London, United Kingdom

August 19 - 23, 2018

24th ACM SIGKDD Conference on Knowledge Discovery and Data Mining

PROGRAM SUBJECT TO CHANGE

Contents

KDD 2018 Agenda at a Glance

KDD 2018: Sunday, August 19 (TUTORIAL DAY)		
7:00AM - 5:00PM	KDD 2018 Registration	Boulevard (Level 0)
8:00AM - 12:00PM	T1: Graph and Tensor Mining for Fun and Profit	ICC Capital Suite Room 7 (Level 3)
8:00AM - 12:00PM	T2: Privacy-preserving Data Mining in Industry: Practical Challenges and Lessons Learned	ICC Capital Suite Room 9 (Level 3)
8:00AM - 12:00PM	T4: Graph Exploration: Let me Show what is Relevant in your Graph	ICC Capital Suite Room 12 (Level 3)
8:00AM - 12:00PM	T8: Online Evaluation for Effective Web Service Development	ICC Capital Suite Room 6 (Level 3)
8:00AM - 12:00PM	T9: Redescription Mining: Theory, Algorithms, and Applications	ICC Capital Suite Room 16 (Level 3)
8:00AM - 12:00PM	T11: Anti-discrimination Learning: From Association to Causation	ICC Capital Suite Room 1 (Level 3)
8:00AM - 12:00PM	T15: Graph Sketching, Sampling, Streaming, and Space-Efficient Optimization	ICC Capital Suite Room 15 (Level 3)
8:00AM - 12:00PM	T17: Artificial Intelligence in Transportation	ICC Capital Suite Room 8 (Level 3)
8:00AM - 12:00PM	T19: Polarization in social media: how to detect and mitigate	ICC Capital Suite Room 13 (Level 3)
8:00AM - 12:00PM	T21: Graph Metric Spaces	ICC Capital Suite Room 10 (Level 3)
8:00AM - 12:00PM	T25: Data Science in Retail-as-a-Service	ICC Capital Suite Room 17 (Level 3)
8:00AM - 12:00PM	T32: Deep Learning for Computational Healthcare	ICC Capital Suite Room 14 (Level 3)
8:00AM - 12:00PM	T33: End-to-end Goal-oriented Question Answering Systems	ICC Capital Suite Room 4 (Level 3)
8:00AM - 12:00PM	T36: Computational Models for Social and Information Network Analysis	ICC Capital Suite Room 11 (Level 3)
9:30AM - 10:00AM	KDD Coffee Break	ICC Capital Suite Foyer (Level 3)
1:00PM - 5:00PM	T5: Fact Checking: theory and practice	ICC Capital Suite Room 1 (Level 3)
1:00PM - 5:00PM	T10: Network Science of Teams: Characterization, Prediction, and Optimization	ICC Capital Suite Room 15 (Level 3)
1:00PM - 5:00PM	T12: Privacy at Scale: Local Differential Privacy in Practice	ICC Capital Suite Room 16 (Level 3)
1:00PM - 5:00PM	T13: Real World Interactive Learning	ICC Capital Suite Room 9 (Level 3)
1:00PM - 5:00PM	T14: Large-Scale Graph Algorithmics: Theory and Practice	ICC Capital Suite Room 7 (Level 3)
1:00PM - 5:00PM	T18: Knowledge Discovery from Cohorts, Electronic Health Records and further Patient- related data	ICC Capital Suite Room 6 (Level 3)
1:00PM - 5:00PM	T20: Causal Inference and Counterfactual Reasoning	ICC Capital Suite Room 8 (Level 3)
1:00PM - 5:00PM	T22: The Science of Algorithmic Map Inference	ICC Capital Suite Room 2 (Level 3)
1:00PM - 5:00PM	T26: Crowd-Powered Data Mining	ICC Capital Suite Room 17 (Level 3)
1:00PM - 5:00PM	T30: Behavior Analytics: Methods and Applications	ICC Capital Suite Room 4 (Level 3)
1:00PM - 5:00PM	T35: Towards Multidimensional Analysis of Text Corpora	ICC Capital Suite Room 13 (Level 3)

1:00PM - 5:00PM	T38: Explainable Models for Healthcare AI	ICC Capital Suite Room 14 (Level 3)
1:00PM - 5:00PM	T39: Building a Large-scale, Accurate and Fresh Knowledge Graph	ICC Capital Suite Room 10 (Level 3)
1:00PM - 5:00PM	T41: Knowledge Extraction and Inference from Text: Shallow, Deep, and Everything in Between	ICC Capital Suite Room 12 (Level 3)
1:00PM - 5:00PM	T6/44: Modeling Data with Networks + Network Embedding: Problems, Methodologies and Frontiers	ICC Capital Suite Room 11 (Level 3)
2:30PM - 3:00PM	KDD Coffee Break	ICC Capital Suite Foyer (Level 3)

KDD 2018: Monday, August 20 (WORKSHOP DAY)		
7:00AM - 5:00PM	KDD 2018 Registration	Boulevard (Level 0)
8:00AM - 12:00PM	D1: Deep Learning Day	ICC Auditorium (Level 0)
8:00AM - 12:00PM	D2: Health Day	ICC Capital Suite Room 12+13 (Level 3)
8:00AM - 12:00PM	F1: Workshop on Mining and Learning with Graphs	ICC Capital Suite Room 8 (Level 3)
8:00AM - 12:00PM	F2: 2018 AdKDD & TargetAd Workshop	ICC Capital Suite Room 9 (Level 3)
8:00AM - 12:00PM	F3: BigScholar: The 5th Workshop on Big Scholarly Data	ICC Capital Suite Room 15 (Level 3)
8:00AM - 12:00PM	F4: Workshop on Mining and Learning from Time Series	ICC Capital Suite Room 7 (Level 3)
8:00AM - 12:00PM	F5: ODD Workshop on Outlier Detection De-constructed	ICC Capital Suite Room 10 (Level 3)
8:00AM - 12:00PM	F6: Workshop on Interactive Data Exploration and Analytics	ICC London Suite Room 2+3 (Level 0)
8:00AM - 12:00PM	F7: Fragile Earth: Theory Guided Data Science to Enhance Scientific Discovery	ICC London Suite Room 1 (Level 0)
8:00AM - 12:00PM	F8: Workshop on Social Impact	ICC Capital Suite Room 1 (Level 3)
8:00AM - 12:00PM	F9: Workshop on Big Data, IoT Streams and Heterogeneous Source Mining (BIGMINE 18)	ICC Capital Suite Room 4 (Level 3)
8:00AM - 12:00PM	F10: Data Science, Journalism & Digital Media	ICC Capital Suite Room 3 (Level 3)
8:00AM - 12:00PM	H1: Workshop on Issues of Sentiment Discovery and Opinion Mining	ICC Capital Suite Room 11 (Level 3)
8:00AM - 12:00PM	H3: Workshop on Machine Learning and Data Mining for Podcasts	ICC London Suite Room 4 (Level 0)
8:00AM - 12:00PM	H6: Common Model Infrastructure	ICC Capital Suite Room 16 (Level 3)
8:00AM - 12:00PM	H8: Workshop on Causal Discovery (CD2018)	ICC Capital Suite Room 17 (Level 3)
8:00AM - 12:00PM	H11: Data Science In Fintech	ICC Capital Suite Room 14 (Level 3)
8:00AM - 12:00PM	H14: AI for Fashion: The Third International Workshop on Fashion and KDD	ICC Capital Suite Room 6 (Level 3)
8:00AM - 12:00PM	H17: Workshop on Urban Computing	ICC Capital Suite Room 2 (Level 3)
9:30AM - 10:00AM	KDD Coffee Break	ICC Capital Suite Foyer (Level 3)
11:00AM - 4:00PM	Data Science Institute Directors Round Table Meeting (Invitation Only)	British Library (Offsite)
1:00PM - 4:30PM	D1: Deep Learning Day	ICC Auditorium (Level 0)

1:00PM - 5:00PM	D2: Health Day	ICC Capital Suite Room 12 (Level 3)
1:00PM - 5:00PM	F1: Workshop on Mining and Learning with Graphs	ICC Capital Suite Room 8 (Level 3)
1:00PM - 5:00PM	F2: 2018 AdKDD & TargetAd Workshop	ICC Capital Suite Room 9 (Level 3)
1:00PM - 5:00PM	F3: BigScholar: The 5th Workshop on Big Scholarly Data	ICC Capital Suite Room 15 (Level 3)
1:00PM - 5:00PM	F4: Workshop on Mining and Learning from Time Series	ICC Capital Suite Room 7 (Level 3)
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1:00PM - 5:00PM	F6: Workshop on Interactive Data Exploration and Analytics	ICC London Suite Room 2+3 (Level 0)
1:00PM - 5:00PM	F7: Fragile Earth: Theory Guided Data Science to Enhance Scientific Discovery	ICC London Suite Room 1 (Level 0)
1:00PM - 5:00PM	F8: Workshop on Social Impact	ICC Capital Suite Room 1 (Level 3)
1:00PM - 5:00PM	F9: Workshop on Big Data, IoT Streams and Heterogeneous Source Mining (BIGMINE 18)	ICC Capital Suite Room 4 (Level 3)
1:00PM - 5:00PM	F10: Data Science, Journalism & Digital Media	ICC Capital Suite Room 3 (Level 3)
1:00PM - 5:00PM	H2: Opinions, Conflict, and Abuse in a Networked Society (OCeANS)	ICC Capital Suite Room 13 (Level 3)
1:00PM - 5:00PM	H5: Workshop on Data Science for Digital Art History: Tackling big data Challenges, Algorithms, and Systems (DSDAH 2018)	ICC Capital Suite Room 2 (Level 3)
1:00PM - 5:00PM	H7: Workshop on Organizational Behavior and Talent Analytics (OBTA 2018)	ICC Capital Suite Room 16 (Level 3)
1:00PM - 5:00PM	H9: Workshop on Knowledge Discovery and User Modelling for Smart Cities	ICC Capital Suite Room 11 (Level 3)
1:00PM - 5:00PM	H12: Conversational AI and Its Applications + Data Sonification Workshop	ICC Capital Suite Room 6 (Level 3)
1:00PM - 5:00PM	H15: Workshop on Quantum Machine Learning	ICC Capital Suite Room 14 (Level 3)
1:00PM - 5:00PM	H16: Workshop on Utility-Driven Mining (UDM 2018)	ICC London Suite Room 4 (Level 0)
1:00PM - 5:00PM	H18: Workshop on Mining Urban Data	ICC Capital Suite Room 17 (Level 3)
2:00PM - 3:30PM	Networking with Experts	ICC Capital Lounge Room 1+2 (Level 2)
2:30PM - 3:00PM	KDD Coffee Break	ICC Capital Suite Foyer (Level 3)
5:30PM - 7:00PM	KDD 2018 Opening Session	ICC Auditorium (Level 0)
7:00PM - 9:30PM	Poster Reception: Group 1 (Research Track Oral, Deep Learning Day, and Health Day)	ICC Capital Hall (Level 0)

KDD 2018: Tuesday, August 21 (MAIN CONFERENCE DAY 1)		
7:00AM - 5:00PM	KDD 2018 Registration	Boulevard (Level 0)
9:30AM - 6:00PM	Sponsor Room	ICC Capital Suite Room 5 (Level 3)
9:30AM - 6:00PM	KDD Exhibit Hall	ICC Capital Hall (Level 0)
8:00AM - 9:30AM	Keynote: Jeannette Wing - Data for Good	ICC Auditorium (Level 0)
8:30AM - 12:00PM	Hands-On Tutorial: GOAI: Accelerating the Scalable Data Science Environment with GPU-enabled Python	ICC Capital Suite Room 2+3+4 (Level 3)
8:30AM - 12:00PM	Hands-On Tutorial: MXNet with focus on NLP	ICC Capital Suite Room 14+15+16

		(Level 3)
9:30AM - 12:30PM	Data Science in India	ICC London Suite Room 2+3 (Level 0)
9:30AM - 10:00AM	KDD Coffee Break	ICC Capital Hall (Level 0)
10:00AM - 12:00PM	RT1: Deep Learning I	ICC Capital Suite Room 8+11 (Level 3)
10:00AM - 12:00PM	ADS1: Commerce and Profiling	ICC Capital Suite Room 7+12 (Level 3)
10:00AM - 12:00PM	RT2: Reinforcement Learning	ICC Capital Suite Room 9+10 (Level 3)
10:00AM - 12:00PM	RT3: Matrices, Kernels and Sketches	ICC Capital Suite Room 6+13 (Level 3)
10:00AM - 12:00PM	AI1: Commerce and Financial Applications (Suju Rajan, Mayur Datar, James Hodson)	ICC Auditorium (Level 0)
12:00PM - 1:30PM	KDD Lunch	ICC Capital Hall (Level 0)
1:30PM - 5:30PM	Hands-On Tutorial: Active learning and transfer learning at scale with R and Python	ICC Capital Suite Room 2+3+4 (Level 3)
1:30PM - 5:30PM	Hands-On Tutorial: MXNet with focus on NLP	ICC Capital Suite Room 14+15+16 (Level 3)
1:30PM - 4:30PM	Data Science in China	ICC London Suite Room 2+3 (Level 0)
1:30PM - 5:00PM	KDD Cup Workshop	ICC Capital Suite Room 1 (Level 3)
1:30PM - 5:30PM	Poster Blitz Sessions	ICC Auditorium (Level 0)
1:30PM - 3:30PM	KDD Plenary Panel: Societal Impact of Data Science and Artificial Intelligence	ICC Capital Suite Room 8+11 (Level 3)
1:30PM - 3:30PM	RT4: Temporal and Spatial Data Mining I	ICC Capital Suite Room 7+12 (Level 3)
1:30PM - 3:30PM	ADS2: Planning and Forecasting in Finance and Commerce	ICC Capital Suite Room 9+10 (Level 3)
1:30PM - 3:30PM	RT5: Graph and Social Network I	ICC Capital Suite Room 6+13 (Level 3)
2:00PM - 3:30PM	Networking with Experts	ICC Capital Lounge Room 1+2 (Level 2)
3:30PM - 4:00PM	KDD Coffee Break	ICC Capital Hall (Level 0)
4:00PM - 6:00PM	RT6: Deep Learning II	ICC Capital Suite Room 8+11 (Level 3)
4:00PM - 6:00PM	RT7: Temporal and Spatial Data Mining II	ICC Capital Suite Room 7+12 (Level 3)
4:00PM - 6:00PM	ADS3: Ranking and Making Recommendations	ICC Capital Suite Room 9+10 (Level 3)
4:00PM - 6:00PM	RT8: Graph and Social Network II	ICC Capital Suite Room 6+13 (Level 3)
4:00PM - 6:00PM	Dissertation Award	ICC Capital Suite Room 17 (Level 3)
6:00PM - 7:00PM	Keynote: David Hand - Data Science for Financial Applications	ICC Auditorium (Level 0)
7:00PM - 9:30PM	Poster Reception: Group 2 (Applied Data Science Track, Research Track Posters, and KDD Cup)	ICC Capital Hall (Level 0)

KDD 2018: Wednesday, August 22 (MAIN CONFERENCE DAY 2)		
8:00AM - 7:00PM	KDD 2018 Registration	Boulevard (Level 0)
9:30AM - 6:00PM	Sponsor Room	ICC Capital Suite Room 5 (Level 3)
9:30AM - 6:00PM	KDD Exhibit Hall	ICC Capital Hall (Level 0)
8:00AM - 9:30AM	Keynote: Alvin Roth - Market Design and Computerized Marketplaces	ICC Auditorium (Level 0)

