wang (BeijingJiaotong University); Jianbin Zheng (Cainiao Network); lixia wu (Cainiao Ltd.); Haoyuan Hu (Cainiao Network); Huaiyu Wan (Beijing Jiaotong University)

Packet Representation Learning for Traffic Classification — Xuying Meng (Chinese Academy of Sciences); Yequan Wang (ICT, CAS); Runxin Ma (Chinese Academy of Sciences); Haitong Luo (Chinese Academy of Sciences); Xiang Li (Alibaba Group); Yujun Zhang (Chinese Academy of Sciences)

No One Left Behind: Inclusive Federated Learning over Heterogeneous Devices — Ruixuan Liu (Renmin University of China); Fangzhao Wu (MSRA); Chuhan Wu (Tsinghua University); Yanlin Wang (Microsoft Research Asia); Lingjuan Lyu (Sony AI); Hong Chen (“ Renmin University, China”); Xing Xie (Microsoft Research Asia)

ReprBERT: Distilling BERT to an Efficient Representation-Based Relevance Model for E-Commerce — Shaowei Yao (Alibaba Group); Jiwei Tan (Alibaba Group); Xi Chen (Alibaba Group); Juhao Zhang (Alibaba); Xiaoyi Zeng (Alibaba Group); Keping Yang (Alibaba)

Self-Supervised Augmentation and Generation for Multi-lingual Text Advertisements at Bing — Xiaoyu Kou (Microsoft); Tianqi Zhao (Microsoft); Fan Zhang (Microsoft); Song Li (Microsoft); Qi Zhang (Microsoft)

Analyzing Online Transaction Networks with Network Motifs — Jiawei Jiang (Wuhan University); Yusong Hu (Tencent Inc.); Xiaosen Li (Tencent Inc.); Wen Ouyang (Tencent Inc.); Zhitao Wang (Tencent Inc.); Fangcheng Fu (Peking University); Bin Cui (Peking University)

Combo-Fashion: Fashion Clothes Matching CTR Prediction with Item History — Chenxu Zhu (Shanghai Jiao Tong University); Peng Du (Alibaba); Weinan Zhang (Shanghai Jiao Tong University); Yong Yu (Shanghai Jiao Tong University); Yang Cao (Vision & Beauty Team, Alibaba Group)

User-tag Profile Modeling in Recommendation System via Contrast Weighted Tag Masking — Chenxu Zhu (Shanghai Jiao Tong University); Peng Du (Alibaba); Xianghui Zhu (SJTU); Weinan Zhang (Shanghai Jiao Tong University); Yong Yu (Shanghai Jiao Tong University); Yang Cao (Vision & Beauty Team, Alibaba Group)

EdgeWatch: Collaborative Investigation of Data Integrity at the Edge based on Blockchain — BO LI (Swinburne University of Technology); Qiang He (Swinburne University of Technology); Liang Yuan (Swinburne University of Technology); Feifei Chen (Deakin University); Lingjuan Lyu (Sony AI); Yun Yang (Swinburne University of Technology)

Unsupervised Learning Style Classification for Learning Path Generation in Online Education Platforms — Zhicheng He (Huawei Noah’s Ark Lab); Wei Xia (Huawei Noah’s Ark Lab); KAI DONG (huawei); Huifeng Guo (Huawei Noah’s Ark Lab); Ruiming Tang (Huawei Noah’s Ark Lab); dingyin xia (huawei); Rui Zhang (ruizhang.info)

COSSUM: Towards Conversation-Oriented StructuredSummarization for Automatic Medical Insurance Assessment — Sheng Xu (Peking University); Xiaojun Wan (Peking University); Sen Hu (Ant Group); Mengdi Zhou (Ant Group); Teng Xu (Ant Group); Hongbin Wang (Ant Group); Haitao Mi (Ant Group)

FedAttack: Effective and Covert Poisoning Attack on Federated Recommendation via Hard Sampling — Chuhan Wu (Tsinghua University); Fangzhao Wu (MSRA); Tao Qi (Tsinghua University); Yongfeng Huang (Tsinghua University); Xing Xie (Microsoft Research Asia)

Training Large-Scale News Recommenders with Pretrained Language Models in the Loop — Shitao Xiao (BUPT); Zheng Liu (MSRA); Yingxia Shao (BUPT); Tao Di (microsoft); Fangzhao Wu (Microsoft Research Asia); Bhuvan Middha (Microsoft); Xing Xie (Microsoft Research Asia)

Graph Attention Multi-Layer Perceptron — Wentao Zhang (Peking University); Ziqi Yin (BeiJing Institute of Technology); Zeang Sheng (Peking University); Yang Li (Peking University); wen ouyang (tencent); Xiaosen Li (Tencent Inc.); Yangyu Tao (Tencent); Zhi Yang (Peking University); Bin Cui (Peking University)

Intelligent Request Strategy Design in Recommender System — Xufeng Qian (Alibaba Group); Yue Xu (Alibaba Group); Fuyu Lv (Alibaba Group); Shengyu Zhang (Zhejiang University); Ziwen Jiang (Alibaba); Qingwen Liu (Alibaba Group); Xiaoyi Zeng (Alibaba Group); Tat-Seng Chua (National university of Singapore); Fei Wu (Zhejiang University, China)

Medical Symptom Detection in Intelligent Pre-Consultation using Bi-directional Hard-Negative Noise Contrastive Estimation — Shiwei Zhang (Tencent Jarvis Lab); JiChao Sun (Tencent Jarvis Lab); Yu Huang (Tencent Jarvis Lab); Xueqi Ding (Tencent); Yefeng Zheng (Tencent)

Contrastive Cross-domain Recommendation in Matching — Ruobing Xie (WeChat Search Application Department, Tencent); Qi Liu (Tencent); Liangdong Wang (WeChat, Tencent); Shukai Liu (Tencent); Bo Zhang (WeChat Search Application Department, Tencent); Leyu Lin (WeChat Search Application Department, Tencent)

Feature-aware Diversified Re-ranking with Disentangled Representations for Relevant Recommendation — Zihan Lin (Renmin University of China); Hui Wang (Renmin University of China); Jingshu Mao (Kuaishou Inc); Wayne Xin Zhao (Renmin University of China); Cheng Wang (Kuaishou Inc); Peng Jiang (Kuaishou Inc.); Ji-Rong Wen (Renmin University of China)

JiuZhang: A Chinese Pre-trained Language Model for Mathematical Problem Understanding — Wayne Xin Zhao (Renmin University of China); Kun Zhou (Renmin University of China); Zheng Gong (Renming University of China); Beichen Zhang (Renmin University of China); Yuanhang Zhou (Renmin University of China); Jing Sha (iFLYTEK Research); Zhigang Chen (iFLYTEK CO., LTD); Shijin WANG (State Key Laboratory of Cognitive Intelligence); Cong Liu (iFLYTEK Research); Ji-Rong Wen (Renmin University of China)

Regional-Local Adversarially Learned One-Class Classifier Anomalous Sound Detection in Global Long-Term Space — Yu Sha (Xidian University, Frankfurt Institute for Advanced Studies); Faber Johannes (Frankfurt Institute for Advanced Studies); Shuiping Gou (Xidian University); Bo Liu (Xidian University); Wei Li (Frankfurt Institute for Advanced Studies); Stefan Schramm (Frankfurt Institute for Advanced Studies); Horst Stoecker (Frankfurt Institute for Advanced Studies); Thomas Steckenreiter (SAMSON AG); Domagoj Vnucec (SAMSON AG); Nadine Wetzstein (SAMSON AG); Andreas Widl (SAMSON AG); Kai Zhou (Frankfurt Institute for Advanced Studies)

A Tuning-free Framework for Exploiting Pre-trained Language Models in Knowledge Grounded Dialogue Generation — Jifan Yu (Tsinghua University), Xiaohan Zhang (Tsinghua University & Zhipu.AI), Yifan Xu (Tsinghua University), Xuanyu Lei (Tsinghua University), Xinyu Guan (Biendata), Jing Zhang (Renmin University of China), Lei Hou (Tsinghua University), Juanzi Li (Tsinghua University), Jie Tang (Tsinghua University), Yifan Xu (Tsinghua University), Feng Wang (DAMO Academy, Alibaba Group),