8:30AM - 12:00PM	Hands-On Tutorial: Beyond Graph Mining: Higher-Order Data Analytics for Temporal Network Data	ICC Capital Suite Room 2+3+4 (Level 3)
8:30AM - 12:00PM	Hands-On Tutorial: Deep Learning with Keras	ICC Capital Suite Room 14+15+16 (Level 3)
9:30AM - 10:00AM	KDD Coffee Break	ICC Capital Hall (Level 0)
10:00AM - 12:00PM	RT9: Supervised Learning I	ICC Capital Suite Room 8+11 (Level 3)
10:00AM - 12:00PM	ADS4: Urban Planning	ICC Capital Suite Room 7+12 (Level 3)
10:00AM - 12:00PM	RT10: Recommenders I	ICC Capital Suite Room 9+10 (Level 3)
10:00AM - 12:00PM	RT11: Representation and Embedding I	ICC Capital Suite Room 6+13 (Level 3)
10:00AM - 12:00PM	AI2: Consumer Internet Applications (Hema Raghavan, Grace Huang, Luna Dong)	ICC Auditorium (Level 0)
10:00AM - 12:00PM	Project Showcase	ICC London Suite Room 2+3 (Level 0)
12:00PM - 1:30PM	KDD Lunch	ICC Capital Hall (Level 0)
12:00PM - 1:30PM	KDD Women's Lunch (Ticket Required)	Halls N20-N23
1:30PM - 5:30PM	Hands-On Tutorial: Beyond Graph Mining: Higher-Order Data Analytics for Temporal Network Data	ICC Capital Suite Room 2+3+4 (Level 3)
1:30PM - 5:30PM	Hands-On Tutorial: Feature Extraction and Summarization with Sequence to Sequence Learning	ICC Capital Suite Room 14+15+16 (Level 3)
1:30PM - 3:30PM	Applied Data Science Invited Panel: Who is a Data Scientist? Defining the Analytics Profession and Cutting Out the Hype and Confusion	ICC Capital Suite Room 8+11 (Level 3)
1:30PM - 6:00PM	Global AI Initiatives Event	ICC Capital Suite Room 7+12 (Level 3)
1:30PM - 3:30PM	RT12: Recommenders II	ICC Capital Suite Room 9+10 (Level 3)
1:30PM - 3:30PM	RT13: Representation and Embedding II	ICC Capital Suite Room 6+13 (Level 3)
1:30PM - 3:30PM	AI3: Data Science Infrastructure (Eric Xing, Alex Smola/Edo Liberty, Chris Re)	ICC Auditorium (Level 0)
1:30PM - 6:00PM	Project Showcase	ICC London Suite Room 2+3 (Level 0)
2:00PM - 3:30PM	Networking with Experts	ICC Capital Lounge Room 1+2 (Level 2)
3:30PM - 4:00PM	KDD Coffee Break	ICC Capital Hall (Level 0)
4:00PM - 6:00PM	RT14: Supervised Learning II	ICC Capital Suite Room 8+11 (Level 3)
4:00PM - 6:00PM	ADS5: Safety	ICC Capital Suite Room 9+10 (Level 3)
4:00PM - 6:00PM	RT15: Semi-supervised and Transfer Learning	ICC Capital Suite Room 6+13 (Level 3)
6:00PM - 7:00PM	KDD Business Presentation	ICC Auditorium (Level 0)
7:00PM - 8:30PM	KDD 2018 Banquet (Ticket Required)	Halls N20-N23

KDD 2018: Thursday, August 23 (MAIN CONFERENCE DAY 3)		
8:00AM - 3:00PM	KDD 2018 Registration	Boulevard (Level 0)
9:30AM - 5:00PM	Sponsor Room	ICC Capital Suite Room 5 (Level 3)
9:30AM - 1:30PM	KDD Exhibit Hall	ICC Capital Hall (Level 0)
8:00AM - 9:30AM	Keynote: Yee Whye Teh - On Big Data Learning for Small Data Problems	ICC Auditorium (Level 0)

8:30AM - 12:00PM	Hands-On Tutorial: Introduction to Reinforcement Learning with Ray	ICC Capital Suite Room 2+3+4 (Level 3)
8:30AM - 12:00PM	Hands-On Tutorial: Building Custom Deep Recommendation Engines	ICC Capital Suite Room 14+15+16 (Level 3)
9:30AM - 10:00AM	KDD Coffee Break	ICC Capital Hall (Level 0)
10:00AM - 12:00PM	RT16: Unsupervised Learning I	ICC Capital Suite Room 8+11 (Level 3)
10:00AM - 12:00PM	ADS6: Texts, Images and Videos	ICC Capital Suite Room 9+10 (Level 3)
10:00AM - 12:00PM	ADS7: Medicine and Healthcare	ICC Capital Suite Room 7+12 (Level 3)
10:00AM - 12:00PM	RT17: Methodology I	ICC Capital Suite Room 6+13 (Level 3)
10:00AM - 12:00PM	AI4: Novel Applications (Joseph Sirosh, Jen Walraven, John Abowd)	ICC Auditorium (Level 0)
12:00PM - 1:30PM	KDD Lunch	ICC Capital Hall (Level 0)
1:30PM - 5:30PM	Hands-On Tutorial: Introduction to Reinforcement Learning with Ray	ICC Capital Suite Room 2+3+4 (Level 3)
1:30PM - 3:30PM	RT18: Unsupervised Learning II	ICC Capital Suite Room 8+11 (Level 3)
1:30PM - 3:30PM	ADS8: Natural Sciences, Sport, and the Application of Controlled Experiments	ICC Capital Suite Room 7+12 (Level 3)
1:30PM - 3:30PM	RT19: Knowledge Discovery	ICC Capital Suite Room 9+10 (Level 3)
1:30PM - 3:30PM	RT20: Methodology II	ICC Capital Suite Room 6+13 (Level 3)
4:00PM - 5:00PM	KDD 2018 Closing Session	ICC Auditorium (Level 0)

KDD 2018 Chairs' Welcome Message

On behalf of the organizing committee, it is our great pleasure to welcome you to the historic city of London for the 24th ACM Conference on Knowledge Discovery and Data Mining – KDD 2018.

These are very exciting times for our community. The terms "Data Science", "Artificial Intelligence", "Machine Learning", "Data Mining" and "Big Data" have, in the last few years, grown out of research labs and gained presence in the media and in everyday conversations. We hear these terms on social media and from decision makers at various level, both in governments and corporations. The impact of these technologies is felt in almost every walk of life with novel applications in self driving cars, AI assistants and in the discovery of new cures. Importantly, the current rapid progress in data science is facilitated by the timely sharing of newly discovered approaches across research and industry. It is the hallmark of KDD conferences in the past that they have been the bridge between theory and practice, a great facilitator and catalyst for this exchange. Researchers and practitioners meet and interact in person over several days. Our program, with its keynotes and interactive tutorials, is designed to bring these two groups together.

It is also a very exciting time for London, which has recently been named as the "the AI capital of Europe". We could have chosen no better place to host this year's conference. London is home to more than 750 AI companies, operating in more than 30 industrial sectors, with almost half of these enterprises having a non-UK founder, and about a third with founders from a minority background. It is also home to many world leading academic institutions and research centers. This confirms London's international and open nature as a leading hub for innovation and technology.

The conference this year continues with its tradition of a strong engaging and hands-on program including a full day of tutorials on Sunday and plenty of cutting edge workshops on Monday. The final three days are devoted to peer reviewed contributed technical papers, describing both novel, important research contributions, and applied, innovative solutions. Four stellar keynote talks, by British Academy Fellow David Hand, Nobel Laureate Alvin E. Roth, Columbia Univ. Data Science Director Jeannette M. Wing and Oxford University Professor Yee Whye Teh, will touch on some of the important, emerging issues in the field of data mining. With a growing industry around AI, our KDD Panel brings together experts to spawn discussions and exchange ideas about how AI can be used for social good. We have an outstanding lineup of industry speakers sharing their experiences and expertise in deploying industrial data mining solutions. Thanks to a strong hands-on tutorial program, participants will learn how to use practical data science tools.

KDD 2018 puts a strong emphasis on AI development with mainstream applications featured by KDD Cup of Fresh Air with 4,173 teams around the globe participating in a challenge to predict air quality in cities like London and Beijing; a unique Deep Learning day, with world class research leaders addressing the frontiers in deep learning research and applications; and a Global AI Initiatives Session where major government initiatives in AI will be presented by representatives from various countries including UK, USA, China etc. We hope that the content and the professional networking opportunities at KDD 2018 will help you to succeed professionally, identify new technology trends, learn from contributed papers, presentations, and posters, discover new tools, processes and practices, identify new job opportunities and hire new team members.

KDD 2018 awarded a record USD 145k for student travel and set aside USD 25k to enable smaller startups to attend. Of particular interest is our "Social Impact" program, which has been an integral part of KDD for years. Its work to highlight

the impact of data science on projects of broad social relevance included relevant scientific papers as well as the development of programs such as data science for social good and projects that help NGO's and administrations to use data science to enhance life quality. As part of the Impact Awards program, 7 proposals for projects that bring together academia and social partners from different parts of the world, have been awarded a one-year grant, renewable based on their impact, scale and promise. We specially encourage the participation of underrepresented and resource-constrained parts of society so that the benefits of technologies are shared and available more broadly.

We are therefore confident that KDD 2018 will be a wonderful place for researchers, practitioners, funding agencies and investors willing to create new algorithmic solutions and maximize their economic and societal impact.

The table below summarizes (numerically) different elements of the conference program and provides acceptance rates, whenever applicable.

Venue or Track	*Reviewed*	*Accepted*	*Acceptance Rate (%)*
Research Track Papers	983	107*, 74+	10.9*, 7.5+
Applied Data Science Track Papers	497	40*, 72+	8.0*,14.5+
Workshops	52	28	53.8
Tutorials	44	29	65.9
Hands-on Tutorials	12	5 (3 invited)	41.6
Applied Data Science Talks	Invited	12	NA
Regular Keynotes	Invited	4	NA
Panels	Invited	1	NA

Papers: *oral, +poster

Putting together KDD 2018 has been a wonderful team effort by the members of the entire organizing committee. We thank the authors and the speakers for providing the content of the program. We are grateful to the program committee and the senior program committee, who worked very hard in reviewing papers and providing feedback for authors. Finally, we thank the numerous sponsors, the ACM SIGKDD and the Data Science Institute at Imperial for their support in organizing the conference.

We hope that you will find this program interesting and thought-provoking, and that the conference will provide you with a valuable opportunity to share ideas with other researchers and practitioners from institutions around the world.

KDD 2018 Chairs
Yi-Ke Guo (General Chair)
Faisal Farooq (General Chair)

Program Highlights

Keynote Talks

- **Jeannette M. Wing.** Director of the Data Sciences Institute (Columbia University). Data for Good.
- **David Hand.** Emeritus Professor of Mathematics and Senior Research Investigator (Imperial College). Data Science for Financial Applications.
- **Alvin E. Roth.** Professor of Economics (Stanford University). Market Design and Computerized Marketplaces.
- **Yee Whye Teh.** Professor and Research Scientist (Oxford University and DeepMind). On Big Data Learning for Small Data Problems.

Research and Applied Data Science Tracks

- 181 Research Track Papers
- 112 Applied Data Science Track Papers

Applied Data Science Track Invited Talks

- **Suju Rajan (Criteo).** Computational Advertising at Scale.
- **Hema Raghavan (LinkedIn).** Building Near Real-time Contextual Recommendations for Active Communities on LinkedIn.
- **Eric Xing (CMU/Petuum).** Data Science Infrastructure.
- **Grace Huang (Pinterest).** The Pinterest Approach to Machine Learning.
- **Alex Smola and Edo Liberty (Amazon).** Algorithms, Data, Hardware and Tools - a Perfect Storm.
- **Chris Re (Stanford).** Software 2.0 and Snorkel: Beyond Hand-Labeled Data.
- **Luna Dong (Amazon)**. Challenges and Innovations in Building a Product Knowledge Graph.
- **Mayur Datar (Flipkart).** Data Science at Flipkart - An Indian E-Commerce company.
- **Joseph Sirosh (Microsoft).** Planet-Scale Land Cover Classification With FPGAs.
- **Jen Walraven (Netflix).** Data Science and Entertainment Production.
- **John Abowd (Census Bureau).** The U.S. Census Bureau Adopts Differential Privacy.
- **James Hodson (Jozef Stefan Institute).** Humans, Jobs, and the Economy.

Applied Data Science Panel

- **Panel Chair: Usama Fayyad (OODA Health and Open Insights)**. Who is a Data Scientist? Defining the Analytics Profession and Cutting Out the Hype and Confusion

KDD Panel

- **Moderator: Foster Provost.** Societal Impact of Data Science and Artificial Intelligence.

Tutorials

- T1: Graph and Tensor Mining for Fun and Profit
- T2: Privacy-preserving Data Mining in Industry: Practical Challenges and Lessons Learned
- T4: Graph Exploration: Let me Show what is Relevant in your Graph
- T5: Fact Checking: theory and practice
- T6/44: Modeling Data with Networks + Network Embedding: Problems, Methodologies and Frontiers
- T8: Online Evaluation for Effective Web Service Development

- T9: Redescription Mining: Theory, Algorithms, and Applications
- T10: Network Science of Teams: Characterization, Prediction, and Optimization
- T11: Anti-discrimination Learning: From Association to Causation
- T12: Privacy at Scale: Local Differential Privacy in Practice
- T13: Real World Interactive Learning
- T14: Large-Scale Graph Algorithmics: Theory and Practice
- T15: Graph Sketching, Sampling, Streaming, and Space-Efficient Optimization
- T18: Knowledge Discovery from Cohorts, Electronic Health Records and further Patient-related data
- T17: Artificial Intelligence in Transportation
- T19: Polarization in social media: how to detect and mitigate
- T20: Causal Inference and Counterfactual Reasoning
- T21: Graph Metric Spaces
- T22: The Science of Algorithmic Map Inference
- T25: Data Science in Retail-as-a-Service
- T26: Crowd-Powered Data Mining
- T30: Behavior Analytics: Methods and Applications
- T32: Deep Learning for Computational Healthcare
- T33: End-to-end Goal-oriented Question Answering Systems
- T35: Towards Multidimensional Analysis of Text Corpora
- T36: Computational Models for Social and Information Network Analysis
- T38: Explainable Models for Healthcare AI
- T39: Building a Large-scale, Accurate and Fresh Knowledge Graph
- T41: Knowledge Extraction and Inference from Text: Shallow, Deep, and Everything in Between

Health Day

- **Plenary Panel Discussion:** Saving Lives with Data Science
    - Tae Hyun Hwang (Cleveland Clinic), Carly Eckert MD (KenSci), David Lowe MD (NHS Scotland), Scott Wagers (BIO Science Consulting), Bharat Rao (KPMG-US), Moderated by Prof. Ankur Teredesai
- **3 Workshops:**
    - Workshop on Machine Learning for Medicine and Healthcare
    - Workshop on Data Mining in Bioinformatics (BIOKDD 2018)
    - epiDAMIK: Epidemiology meets Data Mining and Knowledge Discovery
- **21 Invited Posters** at KDD Poster Session

KDD Workshops

- F1: Workshop on Mining and Learning with Graphs
- F2: 2018 AdKDD & TargetAd Workshop
- F3: BigScholar: The 5th Workshop on Big Scholarly Data
- F4: Workshop on Mining and Learning from Time Series
- F5: ODD Workshop on Outlier Detection De-constructed
- F6: Workshop on Interactive Data Exploration and Analytics
- F7: Fragile Earth: Theory Guided Data Science to Enhance Scientific Discovery
- F8: Workshop on Social Impact
- F9: Workshop on Big Data, IoT Streams and Heterogeneous Source Mining (BIGMINE 18)
- F10: Data Science, Journalism & Digital Media
- H1: Workshop on Issues of Sentiment Discovery and Opinion Mining
- H2: Opinions, Conflict, and Abuse in a Networked Society (OCeANS)
- H3: Workshop on Machine Learning and Data Mining for Podcasts

- H5: Workshop on Data Science for Digital Art History: Tackling big data Challenges, Algorithms, and Systems (DSDAH 2018)
- H6: Common Model Infrastructure
- H7: Workshop on Organizational Behavior and Talent Analytics (OBTA 2018)
- H8: Workshop on Causal Discovery (CD2018)
- H9: Workshop on Knowledge Discovery and User Modelling for Smart Cities
- H11: Data Science In Fintech
- H12: Conversational AI and Its Applications + Data Sonification Workshop
- H14: AI for Fashion: The Third International Workshop on Fashion and KDD
- H15: Workshop on Quantum Machine Learning
- H16: Workshop on Utility-Driven Mining (UDM 2018)
- H17: Workshop on Urban Computing
- H18: Workshop on Mining Urban Data28 Workshops

Deep Learning Day

- 10 Invited/Contributed Talks
- Contributed Spotlights
- Poster Session (jointly with KDD posters)

Hands-On Tutorials

- **MXNet with focus on NLP.** Alex Smola (Amazon), Mu Li (Amazon)
- **GOAI: Accelerating the Scalable Data Science Environment with GPU-enabled Python.** Brad Rees (Nvidia), Keith Kraus (Nvidia), Joshua Patterson (Nvidia)
- **Active learning and transfer learning at scale with R and Python.** John-Mark Agosta (Microsoft), Olga Liakhovich (Microsoft), Robert Horton (Microsoft), Mario Inchiosa (Microsoft), Justin Ormont (Microsoft), Vanja Paunić (Microsoft), Siddarth Ramesh (Microsoft), Tomas Singliar (Microsoft), Ali-Kazim Zaidi (Microsoft), and Hang Zhang (Microsoft)
- **Deep Learning with Keras.** Anjali Sridhar (Google)
- **Feature Extraction and Summarization with Sequence to Sequence Learning.** Hamel Husain (Github), HoHsiang Wu (Github)
- **Beyond Graph Mining: Higher-Order Data Analytics for Temporal Network Data.** Renaud Lambiotte (Univ. of Oxford), Martin Rosvall (Umeå University), Michael Schaub (MIT), Ingo Scholtes (ETH Zurich), Jian Xu (Citadel LLC)
- **Building Custom Deep Recommendation Engines.** Chris Moody (Stitchfix)
- **Introduction to Reinforcement Learning with Ray.** Vrushank Vora (Papert Lab.)

Project Showcase

- 4 Keynotes
    - John Davies (British Telecom)
    - Nuria De Lama Sanchez (ATOS)
    - Marko Grobelnik (J.Stefan Institute)
    - Chaitanya Baru (NSF, USA)
- 17 Presentations (10 mins each)
- 29 Posters

KDD 2018 Tutorial Program

Sunday August 19th, 2018

(Locations provided in the Agenda at a Glance section)

- 8:00AM - 12:00PM T1: Graph and Tensor Mining for Fun and Profit
- 8:00AM - 12:00PM T2: Privacy-preserving Data Mining in Industry: Practical Challenges and Lessons Learned
- 8:00AM - 12:00PM T4: Graph Exploration: Let me Show what is Relevant in your Graph
- 8:00AM - 12:00PM T8: Online Evaluation for Effective Web Service Development
- 8:00AM - 12:00PM T9: Redescription Mining: Theory, Algorithms, and Applications
- 8:00AM - 12:00PM T11: Anti-discrimination Learning: From Association to Causation
- 8:00AM - 12:00PM T15: Graph Sketching, Sampling, Streaming, and Space-Efficient Optimization
- 8:00AM - 12:00PM T17: Artificial Intelligence in Transportation
- 8:00AM - 12:00PM T19: Polarization in social media: how to detect and mitigate
- 8:00AM - 12:00PM T21: Graph Metric Spaces
- 8:00AM - 12:00PM T25: Data Science in Retail-as-a-Service
- 8:00AM - 12:00PM T32: Deep Learning for Computational Healthcare
- 8:00AM - 12:00PM T33: End-to-end Goal-oriented Question Answering Systems
- 8:00AM - 12:00PM T36: Computational Models for Social and Information Network Analysis
- 1:00PM - 5:00PM T5: Fact Checking: theory and practice
- 1:00PM - 5:00PM T10: Network Science of Teams: Characterization, Prediction, and Optimization
- 1:00PM - 5:00PM T12: Privacy at Scale: Local Differential Privacy in Practice
- 1:00PM - 5:00PM T13: Real World Interactive Learning
- 1:00PM - 5:00PM T14: Large-Scale Graph Algorithmics: Theory and Practice
- 1:00PM - 5:00PM T18: Knowledge Discovery from Cohorts, Electronic Health Records and further Patient-related data
- 1:00PM - 5:00PM T20: Causal Inference and Counterfactual Reasoning
- 1:00PM - 5:00PM T22: The Science of Algorithmic Map Inference
- 1:00PM - 5:00PM T26: Crowd-Powered Data Mining
- 1:00PM - 5:00PM T30: Behavior Analytics: Methods and Applications
- 1:00PM - 5:00PM T35: Towards Multidimensional Analysis of Text Corpora
- 1:00PM - 5:00PM T38: Explainable Models for Healthcare AI
- 1:00PM - 5:00PM T39: Building a Large-scale, Accurate and Fresh Knowledge Graph
- 1:00PM - 5:00PM T41: Knowledge Extraction and Inference from Text: Shallow, Deep, and Everything in Between
- 1:00PM - 5:00PM T6/44: Modeling Data with Networks + Network Embedding: Problems, Methodologies and Frontiers

KDD 2018 Health Day Program

Sunday August 19th, 2018

Tutorials

- Deep Learning for Computational Healthcare. Edward Choi (Georgia Tech), Cao Xiao (IBM Research) and Jimeng Sun (Georgia Tech)
- Knowledge Discovery from Cohorts, Electronic Health Records and further Patient-related data. Panagiotis Papapetrou (Stockholm University) and Myra Spiliopoulou (University of Magdeburg)
- Explainable Models for Healthcare AI. Muhammad Aurangzeb Ahmad (KenSci), Dr. Carly Eckert (KenSci), and Ankur Teredesai (KenSci & University of Washington)

8:00AM-5:00PM Schedule - Various Rooms

Tutorial Schedule

- 08:00 - 9:30AM Deep Learning for Computational Healthcare - ICC Capital Suite Room 14 (Level 3)
- 09:30 - 10:00AM Coffee Break
- 10:00 - 12:00AM Deep Learning for Computational Healthcare (Continued) - ICC Capital Suite Room 14 (Level 3)
- 12:00 - 1:00PM Lunch (on your own)
- 1:00 - 2:30PM Knowledge Discovery from Cohorts, Electronic Health Records and further Patient- related data - ICC Capital Suite Room 6 (Level 3)
- 1:00 - 2:30PM Explainable Models In Healthcare AI - ICC Capital Suite Room 14 (Level 3)
- 2:30 - 3:00PM Coffee Break
- 3:00 - 5:00PM Knowledge Discovery from Cohorts, Electronic Health Records and further Patient- related data - ICC Capital Suite Room 6 (Level 3)
- 3:00 - 5:00PM Explainable Models In Healthcare AI (continued) - ICC Capital Suite Room 14 (Level 3)

Monday August 20th, 2018

Workshops:

- Workshop on Epidemiology meets Data Mining and Knowledge discovery (epiDAMIK). B. Aditya Prakash.
- Workshop on Machine Learning for Medicine and Healthcare. Mansoor Saqi and Prithwish Chakraborty.
- Workshop on Data Mining in Bioinformatics (BIOKDD 2018). Da Yan.

8:00AM-5:00PM Schedule - ICC Capital Suite Room 12 (+13) (Level 3)

Schedule

- 08:00AM - 08:50AM Opening Panel Discussion: Saving Lives with Data Science
- 09:00AM - 09:30AM Workshop 1: Workshop on Epidemiology meets Data Mining and Knowledge discovery (epiDAMIK) & Workshop 2: Workshop on Data Mining in Bioinformatics (BIOKDD 2018)
- 09:30AM - 10:00AM Coffee Break
- 10:00AM - 12:00AM Workshop 1 & Workshop 2 continue
- 12:00PM - 1:00PM Lunch & Joint Workshop Posters
- 1:00PM - 2:30PM Workshop 3: Workshop on Machine Learning for Medicine and Healthcare.
- 2:30PM - 3:00PM Coffee Break
- 3:00PM - 5:00PM Workshop 3 Continues
- 7:00PM - 9:30PM Invited Posters from Health Day at KDD Poster Reception

KDD 2018 Workshop Program

*****Please check the workshop web-pages for latest schedules*****

Monday August 20, 2018

(Locations provided in the Agenda at a Glance section)

- 8:00AM - 5:00PM F1: Workshop on Mining and Learning with Graphs
- 8:00AM - 5:00PM F2: 2018 AdKDD & TargetAd Workshop
- 8:00AM - 5:00PM F3: BigScholar: The 5th Workshop on Big Scholarly Data
- 8:00AM - 5:00PM F4: Workshop on Mining and Learning from Time Series
- 8:00AM - 5:00PM F5: ODD Workshop on Outlier Detection De-constructed
- 8:00AM - 5:00PM F6: Workshop on Interactive Data Exploration and Analytics
- 8:00AM - 5:00PM F7: Fragile Earth: Theory Guided Data Science to Enhance Scientific Discovery
- 8:00AM - 5:00PM F8: Workshop on Social Impact
- 8:00AM - 5:00PM F9: Workshop on Big Data, IoT Streams and Heterogeneous Source Mining (BIGMINE 18)
- 8:00AM - 5:00PM F10: Data Science, Journalism & Digital Media
- 8:00AM - 12:00PM H1: Workshop on Issues of Sentiment Discovery and Opinion Mining
- 8:00AM - 12:00PM H3: Workshop on Machine Learning and Data Mining for Podcasts
- 8:00AM - 12:00PM H6: Common Model Infrastructure
- 8:00AM - 12:00PM H8: Workshop on Causal Discovery (CD2018)
- 8:00AM - 12:00PM H11: Data Science In Fintech
- 8:00AM - 12:00PM H14: AI for Fashion: The Third International Workshop on Fashion and KDD
- 8:00AM - 12:00PM H17: Workshop on Urban Computing
- 1:00PM - 5:00PM H2: Opinions, Conflict, and Abuse in a Networked Society (OCeANS)
- 1:00PM - 5:00PM H5: Workshop on Data Science for Digital Art History: Tackling big data Challenges, Algorithms, and Systems (DSDAH 2018)
- 1:00PM - 5:00PM H7: Workshop on Organizational Behavior and Talent Analytics (OBTA 2018)
- 1:00PM - 5:00PM H9: Workshop on Knowledge Discovery and User Modelling for Smart Cities
- 1:00PM - 5:00PM H12: Conversational AI and Its Applications + Data Sonification Workshop
- 1:00PM - 5:00PM H15: Workshop on Quantum Machine Learning
- 1:00PM - 5:00PM H16: Workshop on Utility-Driven Mining (UDM 2018)
- 1:00PM - 5:00PM H18: Workshop on Mining Urban Data

KDD 2018 Deep Learning Day Program

Monday August 20th, 2018

8:00AM-4:30PM Schedule - ICC Auditorium (Level 0)

- 8:00AM - 08:30AM Tamara Broderick (MIT)
- 8:30AM - 09:15AM Andrej Karpathy (Tesla)
- 9:15AM - 09:45AM Qiaozhu Mei (UMich)
- 9:45AM - 10:15AM Coffee Break
- 10:15AM - 10:45AM Kyunghyun Cho (NYU/ Facebook)
- 10:45AM - 11:30AM Richard Socher (Salesforce/ Stanford)
- 11:30AM - 12:00PM Oriol Vinyals (DeepMind)
- 12:00PM - 1:00PM Lunch
- 1:00PM - 1:30PM Ali Rahimi (Google)
- 1:30PM - 2:15PM Dawn Song (UC Berkeley)
- 2:15PM - 2:30PM Coffee Break
- 2:30PM - 3:00PM Soumith Chintala (Facebook)
- 3:00PM - 3:30PM Le Song (GaTech)
- 3:30PM - 3:45PM Coffee Break
- 3:45PM - 4:30PM Contributed spotlights
- 7:00PM - 9:30PM DL Day Poster Session (together with main KDD poster session)

KDD 2018 Hands-On Tutorial Program

Tuesday August 21, 2018

8:30AM-12:00PM, 1:30PM-5:30PM Hands-On Tutorial 1 - ICC Capital Suite Room 14+15+16
Title: MXNet with focus on NLP
Instructors: Alex Smola (Amazon), Mu Li (Amazon)

8:30AM-12:00PM Hands-On Tutorial 2 - ICC Capital Suite Room 2+3+4
Title: GOAI: Accelerating the Scalable Data Science Environment with GPU-enabled Python
Instructors: Brad Rees (Nvidia), Keith Kraus (Nvidia), Joshua Patterson (Nvidia)

1:30AM-5:30PM Hands-On Tutorial 3 - ICC Capital Suite Room 2+3+4
Title: Active learning and transfer learning at scale with R and Python
Instructors: John-Mark Agosta (Microsoft), Olga Liakhovich (Microsoft), Robert Horton (Microsoft), Mario Inchiosa (Microsoft), Justin Ormont (Microsoft), Vanja Paunić (Microsoft), Siddarth Ramesh (Microsoft), Tomas Singliar (Microsoft), Ali-Kazim Zaidi (Microsoft), and Hang Zhang (Microsoft)

Wednesday August 22, 2018

8:30AM-12:00PM, 1:30PM-5:30PM Hands-On Tutorial 6 - ICC Capital Suite Room 2+3+4
Title: Beyond Graph Mining: Higher-Order Data Analytics for Temporal Network Data
Instructors: Renaud Lambiotte (Univ. of Oxford), Martin Rosvall (Umeå University), Michael Schaub (MIT), Ingo Scholtes (ETH Zurich), Jian Xu (Citadel LLC)

8:30AM-12:00PM Hands-On Tutorial 4 - ICC Capital Suite Room 14+15+16
Title: Deep Learning with Keras
Instructors: Anjali Sridhar (Google)

1:30AM-5:30PM Hands-On Tutorial 5 - ICC Capital Suite Room 14+15+16
Title: Feature Extraction and Summarization with Sequence to Sequence Learning
Instructors: Hamel Husain (Github), HoHsiang Wu (Github)

Thursday August 23, 2018

8:30AM-12:00PM Hands-On Tutorial 7 - ICC Capital Suite Room 14+15+16
Title: Building Custom Deep Recommendation Engines
Instructors: Chris Moody (Stitchfix)

8:30AM-12:00PM, 1:30PM-5:30PM Hands-On Tutorial 8 - ICC Capital Suite Room 2+3+4
Title: Introduction to Reinforcement Learning with Ray
Instructors: Vrushank Vora (Papert Lab.)

KDD Cup 2018 Program

Tuesday August 21, 2018

1:30PM-5:00PM Schedule - ICC Capital Suite Room 1 (Level 3)

- 1:30 - 2:00PM Keynote Speaker: Rosalind O'Driscoll (Senior Policy Officer for Air Quality at the Greater London Authority)
- 2:00 - 2:30PM KDD Cup winner talks #1
- 2:30 - 3:00PM Keynote Speaker: Marios Michailidis (Data Scientist at H2O.ai, current #2 and former #1 at Kaggle)
- 3:00 - 3:30PM KDD Cup winner talks #2
- 3:30 - 4:00PM Coffee Break
- 4:00 - 5:00PM Panel "How can winning Data Science competitions benefit your career development?" Gilberto Titericz (Current #2, former #1 at Kaggle), Marios Michailidis (Current #3, former #1 at Kaggle), Abhishek Thakur (Former #3 at Kaggle), Claudia Perlich (4 times KDD Cup winner), Jacob Spoelstra (KDD Cup winner, 2nd place at Netflix Grand Prize).