Talent Demand-Supply Joint Prediction with Dynamic Heterogeneous Graph Enhanced Meta-Learning — Zhuoning Guo (Harbin Institute of Technology); Hao Liu (HKUST); Le Zhang (University of Science and Technology of China); Qi Zhang (University of Science and Technology of China); Hengshu Zhu (Baidu Talent Intelligence Center, Baidu Inc.); Hui Xiong (Hong Kong University of Science and Tech)

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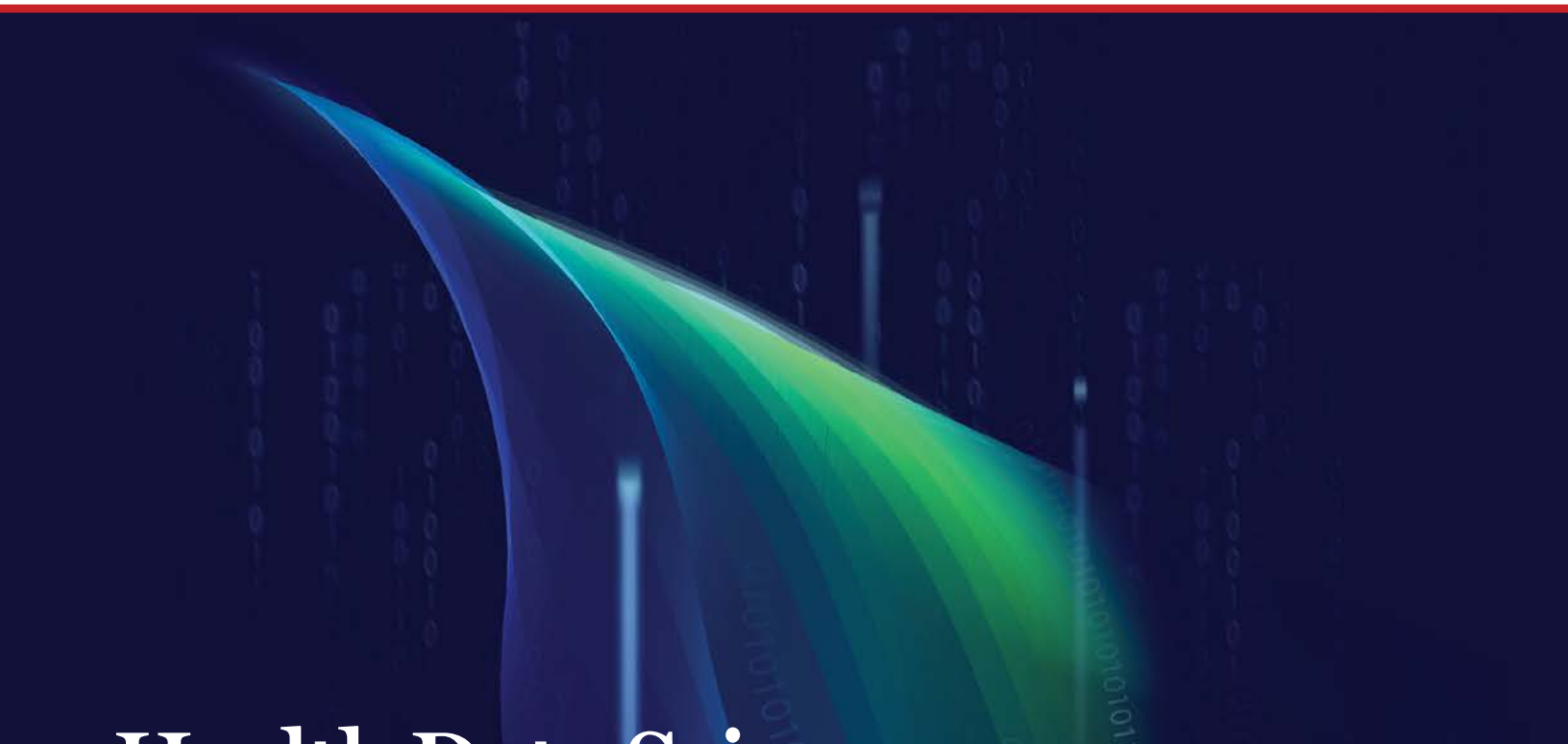

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