KDD 2018 Project Showcase Program

Wednesday August 22, 2018

10:00AM-6:00PM Schedule - ICC London Suite Room 2+3 (Level 0)

Keynotes

- John Davies (British Telecom, UK)
- Nuria De Lama Sanchez (ATOS, ES)
- Marko Grobelnik (J. Stefan Institute, SI)
- Chaitanya Baru (NSF, USA)

Agenda

- 9:30AM – 10:00AM KDD Coffee break
- 10:00AM – 10:20 Keynote by John Davies (British Telecom)
- 10:20AM – 11:30AM Presentations I (7 projects, 10 mins each)
- 11:30AM – 12:00PM Demos I (of the presented 7 projects + 3 posters)
- 12:00PM – 1:30PM KDD Lunch break
- 1:30PM – 1:50PM Keynote by Nuria De Lama Sanchez (ATOS)
- 1:50PM – 3:00PM Presentations II (7 projects, 10 mins each)
- 3:00PM – 3:30PM Demos II (the presented 7 projects + 3 posters)
- 3:30PM – 4:00PM Coffee Break
- 4:00PM – 4:15pm Keynote by Marko Grobelnik (IJS)
- 4:15pm – 4:45pm Presentations III (3 projects, 10 mins each)
- 4:45pm – 5:15m Demos III (the presented 3 projects + 6 posters)
- 5:15pm – 5:30PM Keynote by Chaitanya Baru (NSF)
- 5:30PM – 6:00PM Panel

Presentations I and Demos I

- John Davies. CityVerve: Smarter Transport through data analytics.
- Blaž Kažič, Klemen Kenda and Dunja Mladenić. SUNSEED (Sustainable and robust networking for smart electricity distribution).
- Shang-Tse Chen, Cory Cornelius, Jason Martin and Duen Horng Chau. Physical Adversarial Attack on Object Detectors.
- Salman Taherizadeh, Blaz Novak, Marko Grobelnik, Marija Komatar and Sebastjan Vagaja. PrEstoCloud: Proactive Cloud Resources Management at the Edge for Efficient Real-Time Big Data Processing.
- Marko Grobelnik, Blaz Fortuna, Gregor Leban, Jan Rupnik and Andrej Muhic. Xlike - Cross-lingual Knowledge Extraction (FP7-ICT-2011-7).
- Joao Pita Costa, Luka Stopar, Paul Carlin, Flavio Fuart, Marko Grobelnik, Raghu Santanam, Chen Lu, Jonathan Wallace and Michaela Black. Mining Medline for the visualisation of a global perspective on biomedical knowledge.
- Jiaming Shen, Jinfeng Xiao, Yu Zhang, Carl Yang, Jingbo Shang, Jinda Han, Saurabh Sinha, Peipei Ping, Richard Weinshilboum, Zhiyong Lu and Jiawei Han. SetSearch+: Entity-Set-Aware Search and Mining for Scientific Literature.

Demos I

- Zala Herga, Luka Bradeško, Matej Senožetnik, Jasna Urbančič and Tine Šubic. OPTIMUM Project: Geospatial data analysis for sustainable mobility.
- Erik Novak, Blaz Fortuna and Primoz Skraba. X5GON Project Showcase.
- Richard Stevens, Gabriella Cattaneo, Helena Schwenk, Cristina Pepato, Christopher Ostberg Hansen, Nuria De Lama Sanchez, Tomas Pariente Lobo, Chiara Francalanci, Barbara Pernici, Angela Geronazzo, Paolo Giacomazzi,

Lucia Polidori, Arne Jørgen Berre, Volker Hoffman, Marko Grobelnik, James Hodson, Todor Ivanov, Roberto V. Zicari. DataBench: Evidence Based Big Data Benchmarking to Improve Business Performance.

Presentations II and Demos II

- Inna Novalija, Erik Novak and Marko Grobelnik. European Data Science Academy.
- Keqian Li, Ping Zhang, Honglei Liu, Hanwen Zha and Xifeng Yan. PoQaa: Deep Literature Mining for Open Access Publications.
- Hanwen Zha, Jiaming Shen, Keqian Li, Warren Greiff, Michelle Vanni, Jiawei Han and Xifeng Yan. FTS: Faceted Taxonomy Construction and Search for Scientific Publications.
- Aljaž Košmerlj, Patrik Zajec and Žan Palčič. EW-Shopp Project Showcase: Supporting Event and Weather-based Data Analytics and Marketing along the Shopper Journey.
- Jian Zhang, Richard Wydrowski, Zeqiang Wang, Sai Arrabolu, Keiji Kanazawa, Lech Gudalewicz, Hong Gao, Roman Roman Batoukov, Souren Aghajanyan and Kenneth Tran. Möbius: Online Anomaly Detection and Diagnosis.
- Matej Aleksandrov, Matej Batic, Miha Kadunc, Klemen Kenda, Grega Milcinski, Rok Mocnik, Devis Peressutti, Blaz Sovdat and Anze Zupanc. Democratising Earth Observation Big Data With eo-learn: Application to Water-Level Monitoring.
- Ulrich Germann, Alexandra Birch, Peggy van der Kreeft, Guntis Barzdins and Steve Renals. SUMMA: Scalable Understanding of Multilingual Media.

Demos II

- Zhou Shao, Jie Tang, Yutao Zhang, Bo Gao and Yongli Wang. Scholar Trajectory: Visualizing the Migration of Talents.
- Nilaksh Das, Madhuri Shanbhogue, Shang-Tse Chen, Fred Hohman, Siwei Li, Li Chen, Michael Kounavis and Duen Horng Chau. Compression to the Rescue: Defending from Adversarial Attacks Across Modalities.
- Mehdi Akbarian-Rastaghi, Behshid Behkamal and Asef Pourmasoumi. MEEM: Meeting of Events and Evidence on the Map.

Presentations III and Demos III

- Jingbo Shang, Qi Zhu, Jiaming Shen, Xuan Wang, Xiaotao Gu, Lance Kaplan, Timothy Harratty and Jiawei Han. AutoNet: Automated Network Construction and Exploration System from Domain-Specific Corpora.
- Samuel Matthews and Mary Bonin. The COTS Dashboard: Adapting Business Intelligence to help protect the Great Barrier Reef.
- Daniel Gartner, Rema Padman and Yiye Zhang. J-PLOS: Java-based Platform for Learning Order Sets.

Demos III

- Liyi Zhou and Chao Wu. Blockchain-based Sensory Data Acquisition and Validation.
- Ansgar Koene, Liz Dowthwaite, Giles Lane, Helena Webb, Virginia Portillo and Marina Jirotka. UnBias: Emancipating Users Against Algorithmic Biases for a Trusted Digital Economy.
- Daheng Wang, Meng Jiang, Xueying Wang, Tong Zhao, Qingkai Zeng and Nitesh Chawla. A Project Showcase for Planning Research Work towards Publishable Success.
- Noa Yehezkel. Identifying Exoplanets Using Deep Learning Methods.
- Eddy Maddalena, Luis Ibanez-Gonzalez, Elena Simperl, Mattia Zeni, Enrico Bignotti, Fausto Giunchiglia, Claus Stadler, Patrick Westphal, Luís P. F. Garcia and Jens Lehmann. QROWD: Because Big Data Integration is Humanly Possible.
- Ansgar Koene, Adam Leon Smith, Takashi Egawa, Sukanya Mandal and Yohko Hatada. IEEE P70xx, Establishing Standards for Ethical Technology.

KDD 2018 Conference Program

Monday August 20, 2018 - Detailed Program

Monday 7:00AM - 5:00PM, Registration, Registration Desk - Boulevard (Level 0)

Monday 5:30PM – 7:00PM, KDD 2018 Opening Session - ICC Auditorium (Level 0)

Monday August 20, 7:00PM – 9:30PM, Poster Reception Group 1: Research Track (Oral), Deep Learning Day, and Health Day – ICC Capital Hall (Level 0)

1. Subspace Network: Deep Multi-Task Censored Regression for Modeling Neurodegenerative Diseases
Mengying Sun (Michigan State University); Inci M. Baytas (Michigan State University); Liang Zhan (University of Wisconsin-Stout); Zhangyang Wang (Texas A&M University); Jiayu Zhou (Michigan State University)

2. Voxel Deconvolutional Networks for 3D Brain Image Labeling
Yongjun Chen (Washington State University); Hongyang Gao (Washington State University); Lei Cai (Washington State University); Min Shi (Washington State University); Dinggang Shen (The University of North Carolina at Chapel Hill); Shuiwang Ji (Washington State University)

3. Deep Variational Network Embedding in Wasserstein Space
Dingyuan Zhu (Tsinghua University); Peng Cui (Tsinghua University); Daixin Wang (Tsinghua University); Wenwu Zhu (Tsinghua University)

4. Exact and Consistent Interpretation for Piecewise Linear Neural Networks: A Closed Form Solution
Lingyang Chu (Simon Fraser University); Xia Hu (Simon Fraser University); Juhua Hu (Simon Fraser University); Lanjun Wang (Huawei Technology Co. Ltd); Jian Pei (JD.com and Simon Fraser University)

5. Towards Explanation of DNN-based Prediction with Guided Feature Inversion
Mengnan Du (Texas A&M University); Ninghao Liu (Texas A&M University); Qingquan Song (Texas A&M University); Xia Hu (Texas A&M University)

6. Efficient Large-Scale Fleet Management via Multi-Agent Deep Reinforcement Learning
Kaixiang Lin (Michigan State University); Renyu Zhao (AI Labs, Didi Chuxing); Zhe Xu (AI Labs, Didi Chuxing); Jiayu Zhou (Michigan State University)

7. Investor-Imitator: A Framework for Trading Knowledge Extraction
Yi Ding (Nanjing University of Aeronautics and Astronautics); Weiqing Liu (Microsoft); Jiang Bian (Microsoft); Daoqiang Zhang (Nanjing University of Aeronautics and Astronautics); Tie-Yan Liu (Microsoft)

8. Transcribing Content from Structural Images with Spotlight Mechanism
Yu Yin (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); Qi Liu (University of Science and Technology of China); Fuzheng Zhang (Microsoft); Xing Xie (Microsoft); Guoping Hu (iFLYTEK Research)

9. IntelliLight: a Reinforcement Learning Approach for Intelligent Traffic Light Control
Hua Wei (The Pennsylvania State University); Guanjie Zheng (The Pennsylvania State University); Huaxiu Yao (The Pennsylvania State University); Zhenhui Li (The Pennsylvania State University)

10. Supervised Reinforcement Learning with Recurrent Neural Network for Dynamic Treatment Recommendation

Lu Wang (East China Normal University); Wei Zhang (East China Normal University); Xiaofeng He (East China Normal University); Hongyuan Zha (Georgia Institute of Technology)

11. Active Feature Acquisition with Supervised Matrix Completion
Sheng-Jun Huang (NUAA); Miao Xu (RIKEN Center for AIP); Ming-Kun Xie (NUAA); Masashi Sugiyama (RIKEN Center for AIP); Gang Niu (The University of Tokyo); Songcan Chen (NUAA)

12. Discrete Ranking-based Matrix Factorization with Self-Paced Learning
Yan Zhang (University of Science and Technology of China); Haoyu Wang (University of Science and Technology of China); Defu Lian (University of Science and Technology of China); Ivor W. Tsang (University of Technology, Sydney); Hongzhi Yin (The University of Queensland); Guowu Yang (University of Science and Technology of China)

13. SUSTain: Scalable Unsupervised Scoring for Tensors and its Application to Phenotyping
Ioakeim Perros (Georgia Institute of Technology); Evangelos Papalexakis (University of California Riverside); Haesun Park (Georgia Institute of Technology); Richard Vuduc (Georgia Institute of Technology); Xiaowei Yan (Sutter Health); Christopher Defilippi (Inova Heart and Vascular Institute); Walter F. Stewart (Sutter Health); Jimeng Sun (Georgia Institute of Technology)

14. Disturbance Grassmann Kernels for Subspace-Based Learning
Junyuan Hong (University of Science and Technology of China); Huanhuan Chen (University of Science and Technology of China); Feng Lin (University of Science and Technology of China)

15. Optimal Distributed Submodular Optimization via Sketching
Mohammadhossein Bateni (Google); Hossein Esfandiari (Harvard University); Vahab Mirrokni (Google)

16. High-order Proximity Preserving Information Network Hashing
Defu Lian (University of Science and Technology of China); Kai Zheng (University of Science and Technology of China); Vincent W. Zheng (Advanced Digital Sciences Center); Yong Ge (University of Arizona); Longbing Cao (University of Technology, Sydney); Ivor W. Tsang (University of Technology, Sydney); Xing Xie (Microsoft)

17. Decoupled Learning for Factorial Marked Temporal Point Processes
Weichang Wu (Shanghai Jiao Tong University); Junchi Yan (Shanghai Jiao Tongl University); Xiaokang Yang (Shanghai Jiao Tong University); Hongyuan Zha (Georgia Institute of Technology)

18. A Dual Markov Chain Topic Model for Dynamic Environments
Ayan Acharya (CognitiveScale Inc.); Joydeep Ghosh (The University of Texas at Austin); Mingyuan Zhou (The University of Texas at Austin)

19. StockAssIstant: A Stock AI Assistant for Reliability Modeling of Stock Comments
Chen Zhang (360 Search Lab); Hao Wang (360 Search Lab); Changying Du (360 Search Lab); Yijun Wang (LineZone Data); Can Chen (LineZone Data); Hongzhi Yin (The University of Queensland)

20. You Are How You Drive: Peer and Temporal-Aware Representation Learning for Driving Behavior Analysis
Pengyang Wang (Missouri University of Science and Technology); Yanjie Fu (Missouri University of Science and Technology); Jiawei Zhang (Florida State University); Pengfei Wang (CNIC, Chinese Academy of Sciences); Yu Zheng (Urban Computing Business Unit, JD Finance); Charu Aggarwal (IBM)

21. Exploring the Urban Region-of-Interest through the Analysis of Online Map Search Queries
Ying Sun (ICT, CAS); Hengshu Zhu (Baidu Inc.); Fuzhen Zhuang (Institute of Computing Technology, Chinese Academy of Sciences); Jingjing Gu (NUAA, Nanjing); Qing He (Institute of Computing Technology, CAS)

22. Graph Classification using Structural Attention
John Boaz Lee (WPI); Ryan Rossi (Adobe Research); Xiangnan Kong (WPI)

23. SpotLight: Detecting Anomalies in Streaming Graphs
Dhivya Eswaran (Carnegie Mellon University); Christos Faloutsos (Carnegie Mellon University); Sudipto Guha (Amazon); Nina Mishra (Amazon)

24. Adversarial Attacks on Neural Networks for Graph Data
Daniel Zügner (Technical University of Munich); Amir Akbarnejad (Technical University of Munich); Stephan Günnemann (Technical University of Munich)

25. Multi-Round Influence Maximization
Lichao Sun (University of Illinois at Chicago); Weiran Huang (Tsinghua University); Philip Yu (University of Illinois at Chicago); Wei Chen (Microsoft)

26. EvoGraph: An Effective and Efficient Graph Upscaling Method for Preserving Graph Properties
Himchan Park (DGIST); Min-Soo Kim (DGIST)

27. XiaoIce Band:A Melody and Arrangement Generation Framework for Pop Music
Hongyuan Zhu (USTC); Qi Liu (USTC); Nicholas Jing Yuan (Microsoft); Chuan Qin (USTC); Jiawei Li (Soochow University); Kun Zhang (USTC); Guang Zhou (Microsoft); Furu Wei (Microsoft); Yuanchun Xu (Microsoft); Enhong Chen (USTC)

28. Cost-Effective Training of Deep CNNs with Active Model Adaptation
Sheng-Jun Huang (NUAA); Jia-Wei Zhao (NUAA); Zhao-Yang Liu (NUAA)

29. Smoothed Dilated Convolutions for Improved Dense Prediction
Zhengyang Wang (Washington State University); Shuiwang Ji (Washington State University)

30. Learning Deep Network Representations with Adversarially Regularized Autoencoders
Wenchao Yu (University of California, Los Angeles); Cheng Zheng (University of California, Los Angeles); Wei Cheng (NEC Labs America); Charu Aggarwal (IBM); Dongjin Song (NEC); Bo Zong (NEC); Haifeng Chen (NEC); Wei Wang (University of California, Los Angeles)

31. Deep r-th Root Rank Supervised Joint Binary Embedding for Multivariate Time Series Retrieval
Dongjin Song (NEC Labs America); Ning Xia (NEC Labs America); Wei Cheng (NEC Labs America); Haifeng Chen (NEC Labs America); Dacheng Tao (The University of Sydney)

32. Geographical Hidden Markov Tree for Flood Extent Mapping
Miao Xie (University of Alabama); Zhe Jiang (University of Alabama); Arpan Man Sainju (University of Alabama)

33. Dynamic Bike Reposition: A Spatio-Temporal Reinforcement Learning Approach
Yexin Li (The Hong Kong University of Science and Technology); Yu Zheng (Urban Computing Business Unit, JD Finance); Qiang Yang (The Hong Kong University of Science and Technology)

34. Simultaneous Urban Region Function Discovery and Popularity Estimation Via an Infinite Urbanization Process Model
Bang Zhang (CSIRO); Lelin Zhang (CSIRO); Ting Guo (CSIRO); Yang Wang (CSIRO); Fang Chen (CSIRO)

35. REST: A Reference-based Framework for Spatio-temporal Trajectory Compression
Yan Zhao (School of Computer Science and Technology, Soochow University); Shuo Shang (King Abdullah University of Science and Technology); Yu Wang (The Chinese University of Hong Kong); Bolong Zheng (School of Data and Computer

Science, Sun Yat-sen University); Quoc Viet Hung Nguyen (Griffith University); Kai Zheng (Big Data Research Center, University of Electronic Science and Technology of China)

36. Efficient Similar Region Search with Deep Metric Learning
Yiding Liu (Nanyang Technological University); Kaiqi Zhao (Nanyang Technological University); Gao Cong (Nanyang Technological University)

37. Node Similarity with q-Grams for Real-World Labeled Networks
Alessio Conte (University of Pisa); Gaspare Ferraro (Università di Pisa); Roberto Grossi (Università di Pisa); Andrea Marino (Università di Pisa); Kunihiko Sadakane (The University of Tokyo); Takeaki Uno (National Institute of Informatics)

38. LARC: Learning Activity-Regularized overlapping Communities across Time
Alexander Gorovits (University at Albany-SUNY); Ekta Gujral (University of California Riverside); Evangelos Papalexakis (University of California Riverside); Petko Bogdanov (University at Albany-SUNY)

39. NetLSD: Hearing the Shape of a Graph
Anton Tsitsulin (Hasso Plattner Institute); Davide Mottin (Hasso Plattner Institute); Panagiotis Karras (Aarhus University); Alexander Bronstein (Israel Institute of Technology); Emmanuel Müller (Hasso-Plattner-Institute)

40. Opinion Dynamics with Varying Susceptibility to Persuasion
Rediet Abebe (Cornell University); Jon Kleinberg (Cornell University); David Parkes (Harvard University); Charalampos Tsourkakis (Boston University)

41. FASTEN: Fast Sylvester Equation Solver for Graph Mining
Boxin Du (Arizona State University); Hanghang Tong (Arizona State University)

42. Network Connectivity Optimization: Fundamental Limits and Effective Algorithms
Chen Chen (Arizona State University); Ruiyue Peng (Translational MRI); Lei Ying (Arizona State University); Hanghang Tong (Arizona State University)

43. Unlearn What You Have Learned: Adaptive Crowd Teaching with Exponentially Decayed Memory Learners
Yao Zhou (Arizona State University); Arun Reddy Nelakurthi (Arizona State University); Jingrui He (Arizona State University)

44. Calibrated Multi-Task Learning
Feiping Nie (Department of Computer Science, OPTIMAL, Northwestern Polytechnical University); Zhanxuan Hu (Department of Computer Science, OPTIMAL, Northwestern Polytechnical University); Xuelong Li (OPTIMAL, Xian Institute of Optics and Precision Mechanics, Chinese Academy of Sciences)

45. Modeling Task Relationships in Multi-task Learning with Multi-gate Mixture-of-Experts
Jiaqi Ma (University of Michigan); Zhe Zhao (Google); Xinyang Yi (Google); Jilin Chen (Google); Lichan Hong (Google); Ed Chi (Google)

46. Complex Object Classification: A Multi-Modal Multi-Instance Multi-Label Deep Network with Optimal Transport
Yang Yang (NanJing university); Yi-Feng Wu (LAMDA Group, Nanjing University); De-Chuan Zhan (Nanjing University); Zhi-Bin Liu (Tencent); Yuan Jiang (Nanjing University)

47. Feedback-Guided Anomaly Discovery via Online Optimization
Md Amran Siddiqui (Oregon State University); Alan Fern (Oregon State University); Thomas Dietterich (Oregon State University); Ryan Wright (Galois, Inc.); Alec Theriault (Galois, Inc.); David Archer (Galois, Inc.)

48. Leveraging Meta-path based Context for Top N recommendation with Co-attention mechanism
Binbin Hu (Beijing University of Posts and Telecommunications); Chuan Shi (Beijing University of Posts and Telecommunications); Xin Zhao (School of Information, Renmin University of China); Philip S. Yu (University of Illinois at Chicago)

49. Efficient Attribute Recommendation with Probabilistic Guarantee
Chi Wang (Microsoft); Kaushik Chakrabarti (Microsoft)

50. Ranking Distillation: Learning Compact Ranking Models With High Performance for Recommender System
Jiaxi Tang (Simon Fraser University); Ke Wang (Simon Fraser University)

51. Algorithms for Hiring and Outsourcing in the Online Labor Market
Aris Anagnostopoulos (Sapienza University of Rome); Carlos Castillo (Universitat Pompeu Fabra); Adriano Fazzone (Sapienza University of Rome); Stefano Leonardi (Sapienza University of Rome); Evimaria Terzi (Boston University)

52. Multi-Pointer Co-Attention Networks for Recommendation
Yi Tay (Nanyang Technological University); Anh Tuan Luu (I2r); Siu Cheung Hui (Nanyang Technological University)

53. Multi-Type Itemset Embedding for Learning Behavior Success
Daheng Wang (University of Notre Dame); Meng Jiang (University of Notre Dame); Qingkai Zeng (University of Notre Dame); Zachary Eberhart (University of Notre Dame); Nitesh Chawla (University of Notre Dame)

54. Multi-label Learning with Highly Incomplete Data via Collaborative Embedding
Yufei Han (Symantec Research Labs); Guolei Sun (King Abdullah University of Science and Technology); Yun Shen (Symantec Research Labs); Xiangliang Zhang (King Abdullah University of Science and Technology)

55. Learning Representations of Ultrahigh-dimensional Data for Random Distance-based Outlier Detection
Guansong Pang (University of Technology, Sydney); Longbing Cao (Faculty of IT, University of Technology Sydney); Ling Chen (University of Technology, Sydney); Huan Liu (Arizona State University)

56. Interactive Paths Embedding for Semantic Proximity Search on Heterogeneous Graphs
Zemin Liu (Zhejiang University); Vincent W. Zheng (Advanced Digital Sciences Center); Zhou Zhao (Zhejiang University); Zhao Li (Alibaba Group); Hongxia Yang (Alibaba Group); Minghui Wu (Zhejiang University); Jing Ying (Zhejiang University)

57. Concepts-Bridges: Uncovering Conceptual Bridges Based on Biomedical Concept Evolution
Kishlay Jha (State University of New York at Buffalo); Guangxu Xun (State University of New York at Buffalo); Yaqing Wang (State University of New York at Buffalo); Vishrawas Gopalakrishnan (State University of New York at Buffalo); Aidong Zhang (State University of New York at Buffalo)

58. Local Latent Space Models for Top-N Recommendation
Evangelia Christakopoulou (University of Minnesota); George Karypis (University of Minnesota)

59. STAMP: Short-Term Attention/Memory Priority Model for Session-based Recommendation
Qiao Liu (University of Science and Technology of China); Yifu Zeng (University of Science and Technology of China); Refuoe Mokhosi (University of Science and Technology of China); Haibin Zhang (University of Science and Technology of China)

60. Multi-User Mobile Sequential Recommendation: An Efficient Parallel Computing Paradigm
Zeyang Ye (Stony Brook University); Lihao Zhang (Stony Brook University); Keli Xiao (Stony Brook University); Wenjun Zhou (University of Tennessee Knoxville); Yong Ge (University of Arizona); Yuefan Deng (Stony Brook University)

61. Trajectory-driven Influential Billboard Placement
Ping Zhang (Wuhan University); Zhifeng Bao (RMIT University); Yuchen Li (Singapore Management University); Guoliang Li (Tsinghua University); Yipeng Zhang (RMIT University); Zhiyong Peng (Wuhan University)

62. Offline Evaluation of Ranking Policies with Click Models
Shuai Li (The Chinese University of Hong Kong); Yasin Abbasi-Yadkori (Adobe Research); Branislav Kveton (Adobe Research); S. Muthukrishnan (Rutgers University); Vishwa Vinay (Adobe Research); Zheng Wen (Adobe Research)

63. xDeepFM: Combining Explicit and Implicit Feature Interactions for Recommender Systems
Jianxun Lian (University of Science and Technology of China); Xiaohuan Zhou (Beijing University of Posts and Telecommunications); Fuzheng Zhang (Microsoft); Zhongxia Chen (University of Science and Technology of China); Xing Xie (Microsoft); Guangzhong Sun (University of Science and Technology of China)

64. Finding Similar Exercises in Online Education Systems
Qi Liu (University of Science and Technology of China); Zai Huang (University of Science and Technology of China); Zhenya Huang (University of Science and Technology of China); Chuanren Liu (Decision Sciences and MIS Department, Drexel University); Enhong Chen (University of Science and Technology of China); Yu Su (School of Computer Science and Technology, Anhui University); Guoping Hu (iFLYTEK Research)

65. Arbitrary-Order Proximity Preserved Network Embedding
Ziwei Zhang (Tsinghua University); Peng Cui (Tsinghua University); Xiao Wang (Tsinghua University); Jian Pei (Simon Fraser University); Xuanrong Yao (Tsinghua University); Wenwu Zhu (Tsinghua University)

66. NetWalk: A Flexible Deep Embedding Approach for Anomaly Detection in Dynamic Networks
Wenchao Yu (University of California, Los Angeles); Wei Cheng (NEC Labs America); Charu Aggarwal (IBM); Kai Zhang (NEC); Haifeng Chen (NEC); Wei Wang (University of California, Los Angeles)

67. Hierarchical Taxonomy Aware Network Embedding
Jianxin Ma (Tsinghua University); Peng Cui (Tsinghua University); Xiao Wang (Tsinghua University); Wenwu Zhu (Tsinghua University)

68. Deep Recursive Network Embedding with Regular Equivalence
Ke Tu (Tsinghua University); Peng Cui (Tsinghua University); Xiao Wang (Tsinghua University); Philip S. Yu (University of Illinois at Chicago); Wenwu Zhu (Tsinghua University)

69. Embedding Temporal Network via Neighborhood Formation
Yuan Zuo (Beihang University); Guannan Liu (Beihang University); Hao Lin (Beihang University); Jia Guo (Beihang University); Xiaoqian Hu (Beihang University); Junjie Wu (Beihang University)

70. Stable Prediction across Unknown Environments
Kun Kuang (Tsinghua University); Peng Cui (Tsinghua University); Susan Athey (Stanford University); Ruoxuan Xiong (Stanford University); Bo Li (Tsinghua University)

71. A Treatment Engine by Predicting Next-Period Prescriptions
Bo Jin (Dalian University of Technology); Haoyu Yang (Dalian University of Technology); Leilei Sun (Tsinghua University); Chuanren Liu (Drexel University); Yue Qu (Dalian University of Technology); Jianing Tong (Tongji University)

72. Training Big Rancith Little Resources
Fabian Gieseke (University of Copenhagen); Christian Igel (University of Copenhagen)

73. R2SDH: Robust Rotated Supervised Discrete Hashing

Jie Gui (Rutgers University); Ping Li (Rutgers University)

74. Adversarial Detection with Model Interpretation
Ninghao Liu (Texas A&M University); Hongxia Yang (Alibaba Group); Xia Hu (Texas A&M University)

75. Risk Prediction on Electronic Healthcare Records with Prior Medical Knowledge
Fenglong Ma (SUNY Buffalo); Jing Gao (SUNY Buffalo); Qiuling Suo (SUNY Buffalo); Quanzeng You (Microsoft AI & Research); Jing Zhou (Eheath Inc); Aidong Zhang (SUNY Buffalo)

76. Multi-view Adversarially Learned Inference for Cross-domain Joint Distribution Matching
Changying Du (Institute of Software, Chinese Academy of Sciences); Changde Du (Institute of Automation, Chinese Academy of Sciences); Xingyu Xie (Nanjing University of Aeronautics and Astronautics); Chen Zhang (Qihoo 360 Search Lab); Hao Wang (Qihoo 360 Search Lab)

77. Learning Adversarial Networks for Semi-Supervised Text Classification via Policy Gradient
Yan Li (University of Michigan); Jieping Ye (University of Michigan)

78. Scalable Active Learning by Approximated Error Reduction
Weijie Fu (Hefei University of Technology); Meng Wang (Hefei University of Technology); Shijie Hao (Hefei University of Technology); Xindong Wu (University of Louisiana at Lafayette)

79. Learning Dynamics of Decision Boundaries without Additional Labeled Data
Atsutoshi Kumagai (NTT); Tomoharu Iwata (NTT)

80. Towards Mitigating the Class-Imbalance Problem for Partial Label Learning
Jing Wang (Southeast University); Min-Ling Zhang (Southeast University)

81. TaxoGen: Unsupervised Topic Taxonomy Construction by Adaptive Term Embedding and Clustering
Chao Zhang (University of Illinois at Urbana-Champaign); Fangbo Tao (Facebook); Xiusi Chen (University of Illinois at Urbana-Champaign); Jiaming Shen (University of Illinois at Urbana-Champaign); Meng Jiang (University of Notre Dame); Brian Sadler (U.S. Army Research Lab); Michelle Vanni (U.S. Army Research Lab); Jiawei Han (University of Illinois at Urbana-Champaign)

82. Discovering Non-Redundant K-means Clusterings in Optimal Subspaces
Dominik Mautz (Ludwig Maximilian University of Munich); Wei Ye (Ludwig Maximilian University of Munich); Claudia Plant (University of Vienna); Christian Böhm (Ludwig Maximilian University of Munich)

83. Scalable k-Means Clustering via Lightweight Coresets
Olivier Bachem (ETH Zurich); Mario Lucic (Google); Andreas Krause (ETH Zurich)

84. TextTruth: An Unsupervised Approach to Discover Trustworthy Information from Multi-Sourced Text Data
Hengtong Zhang (SUNY at Buffalo); Yaliang Li (Baidu Research); Fenglong Ma (SUNY Buffalo); Jing Gao (University at Buffalo); Lu Su (The State University of New York at Buffalo)

85. TruePIE: Discovering Reliable Patterns in Pattern-Based Information Extraction
Qi Li (University of Illinois at Urbana-Champaign); Meng Jiang (University of Notre Dame); Xikun Zhang (University of Illinois at Urbana-Champaign); Meng Qu (University of Illinois at Urbana-Champaign); Timothy Hanratty (US Army Research Laboratory); Jing Gao (University at Buffalo); Jiawei Han (University of Illinois at Urbana-Champaign)

86. Count-Min: Optimal Estimation and Tight Error Bounds using Empirical Error Distributions
Daniel Ting (Tableau Software)

87. Metric Learning from Probabilistic Labels
Mengdi Huai (State University of New York at Buffalo); Chenglin Miao (State University of New York at Buffalo); Yaliang Li (Baidu Research Big Data Lab); Qiuling Suo (State University of New York at Buffalo); Lu Su (State University of New York at Buffalo); Aidong Zhang (State University of New York at Buffalo)

88. New Robust Metric Learning Model Using Maximum Correntropy Criterion
Jie Xu (University of Pittsburgh); Lei Luo (University of Pittsburgh); Cheng Deng (Xidian University); Heng Huang (University of Pittsburgh)

89. A Unified Approach to Quantifying Algorithmic Unfairness: Measuring Individual & Group Unfairness via Inequality Indices
Till Speicher (MPI-SWS); Hoda Heidari (ETH Zurich); Nina Grgic-Hlaca (MPI-SWS); Krishna P. Gummadi (MPI-SWS); Adish Singla (MPI-SWS); Adrian Weller (University of Cambridge); Muhammad Bilal Zafar (MPI-SWS)

90. PCA by Determinant Optimization has no Spurious Local Optima
Raphael Hauser (University of Oxford); Armin Eftekhari (Alan Turing Institute); Heinrich Matzinger (Georgia Institute of Technology)

91. Spectral Clustering of Large-scale Data by Directly Solving Normalized Cut
Xiaojun Chen (Shenzhen University); Weijun Hong (Shenzhen University); Feiping Nie (Northwestern Polytechnical University); Dan He (Shenzhen University); Min Yang (Chinese Academy of Sciences); Joshua Z. Huang (Shenzhen University)

92. Multiview Clustering via Adaptively Weighted Procrustes
Feiping Nie (Northwestern Polytechnical University); Lai Tian (Northwestern Polytechnical University); Xuelong Li (Center for OPTIMAL, Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences)

93. Scalable Spectral Clustering Using Random Binning Features
Lingfei Wu (IBM); Pin-Yu Chen (IBM); Ian En-Hsu Yen (CMU); Fangli Xu (College of William & Mary); Yinglong Xia (Huawei Research); Charu Aggarwal (IBM)

94. Model-based Clustering of Short Text Streams
Jianhua Yin (School of Computer Science and Technology, Shandong University); Daren Chao (School of Computer Science and Technology, Shandong University); Zhongkun Liu (School of Computer Science and Technology, Shandong University); Wei Zhang (Shanghai Key Laboratory of Trustworthy Computing, East China Normal University); Xiaohui Yu (School of Computer Science and Technology, Shandong University); Jianyong Wang (Tsinghua University)

95. MiSoSouP: Mining Interesting Subgroups with Sampling and Pseudodimension
Matteo Riondato (Two Sigma Investments, LP); Fabio Vandin (University of Padova)

96. Dynamic Embeddings for User Profiling in Twitter
Shangsong Liang (King Abdullah University of Science and Technology); Xiangliang Zhang (King Abdullah University of Science and Technology); Zhaochun Ren (JD.com); Evangelos Kanoulas (University of Amsterdam)

97. TINET: Learning Invariant Networks via Knowledge Transfer
Chen Luo (Rice University); Zhengzhang Chen (NEC Laboratories America); Lu-An Tang (NEC Laboratories America); Anshumali Shrivastava (Rice University); Zhichun Li (NEC Laboratories America); Haifeng Chen (NEC Laboratories America); Jieping Ye (University of Michigan)

98. Can Who-Edits-What Predict Edit Survival

Ali Batuhan Yardım (Bilkent University); Victor Kristof (Ecole Polytechnique Fédérale de Lausanne); Lucas Maystre (Ecole Polytechnique Fédérale de Lausanne); Matthias Grossglauser (Ecole Polytechnique Fédérale de Lausanne)

99. An Efficient Two-Layer Mechanism for Privacy-Preserving Truth Discovery
Yaliang Li (Baidu Research); Chenglin Miao (SUNY Buffalo); Lu Su (SUNY Buffalo); Jing Gao (SUNY Buffalo); Qi Li (University of Illinois at Urbana-Champaign); Bolin Ding (Microsoft); Zhan Qin (SUNY Buffalo); Kui Ren (SUNY Buffalo)

100. Generalized Score Functions for Causal Discovery
Biwei Huang (Carnegie Mellon University); Kun Zhang (Carnegie Mellon University); Yizhu Lin (Carnegie Mellon University); Bernhard Schölkopf (Max-Planck Institute for Intelligent Systems); Clark Glymour (Carnegie Mellon University)

101. R-VQA: Learning Visual Relation Facts with Semantic Attention for Visual Question Answering
Pan Lu (Tsinghua University); Lei Ji (Microsoft); Wei Zhang (East China Normal University); Nan Duan (Microsoft); Ming Zhou (Microsoft); Jianyong Wang (Tsinghua University)

102. Learning and Interpreting Complex Distributions in Empirical Data
Chengxi Zang (Tsinghua University); Peng Cui (Tsinghua University); Wenwu Zhu (Tsinghua University)

103. Sequences of Sets
Austin Benson (Cornell University); Ravi Kumar (Google); Andrew Tomkins (Google)

104. Data Diff: Interpretable, Executable Summaries of Changes in Distributions for Data Wrangling
Charles Sutton (The University of Edinburgh); Timothy Hobson (The Alan Turing Institute); James Geddes (The Alan Turing Institute); Rich Caruana (Microsoft)

105. Concentrated Differentially Private Gradient Descent with Adaptive per-Iteration Privacy Budget
Jaewoo Lee (University of Georgia); Daniel Kifer (The Pennsylvania State University)

106. FAHES: A Robust Disguised Missing Values Detector
Mourad Ouzzani (Qatar Computing Research Institute, HBKU); Nan Tang (Qatar Computing Research Institute, HBKU); Ahmed Elmagarmid (Qatar Computing Research Institute, HBKU); Raul Castro Fernandez (CSAIL MIT); Abdulhakim A. Qahtan (Qatar Computing Research Institute, HBKU)

107. HeavyGuardian: Separate and Guard Hot Items in Data Streams
Tong Yang (Peking University); Junzhi Gong (Peking University); Haowei Zhang (Peking University); Lei Zou (Peking University); Lei Shi (SKLCS, Institute of Software, Chinese Academy of Sciences); Xiaoming Li (Peking University)

108 - 149. Posters for Deep Learning Day

150 - 170. Posters for Health Day

Tuesday August 21, 2018 - Detailed Program

Tuesday 7:00AM - 5:00PM, Registration, Registration Desk - Boulevard (Level 0)

Tuesday 9:30AM - 6:00PM, Sponsor Room - ICC Capital Suite Room 5 (Level 3)

Tuesday 9:30AM - 6:00PM, KDD Exhibit Hall - ICC Capital Hall (Level 0)

Tuesday 8:30AM - 12:00PM, Hands On Tutorial: GOAI: Accelerating the Scalable Data Science Environment with GPU-enabled Python - ICC Capital Suite Room 2+3+4 (Level 3)

Tuesday 8:30AM - 12:00PM, Hands On Tutorial: MXNet with focus on NLP - ICC Capital Suite Room 14+15+16 (Level 3)

Tuesday 9:30AM - 12:30PM, India Chapter Meeting -- ICC London Suite Room 3

Tuesday 8:00AM - 9:30AM, ICC Auditorium (Level 0)
Keynote Session 1: Data for Good
Chair: Hui Xiong
Speaker: **Jeannette Wing, Avanessians Director of Data Science and Professor of Computer Science, Columbia University**
Abstract: I use the tagline "Data for Good" to state paronomastically how we as a community should be promoting data science, especially in training future generations of data scientists. First, we should use data science for the good of humanity and society. Data science should be used to better people's lives. Data science should be used to improve relationships among people, organizations, and institutions. Data science, in collaboration with other disciplines, should be used to help tackle societal grand challenges such as climate change, education, energy, environment, healthcare, inequality, and social justice. Second, we should use data in a good manner. The acronym FATES suggests what "good" means. Fairness means that the models we build are used to make unbiased decisions or predictions. Accountability means to determine and assign responsibility to someone or to something for a judgment made by a machine. Transparency means being open and clear to the end user about how an outcome, e.g., a classification, a decision, or a prediction, is made. Ethics for data science means paying attention to both the ethical and privacy-preserving collection and use of data as well as the ethical decisions that the automated systems we build will make. Safety and security (yes, two words for one "S") means ensuring that the systems we build are safe (do no harm) and secure (guard against malicious behavior).

Tuesday 9:30AM - 10:00AM KDD Coffee Break, ICC Capital Hall (Level 0)

Tuesday 10:00AM - 12:00PM

Research Track Session RT1: Deep Learning I, ICC Capital Suite Room 8+11 (Level 3)
Chair: Shuiwang Ji

Subspace Network: Deep Multi-Task Censored Regression for Modeling Neurodegenerative Diseases
Mengying Sun (Michigan State University); Inci M. Baytas (Michigan State University); Liang Zhan (University of Wisconsin-Stout); Zhangyang Wang (Texas A&M University); Jiayu Zhou (Michigan State University)

Voxel Deconvolutional Networks for 3D Brain Image Labeling

Yongjun Chen (Washington State University); Hongyang Gao (Washington State University); Lei Cai (Washington State University); Min Shi (Washington State University); Dinggang Shen (The University of North Carolina at Chapel Hill); Shuiwang Ji (Washington State University)

Deep Variational Network Embedding in Wasserstein Space
Dingyuan Zhu (Tsinghua University); Peng Cui (Tsinghua University); Daixin Wang (Tsinghua University); Wenwu Zhu (Tsinghua University)

Exact and Consistent Interpretation for Piecewise Linear Neural Networks: A Closed Form Solution
Lingyang Chu (Simon Fraser University); Xia Hu (Simon Fraser University); Juhua Hu (Simon Fraser University); Lanjun Wang (Huawei Technology Co. Ltd); Jian Pei (JD.com and Simon Fraser University)

Towards Explanation of DNN-based Prediction with Guided Feature Inversion
Mengnan Du (Texas A&M University); Ninghao Liu (Texas A&M University); Qingquan Song (Texas A&M University); Xia Hu (Texas A&M University)

Applied Data Science Track Session ADS1: Commerce and Profiling, ICC Capital Suite Room 7+12 (Level 3)
Chair: Sreenivas Gollapudi

I Know You'll Be Back: Interpretable New User Clustering and Churn Prediction on a Mobile Social Application
Carl Yang (University of Illinois, Urbana Champaign & Snap Inc.); Xiaolin Shi (Snap Inc.); Luo Jie (Snap Inc.); Jiawei Han (University of Illinois, Urbana Champaign)

Perceive Your Users in Depth: Learning Universal User Representations from Multiple E-commerce Tasks
Yabo Ni (Alibaba Group); Dan Ou (Alibaba Group); Shichen Liu (Alibaba Group); Xiang Li (Alibaba Group); Wenwu Ou (Alibaba Group); Anxiang Zeng (Alibaba Group); Luo Si (Alibaba Group)

E-tail Product Return Prediction via Hypergraph-based Local Graph Cut
Jianbo Li (Three Bridges Capital); Jingrui He (Arizona State University); Yada Zhu (IBM Research)

OpenTag: Open Attribute Value Extraction from Product Profiles
Guineng Zheng (University of Utah); Subhabrata Mukherjee (Amazon.com); Xin Luna Dong (Amazon.com); Feifei Li (University of Utah)

Learning and Transferring IDs Representation in E-commerce
Kui Zhao (Alibaba Group); Yuechuan Li (Alibaba Group); Zhaoqian Shuai (Alibaba Group);Cheng Yang (Alibaba Group)

Research Track Session RT2: Reinforcement Learning, ICC Capital Suite Room 9+10 (Level 3)
Chair: Ravi Kumar

Efficient Large-Scale Fleet Management via Multi-Agent Deep Reinforcement Learning
Kaixiang Lin (Michigan State University); Renyu Zhao (AI Labs, Didi Chuxing); Zhe Xu (AI Labs, Didi Chuxing); Jiayu Zhou (Michigan State University)

Investor-Imitator: A Framework for Trading Knowledge Extraction
Yi Ding (Nanjing University of Aeronautics and Astronautics); Weiqing Liu (Microsoft); Jiang Bian (Microsoft); Daoqiang Zhang (Nanjing University of Aeronautics and Astronautics); Tie-Yan Liu (Microsoft)

Transcribing Content from Structural Images with Spotlight Mechanism
Yu Yin (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); Qi Liu (University of Science and Technology of China); Fuzheng Zhang (Microsoft); Xing Xie (Microsoft); Guoping Hu (iFLYTEK Research)

IntelliLight: a Reinforcement Learning Approach for Intelligent Traffic Light Control
Hua Wei (The Pennsylvania State University); Guanjie Zheng (The Pennsylvania State University); Huaxiu Yao (The Pennsylvania State University); Zhenhui Li (The Pennsylvania State University)

Supervised Reinforcement Learning with Recurrent Neural Network for Dynamic Treatment Recommendation
Lu Wang (East China Normal University); Wei Zhang (East China Normal University); Xiaofeng He (East China Normal University); Hongyuan Zha (Georgia Institute of Technology)

Research Track Session RT3: Matrices, Kernels and Sketches, ICC Capital Suite Room 6+13 (Level 3)
Chair: Qiaozhu Mei

Active Feature Acquisition with Supervised Matrix Completion
Sheng-Jun Huang (NUAA); Miao Xu (RIKEN Center for AIP); Ming-Kun Xie (NUAA); Masashi Sugiyama (RIKEN Center for AIP); Gang Niu (The University of Tokyo); Songcan Chen (NUAA)

Discrete Ranking-based Matrix Factorization with Self-Paced Learning
Yan Zhang (University of Science and Technology of China); Haoyu Wang (University of Science and Technology of China); Defu Lian (University of Science and Technology of China); Ivor W. Tsang (University of Technology, Sydney); Hongzhi Yin (The University of Queensland); Guowu Yang (University of Science and Technology of China)

SUSTain: Scalable Unsupervised Scoring for Tensors and its Application to Phenotyping
Ioakeim Perros (Georgia Institute of Technology); Evangelos Papalexakis (University of California Riverside); Haesun Park (Georgia Institute of Technology); Richard Vuduc (Georgia Institute of Technology); Xiaowei Yan (Sutter Health); Christopher Defilippi (Inova Heart and Vascular Institute); Walter F. Stewart (Sutter Health); Jimeng Sun (Georgia Institute of Technology)

Disturbance Grassmann Kernels for Subspace-Based Learning
Junyuan Hong (University of Science and Technology of China); Huanhuan Chen (University of Science and Technology of China); Feng Lin (University of Science and Technology of China)

Optimal Distributed Submodular Optimization via Sketching
Mohammadhossein Bateni (Google); Hossein Esfandiari (Harvard University); Vahab Mirrokni (Google)

High-order Proximity Preserving Information Network Hashing
Defu Lian (University of Science and Technology of China); Kai Zheng (University of Science and Technology of China); Vincent W. Zheng (Advanced Digital Sciences Center); Yong Ge (University of Arizona); Longbing Cao (University of Technology, Sydney); Ivor W. Tsang (University of Technology, Sydney); Xing Xie (Microsoft)

Applied Data Science Invited Session AI1: Commerce and Financial Applications, ICC Auditorium (Level 0)
Chair: Johannes Gehrke

Computational Advertising at Scale
Suju Rajan (Criteo)

Data Science at Flipkart - An Indian E-Commerce company
Mayur Datar (Flipkart)

Humans, Jobs, and the Economy: The Future of Finance in the Age of Big Data
James Hodson (Cognism, Ltd.)

Tuesday 12:00PM - 1:30PM, KDD Lunch - ICC Capital Hall (Level 0)

Tuesday 1:30PM - 5:30PM, Hands On Tutorial: Active learning and transfer learning at scale with R and Python - ICC Capital Suite Room 2+3+4 (Level 3)

Tuesday 1:30PM - 5:30PM, Hands On Tutorial: MXNet with focus on NLP - ICC Capital Suite Room 14+15+16 (Level 3)

Tuesday 1:30PM - 4:30PM, China Chapter Meeting - ICC London Suite Room 3

Tuesday 1:30PM - 5:00PM, KDD Cup Workshop - ICC Capital Suite Room 1 (Level 3)

Tuesday 1:30PM - 5:30PM, Poster Blitz Sessions - ICC Auditorium (Level 0)

1:30PM - 3:30PM Research Track Poster Blitz session: poster with IDs 1-74 in Poster Reception: Group 2
4:00PM - 5:30PM Applied Data Science Track Poster Blitz session: posters with IDs 75-146 in Poster Reception: Group 2

Tuesday 1:30PM - 3:30PM, Plenary Panel - ICC Capital Suite Room 8+11 (Level 3)

Tuesday 1:30PM - 3:30PM

Research Track Session RT4: Temporal and Spatial Data Mining I, ICC Capital Suite Room 7+12 (Level 3)
Chair: Albert Bifet

Decoupled Learning for Factorial Marked Temporal Point Processes
Weichang Wu (Shanghai Jiao Tong University); Junchi Yan (Shanghai Jiao Tongl University); Xiaokang Yang (Shanghai Jiao Tong University); Hongyuan Zha (Georgia Institute of Technology)

A Dual Markov Chain Topic Model for Dynamic Environments
Ayan Acharya (CognitiveScale Inc.); Joydeep Ghosh (The University of Texas at Austin); Mingyuan Zhou (The University of Texas at Austin)

StockAssIstant: A Stock AI Assistant for Reliability Modeling of Stock Comments
Chen Zhang (360 Search Lab); Hao Wang (360 Search Lab); Changying Du (360 Search Lab); Yijun Wang (LineZone Data); Can Chen (LineZone Data); Hongzhi Yin (The University of Queensland)

You Are How You Drive: Peer and Temporal-Aware Representation Learning for Driving Behavior Analysis
Pengyang Wang (Missouri University of Science and Technology); Yanjie Fu (Missouri University of Science and Technology); Jiawei Zhang (Florida State University); Pengfei Wang (CNIC, Chinese Academy of Sciences); Yu Zheng (Urban Computing Business Unit, JD Finance); Charu Aggarwal (IBM)
Exploring the Urban Region-of-Interest through the Analysis of Online Map Search Queries
Ying Sun (ICT, CAS); Hengshu Zhu (Baidu Inc.); Fuzhen Zhuang (Institute of Computing Technology, Chinese Academy of Sciences); Jingjing Gu (NUAA, Nanjing); Qing He (Institute of Computing Technology, CAS)

Applied Data Science Track Session ADS2: Planning and Forecasting in Finance and Commerce, ICC Capital Suite Room 9+10 (Level 3)
Chair: Dunja Mladenic

Large-Scale Order Dispatch in On-Demand Ride-Hailing Platforms: A Learning and Planning Approach
Zhe Xu (Didi Chuxing); Zhixin Li (Didi Chuxing); Qingwen Guan (Didi Chuxing); Dingshui Zhang (Didi Chuxing); Qiang Li (Didi Chuxing); Junxiao Nan (Didi Chuxing); Chunyang Liu (Didi Chuxing); Wei Bian (Didi Chuxing); Jieping Ye(Didi Chuxing)

Customized Regression Model for Airbnb Dynamic Pricing
Peng Ye (Airbnb Inc.); Julian Qian (Ant Financial); Jieying Chen (Airbnb Inc.); Chen-hung Wu (Airbnb Inc.);Yitong Zhou (Airbnb Inc); Spencer De Mars (Impira Inc.); Frank Yang (Airbnb Inc.); Li Zhang (Airbnb Inc.)

Audience Size Forecasting
Yeming Shi (Dstillery); Claudia Perlich (Dstillery); Rod Hook (Dstillery); Wickus Martin (Dstillery);Melinda Han Williams (Dstillery); Justin Moynihan (Dstillery); Patrick McCarthy (Dstillery); Peter Lenz (Dstillery); Reka Daniel-Weiner (Dstillery);Roger Cost (Dstillery)

Optimization of a SSP's Header Bidding Strategy using Thompson Sampling
Grégoire Jauvion (AlephD); Nicolas Grislain (AlephD); Pascal Dkengne Sielenou (IMT); Aurélien Garivier (IMT); Sébastien Gerchinovitz (IMT)

Applying the Delta Method in Metric Analytics
Alex Deng (Microsoft Corporation); Ulf Knoblich (Microsoft Corporation); Jiannan Lu (Microsoft Corporation)

Research Track Session RT5: Graph and Social Network I, ICC Capital Suite Room 6+13 (Level 3)
Chair: Jian Pei

Graph Classification using Structural Attention
John Boaz Lee (WPI); Ryan Rossi (Adobe Research); Xiangnan Kong (WPI)

SpotLight: Detecting Anomalies in Streaming Graphs
Dhivya Eswaran (Carnegie Mellon University); Christos Faloutsos (Carnegie Mellon University); Sudipto Guha (Amazon); Nina Mishra (Amazon)

Adversarial Attacks on Neural Networks for Graph Data
Daniel Zügner (Technical University of Munich); Amir Akbarnejad (Technical University of Munich); Stephan Günnemann (Technical University of Munich)

Multi-Round Influence Maximization
Lichao Sun (University of Illinois at Chicago); Weiran Huang (Tsinghua University); Philip Yu (University of Illinois at Chicago); Wei Chen (Microsoft)

EvoGraph: An Effective and Efficient Graph Upscaling Method for Preserving Graph Properties
Himchan Park (DGIST); Min-Soo Kim (DGIST)

Tuesday 3:30PM - 4:00PM, KDD Coffee Break, ICC Capital Hall (Level 0)

Tuesday 4:00PM - 6:00PM

Research Track Session RT6: Deep Learning II, ICC Capital Suite Room 8+11 (Level 3)
Chair: Slobodan Vucetic

XiaoIce Band:A Melody and Arrangement Generation Framework for Pop Music
Hongyuan Zhu (USTC); Qi Liu (USTC); Nicholas Jing Yuan (Microsoft); Chuan Qin (USTC); Jiawei Li (Soochow University); Kun Zhang (USTC); Guang Zhou (Microsoft); Furu Wei (Microsoft); Yuanchun Xu (Microsoft); Enhong Chen (USTC)

Cost-Effective Training of Deep CNNs with Active Model Adaptation
Sheng-Jun Huang (NUAA); Jia-Wei Zhao (NUAA); Zhao-Yang Liu (NUAA)

Smoothed Dilated Convolutions for Improved Dense Prediction

Zhengyang Wang (Washington State University); Shuiwang Ji (Washington State University)

Learning Deep Network Representations with Adversarially Regularized Autoencoders
Wenchao Yu (University of California, Los Angeles); Cheng Zheng (University of California, Los Angeles); Wei Cheng (NEC Labs America); Charu Aggarwal (IBM); Dongjin Song (NEC); Bo Zong (NEC); Haifeng Chen (NEC); Wei Wang (University of California, Los Angeles)

Deep r-th Root Rank Supervised Joint Binary Embedding for Multivariate Time Series Retrieval
Dongjin Song (NEC Labs America); Ning Xia (NEC Labs America); Wei Cheng (NEC Labs America); Haifeng Chen (NEC Labs America); Dacheng Tao (The University of Sydney)

Research Track Session RT7: Temporal and Spatial Data Mining II, ICC Capital Suite Room 7+12 (Level 3)
Chair: Jessie Li

Geographical Hidden Markov Tree for Flood Extent Mapping
Miao Xie (University of Alabama); Zhe Jiang (University of Alabama); Arpan Man Sainju (University of Alabama)

Dynamic Bike Reposition: A Spatio-Temporal Reinforcement Learning Approach
Yexin Li (The Hong Kong University of Science and Technology); Yu Zheng (Urban Computing Business Unit, JD Finance); Qiang Yang (The Hong Kong University of Science and Technology)

Simultaneous Urban Region Function Discovery and Popularity Estimation Via an Infinite Urbanization Process Model
Bang Zhang (CSIRO); Lelin Zhang (CSIRO); Ting Guo (CSIRO); Yang Wang (CSIRO); Fang Chen (CSIRO)

REST: A Reference-based Framework for Spatio-temporal Trajectory Compression
Yan Zhao (School of Computer Science and Technology, Soochow University); Shuo Shang (King Abdullah University of Science and Technology); Yu Wang (The Chinese University of Hong Kong); Bolong Zheng (School of Data and Computer Science, Sun Yat-sen University); Quoc Viet Hung Nguyen (Griffith University); Kai Zheng (Big Data Research Center, University of Electronic Science and Technology of China)

Efficient Similar Region Search with Deep Metric Learning
Yiding Liu (Nanyang Technological University); Kaiqi Zhao (Nanyang Technological University); Gao Cong (Nanyang Technological University)

Applied Data Science Track Session ADS3: Ranking and Making Recommendations, ICC Capital Suite Room 9+10 (Level 3)
Chair: Yana Volkovich

Online Parameter Selection for Web-based Ranking Problems
Deepak Agarwal (LinkedIn Corporation); Kinjal Basu (LinkedIn Corporation); Souvik Ghosh (LinkedIn Corporation); Ying Xuan (LinkedIn Corporation); Yang Yang (LinkedIn Corporation); Liang Zhang (LinkedIn Corporation)

Near Real-time Optimization of Activity-based Notifications
Yan Gao (LinkedIn Corporation); Viral Gupta (LinkedIn Corporation); Jinyun Yan (LinkedIn Corporation); Changji Shi (LinkedIn Corporation); Zhongen Tao (LinkedIn Corporation); PJ Xiao (LinkedIn Corporation); Curtis Wang (LinkedIn Corporation); Shipeng Yu (LinkedIn Corporation); Romer Rosales (LinkedIn Corporation); Ajith Muralidharan (LinkedIn Corporation); Shaunak Chatterjee (LinkedIn Corporation)

Real-time Personalization using Embeddings for Search Ranking at Airbnb
Mihajlo Grbovic (Airbnb, Inc.); Haibin Cheng (Airbnb, Inc.)

Graph Convolutional Neural Networks for Web-Scale Recommender Systems
Rex Ying (Stanford University & Pinterest); Ruining He (Pinterest); Kaifeng Chen (Pinterest & Stanford University); Pong Eksombatchai (Pinterest); William L. Hamilton (Stanford University); Jure Leskovec (Stanford University & Pinterest)

Q&R: A Two-Stage Approach toward Interactive Recommendation
Konstantina Christakopoulou (University of Minnesota); Alex Beutel (Google Inc); Rui Li (Google Inc);Sagar Jain (Google Inc); Ed H.Chi (Google Inc)

Research Track Session RT8: Graph and Social Network II, ICC Capital Suite Room 6+13 (Level 3)
Chair: Xintao Wu

Node Similarity with q-Grams for Real-World Labeled Networks
Alessio Conte (University of Pisa); Gaspare Ferraro (Università di Pisa); Roberto Grossi (Università di Pisa); Andrea Marino (Università di Pisa); Kunihiko Sadakane (The University of Tokyo); Takeaki Uno (National Institute of Informatics)

LARC: Learning Activity-Regularized overlapping Communities across Time
Alexander Gorovits (University at Albany-SUNY); Ekta Gujral (University of California Riverside); Evangelos Papalexakis (University of California Riverside); Petko Bogdanov (University at Albany-SUNY)

NetLSD: Hearing the Shape of a Graph
Anton Tsitsulin (Hasso Plattner Institute); Davide Mottin (Hasso Plattner Institute); Panagiotis Karras (Aarhus University); Alexander Bronstein (Israel Institute of Technology); Emmanuel Müller (Hasso-Plattner-Institute)

Opinion Dynamics with Varying Susceptibility to Persuasion
Rediet Abebe (Cornell University); Jon Kleinberg (Cornell University); David Parkes (Harvard University); Charalampos Tsourkakis (Boston University)

FASTEN: Fast Sylvester Equation Solver for Graph Mining
Boxin Du (Arizona State University); Hanghang Tong (Arizona State University)

Network Connectivity Optimization: Fundamental Limits and Effective Algorithms
Chen Chen (Arizona State University); Ruiyue Peng (Translational MRI); Lei Ying (Arizona State University); Hanghang Tong (Arizona State University)

Dissertation Award ICC Capital Suite Room 17 (Level 3)

Tuesday 4:30PM - 5:30PM, KDD Transfer Meeting, ICC Capital Lounge 5+6 (Level 2)

Tuesday 6:00PM - 7:00PM, ICC Auditorium (Level 0)
Keynote Session 2: Data Science for Financial Applications
Chair: Yike Guo
Speaker: **David Hand, Senior Research Investigator, Faculty of Natural Sciences, Department of Mathematics, Imperial College, London**
Abstract: Financial applications of data science provide a perfect illustration of the power of the shift from subjective decision-making to data- and evidence-driven decision- making. In the space of some fifty years, an entire sector of industry has been totally revolutionised. Such applications come in three broad areas: actuarial and insurance, consumer banking, and investment banking.

Actuarial and insurance work was one of the earliest adopters of data science ideas, dating from long before the term had been coined, and even before the computer had been invented. But these areas have fallen behind the latest

advances in data science technology - which means there is considerable potential for applying modern data analytic ideas.

Consumer banking has been described as one the first and major success stories of the data revolution. Dating from the 1960s, when the first credit cards were launched, techniques for analysing the massive data sets of consumer financial transactions have driven much of the development of data mining and data science ideas. But new model types, and new sources of data, are leading to a rich opportunity for significant developments.

In investment banking the “efficient market hypothesis” of classic economics says that it is impossible to predict the financial markets. But this is false - though very nearly true. That means that there is an opportunity to use advanced data analytic methods to exploit the tiny gap between conventional theory and what actually happens.

Other data science issues, such as data quality, ethics, and security, along with the need to understand the limitations of models, become particularly pointed in the context of financial applications.

Tuesday 7:00PM - 9:30PM, Poster Reception: Group 2 (Applied Data Science Track, Research Track Posters, and KDD Cup), ICC Capital Hall (Level 0)

1. Isolation Kernel and Its Effect on SVM
Kai Ming Ting (Federation University Australia); Yue Zhu (Nanjing University); Zhi-Hua Zhou (Nanjing University)

2. Robust Bayesian Kernel Machine via Stein Variational Gradient Descent for Big Data
Khanh Nguyen (Deakin University); Trung Le (PRaDA, Deakin University, Australia); Tu Dinh Nguyen (Deakin University); Dinh Phung (Deakin University); Geo?rey Webb (Monash University)

3. Sketched Follow-The-Regularized-Leader for Online Factorization Machine
Luo Luo (Shanghai Jiao Tong University); Wenpeng Zhang (Tsinghua University); Zhihua Zhang (Peking University); Wenwu Zhu (Tsinghua University); Tong Zhang (Tencent AI Lab); Jian Pei (Simon Fraser University)

4. An Empirical Evaluation of Sketching for Numerical Linear Algebra
Yogesh Dahiya (IIT Kanpur); Dimitris Konomis (CMU); David P. Woodruff (Carnegie Mellon University)

5. Large-Scale Learnable Graph Convolutional Networks
Hongyang Gao (Washington State University); Zhengyang Wang (Washington State University); Shuiwang Ji (Washington State University)

6. Active Opinion Maximization in Social Networks
Xinyue Liu (Worcester Polytechnic Institute); Xiangnan Kong (Worcester Polytechnic Institute); Philip Yu (University of Illinois at Chicago)

7. Quantifying and minimizing risk of conflict in social networks
Xi Chen (Dept. of Electronics and Information Systems, IDLab, Ghent University); Jefrey Lijffijt (Dept. of Electronics and Information Systems, IDLab, Ghent University); Tijl De Bie (Dept. of Electronics and Information Systems, IDLab, Ghent University)

8. D2K: Scalable Community Detection in Massive Networks via Small-Diameter k-Plexes
Alessio Conte (National Institute of Informatics, Japan); Tiziano De Matteis (University of Pisa); Daniele De Sensi (University of Pisa); Roberto Grossi (Universita' di Pisa); Andrea Marino (Universita' di Pisa); Luca Versari (Universita' di Pisa)

9. Butterfly Counting in Bipartite Networks
Seyed-Vahid Sanei-Mehri (Iowa State University); Ahmet Erdem Sariyuce (University at Buffalo); Srikanta Tirthapura (Iowa State University)

10. Approximating the Spectrum of a Graph
David Cohen-Steiner (INRIA); Weihao Kong (Stanford University); Christian Sohler (TU Dortmund); Gregory Valiant (Stanford University)

11. When Sentiment Analysis Meets Social Network: A Holistic User Behavior Modeling in Opinionated Data
Lin Gong (University of Virginia); Hongning Wang (University of Virginia)

12. Latent variable time-varying network inference
Federico Tomasi (DIBRIS - Universita degli studi di Genova); Veronica Tozzo (DIBRIS - Universita degli studi di Genova); Saverio Salzo (IIT); Alessandro Verri (DIBRIS - Universita degli studi di Genova)

13. Multilevel Wavelet Decomposition Network for Interpretable Time Series Analysis
Jingyuan Wang (Beihang University); Ze Wang (Beihang University); Jianfeng Li (Beihang University); Junjie Wu (Beihang University)

14. Enhancing Predictive Modeling of Nested Spatial Data through Group-Level Feature Disaggregation
Boyang Liu (Michigan State University); Pang-Ning Tan (Michigan State University); Jiayu Zhou (Michigan State University)

15. Deep Adversarial Learning for Multi-Modality Missing Data Completion
Lei Cai (Washington State University); Zhengyang Wang (Washington State University); Hongyang Gao (Washington State University); Dinggang Shen (The University of North Carolina at Chapel Hill); Shuiwang Ji (Washington State University)

16. Dual Memory Neural Computer for Asynchronous Two-view Sequential Learning
Hung Le (Deakin University); Truyen Tran (Deakin University); Svetha Venkatesh (Deakin University)

17. Parsing to Programs: A Framework for Situated QA
Mrinmaya Sachan (Carnegie Mellon University); Eric P. Xing (Carnegie Mellon University)

18. Quantifying Uncertainty in Discrete-Continuous and Skewed Data with Bayesian Deep Learning
Thomas Vandal (Northeastern University); Evan Kodra (risQ Inc.); Jennifer Dy (Northeastern University); Sangram Ganguly (BAERI and NASA Ames Research Center); Ramakrishna Nemani (NASA); Auroop Ganguly (Northeastern University)

19. Coupled Context Modeling for Deep Chit-Chat: Towards Conversations between Human and Computer
Rui Yan (Peking University); Dongyan Zhao (Peking University)

20. Multi-Cast Attention Networks
Yi Tay (Nanyang Technological University); Anh Tuan Luu (Institute for Infocomm Research, Singapore); Siu Cheung Hui (Nanyang Technological University)

21. RAIM: Recurrent Attentive and Intensive Modeling of Multimodal Continuous Patient Monitoring Data

Yanbo Xu (Georgia Institute of Technology); Siddharth Biswal (Georgia Institute of Technology); Shriprasad Deshpande (Emory University School of Medicine); Kevin Maher (Emory University School of Medicine); Jimeng Sun (Georgia Institute of Technology)

22. Deep Censored Learning of the Winning Price in the Real Time Bidding
Wush Chi-Hsuan Wu (National Taiwan University); Mi-Yen Yeh (Institute of Information Science, Academia Sinica); Ming-Syan Chen (National Taiwan University)

23. DeepInf: Social Influence Prediction with Deep Learning
Jiezhong Qiu (Tsinghua University); Jian Tang (HEC Montreal & Montreal Institute for Learning Algorithms (MILA)); Hao Ma (Microsoft); Yuxiao Dong (Microsoft); Kuansan Wang (Microsoft); Jie Tang (Tsinghua University)

24. Deep Multi-Output Forecasting: Learning to Accurately Predict Blood Glucose Trajectories
Ian Fox (University of Michigan); Lynn Ang (Department of Internal Medicine, Division of Metabolism, Endocrinology and Diabetes, University of Michigan); Mamta Jaiswal (Department of Internal Medicine, Division of Metabolism, Endocrinology and Diabetes, University of Michigan); Rodica Pop-Busui (Department of Internal Medicine, Division of Metabolism, Endocrinology and Diabetes, University of Michigan); Jenna Wiens (University of Michigan)

25. Not Just Privacy: Improving Performance of Private Deep Learning in Mobile Cloud
Ji Wang (National University of Defense Technology); Jianguo Zhang (University of Illinois at Chicago); Weidong Bao (National University of Defense Technology); Xiaomin Zhu (National University of Defense Technology); Bokai Cao (University of Illinois at Chicago); Philip S. Yu (University of Illinois at Chicago)

26. SPARC: Self-Paced Network Representation for Few-Shot Rare Category Characterization
Dawei Zhou (Arizona State University); Jingrui He (Arizona State University); Hongxia Yang (Alibaba Group); Wei Fan (Tencent Medical AI Lab)

27. PME: Projected Metric Embedding on Heterogeneous Networks for Link Prediction
Hongxu Chen (The University of Queensland); Hongzhi Yin (The University of Queensland); Weiqing Wang (The University of Queensland); Hao Wang (Qihoo 360 Inc); Quoc Viet Hung Nguyen (Griffith University); Xue Li (The University of Queensland)

28. Content to Node: Self-translation Network Embedding
Jie Liu (Nankai University); Zhicheng He (Nankai University); Lai Wei (Nankai University); Yalou Huang (Nankai University)

29. On Interpretation of Network Embedding via Taxonomy Induction
Ninghao Liu (Texas A&M University); Xiao Huang (Texas A&M University); Jundong Li (Arizona State University); Xia Hu (Texas A&M University)

30. Easing Embedding Learning by Comprehensive Transcription of Heterogeneous Information Networks
Yu Shi (University of Illinois at Urbana-Champaign); Qi Zhu (University of Illinois Urbana-Champaign); Fang Guo (University of Illinois Urbana-Champaign); Chao Zhang (University of Illinois Urbana-Champaign); Jiawei Han (University of Illinois at Urbana-Champaign)

31. Recurrent Binary Embedding for GPU-Enabled Exhaustive Retrieval from Billion-Scale Semantic Vectors
Ying Shan (Microsoft); Jian Jiao (Microsoft); Jie Zhu (Microsoft); Jc Mao (Microsoft)

32. Learning Structural Node Embeddings via Diffusion Wavelets
Claire Donnat (Stanford University); Marinka Zitnik (Stanford University); David Hallac (Stanford University); Jure Leskovec (Stanford University)

33. Multi-task Representation Learning for Travel Time Estimation
Yaguang Li (University of Southern California); Kun Fu (DiDi AI Labs); Zheng Wang (DiDi AI Labs); Cyrus Shahabi (University of Southern California); Jieping Ye (DiDi AI Labs); Yan Liu (University of Southern California)

34. Self-Paced Network Embedding
Hongchang Gao (University of Pittsburgh); Heng Huang (University of Pittsburgh)

35. Neural Memory Streaming Recommender Networks with Adversarial Training
Qinyong Wang (The University of Queensland); Hongzhi Yin (The University of Queensland); Zhiting Hu (Language Technologies Institute, Carnegie Mellon University); Defu Lian (School of Computer Science and Engineering, University of Electronic Science and Technology of China); Hao Wang (360 Search Lab); Zi Huang (The University of Queensland)

36. Learning from History and Present: Next-item Recommendation via Discriminatively Exploiting User Behavior
Zhi Li (University of Science and Technology of China); Hongke Zhao (University of Science and Technology of China); Qi Liu (University of Science and Technology of China); Zhenya Huang (University of Science and Technology of China); Tao Mei (JD.com); Enhong Chen (University of Science and Technology of China)

37. Context-aware Academic Collaborator Recommendation
Zheng Liu (The Hong Kong University of Science and Technology); Xing Xie (Microsoft); Lei Chen (The Hong Kong University of Science and Technology)

38. Route Recommendations for Idle Taxi Drivers: Find Me the Shortest Route to a Customer!
Nandani Garg (IIT Madras); Sayan Ranu (IIT Delhi)

39. Explanation Mining: Post Hoc Interpretability of Latent Factor Models for Recommendation Systems
Georgina Peake (Channel 4 Television); Jun Wang (Computer Science, University College London)

40. Multi-Label Inference for Crowdsourcing
Jing Zhang (Nanjing University of Science and Technology); Xindong Wu (University of Louisiana at Lafayette)

41. Extremely Fast Decision Tree
Chaitanya Manapragada (Monash University); Geoffrey Webb (Monash University); Mahsa Salehi (Monash University)

42. Classifying and Counting with Recurrent Contexts
Denis Reis (Universidade de São Paulo), André Maletzke (Universidade de São Paulo), Diego F. Silva (Universidade Federal de São Carlos), Gustavo E. A. P. A. Batista (Universidade de São Paulo)

43. Prediction-time Efficient Classification Using Computational Dependencies in Feature Generation
Liang Zhao (George Mason University); Amir Alipour-Fanid (George Mason University); Martin Slawski (George Mason University); Kai Zeng (George Mason University)

44. Efficient Mining of the Most Significant Patterns with Permutation Testing
Leonardo Pellegrina (University of Padova); Fabio Vandin (University of Padova)

45. Identifying Sources and Sinks in the Presence of Multiple Agents with Gaussian Process Vector Calculation
Adam Derek Cobb (University of Oxford); Richard Everett (University of Oxford); Andrew Markham (University of Oxford); Stephen Roberts (University of Oxford)

46. Fairness of Exposure in Rankings
Ashudeep Singh (Cornell University); Thorsten Joachims (Cornell University)

47. xStream: Outlier Detection in Feature-Evolving Data Streams
Emaad Ahmed Manzoor (Carnegie Mellon University); Hemank Lamba (Carnegie Mellon University); Leman Akoglu (Carnegie Mellon University)

48. HiExpan: Task-Guided Tchical Tree Expansion
Jiaming Shen (University of Illinois at Urbana-Champaign); Zeqiu Wu (University of Illinois at Urbana-Champaign); Dongming Lei (University of Illinois at Urbana-Champaign); Chao Zhang (University of Illinois at Urbana-Champaign); Xiang Ren (University of Southern California); Michelle T. Vanni (U.S. Army Research Laboratory); Brain M. Sadler (U.S. Army Research Laboratory); Jiawei Han (University of Illinois at Urbana-Champaign)

49. Accurate and Fast Asymmetric Locality-Sensitive Hashing Scheme for Maximum Inner Product Search
Qiang Huang (Sun Yat-Sen University); Guihong Ma (Sun Yat-Sen University); Jianlin Feng (Sun Yat-Sen University); Qiong Fang (South China University of Technology); Anthony K. H. Tung (National University of Singapore)

50. Variable Selection and Task Grouping for Multi-Task Learning
Junyong Jeong (POSSTECH); Chi-Hyuck Jun (POSTECH)

51. Automated Local Regression Discontinuity Design Discovery
William Herlands (Carnegie Mellon University); Edward McFowland Iii (University of Minnesota); Andrew Wilson (Cornell University); Daniel Neill (Carnegie Mellon University)

52. Accelerated Equivalence Structure Extraction via Pairwise Incremental Search
Seiya Satoh (National Institute of Advanced Industrial Science and Technology); Yoshinobu Takahashi (The University of Electro-Communications); Hiroshi Yamakawa (DWANGO Co., Ltd.)

53. DILOF: Effective and Memory Efficient Local Outlier Detection in Data Streams
Gyoung S. Na (Pohang University of Science and Technology (POSTECH)); Donghyun Kim (Pohang University of Science and Technology (POSTECH),); Hwanjo Yu (Pohang University of Science and Technology (POSTECH))

54. Demand-Aware Charger Planning for Electric Vehicle Sharing
Bowen Du (SKLSDE Lab and BDBC, Beihang University); Yongxin Tong (SKLSDE Lab and BDBC, Beihang University); Zimu Zhou (Laboratory TIK, ETH Zurich); Qian Tao (SKLSDE Lab and BDBC, Beihang University); Wenjun Zhou (Department of BAS, University of Tennessee)

55. Optimizing cluster-based randomized experiments under monotonicity

Jean Pouget-Abadie (Harvard University); David Parkes (Harvard University); Vahab Mirrokni (Google); Edoardo M. Airoldi (Harvard University)

56. Learning Credible Models
Jiaxuan Wang (University of Michigan); Jeeheh Oh (University of Michigan); Haozhu Wang (University of Michigan); Jenna Wiens (University of Michigan)

57. A Distributed Quasi-Newton Algorithm for Empirical Risk Minimization with Nonsmooth Regularization
Ching-Pei Lee (University of Wisconsin-Madison); Cong Han Lim (University of Wisconsin-Madison); Stephen Wright (University of Wisconsin-Madison)

58. An Iterative Global Structure-Assisted Labeled Network Aligner
Abdurrahman Yaşar (Georgia Institute of Technology) and Ümit V. Çatalyürek (Georgia Institute of Technology)

59. BagMinHash - Minwise Hashing Algorithm for Weighted Sets
Otmar Ertl (Dynatrace)

60. Stabilizing Reinforcement Learning in Dynamic Environment with Application to Online Recommendation
Shi-Yong Chen (Nanjing University); Yang Yu (Nanjing University); Qing Da (Alibaba Group); Jun Tan (Alibaba Group); Hai-Kuan Huang (Alibaba Group); Hai-Hong Tang (Alibaba Group)

61. Online Adaptive Asymmetric Active Learning for Budgeted Imbalanced Data
Yifan Zhang (South China University of Technology); Peilin Zhao (South China University of Technology); Jiezhang Cao (South China University of Technology); Wenye Ma (South China University of Technology); Junzhou Huang (University of Texas at Arlington); Qingyao Wu (South China University of Technology); Mingkui Tan (South China University of Technology)

62. Transfer Learning via Feature Isomorphism Discovery
Shimin Di (The Hong Kong University of Science and Technology); Jingshu Peng (The Hong Kong University of Science and Technology); Yanyan Shen (Shanghai Jiao Tong University); Lei Chen (The Hong Kong University of Science and Technology)

63. Semi-Supervised Generative Adversarial Network for Gene Expression Inference
Kamran Ghasedi (University of Pittsburgh); Xiaoqian Wang (University of Pittsburgh); Heng Huang (University of Pittsburgh)

64. New Incremental Learning Algorithm for Semi-Supervised Support Vector Machine
Bin Gu (University of Pittsburgh); Xiao-Tong Yuan (Nanjing University of Information Science & Technology); Songcan Chen (Nanjing University of Aeronautics and Astronautics); Heng Huang (University of Pittsburgh)

65. Are your data gathered?
Alban Siffer (Univ. Rennes, Inria, CNRS, IRISA, Amossys); Pierre-Alain Fouque (Univ. Rennes, CNRS, IRISA, IUF); Alexandre Termier (Univ. Rennes, Inria, CNRS, IRISA); Christine Largou (Univ. Rennes, Inria, CNRS, IRISA, AGROCAMPUS OUEST)

66. On the Generative Discovery of Structured Medical Knowledge

Chenwei Zhang (University of Illinois at Chicago); Yaliang Li (Baidu Research Big Data Lab); Nan Du (Tencent Medical AI Lab); Wei Fan (Tencent Medical AI Lab); Philip S. Yu (University of Illinois at Chicago)

67. Unlocking the Value of Privacy: Trading Aggregate Statistics over Private Correlated Data
Chaoyue Niu (Shanghai Jiao Tong University); Zhenzhe Zheng (Shanghai Jiao Tong University); Fan Wu (Shanghai Jiao Tong University); Shaojie Tang (The University of Texas at Dallas); Xiaofeng Gao (Shanghai Jiao Tong University); Guihai Chen (Shanghai Jiao Tong University)

68. Learning-to-Ask: Knowledge Acquisition via 20 Questions
Yihong Chen (Tsinghua University); Bei Chen (Microsoft); Xuguang Duan (Tsinghua University); Jian-Guang Lou (Microsoft); Yue Wang (Tsinghua University); Wenwu Zhu (Tsinghua University); Yong Cao (Shanghai Higgs Intelligence & Technology Co. Ltd.)

69. Discovering Models from Structural and Behavioral Brain Imaging Data
Zilong Bai (University of California, Davis); Buyue Qian (Department of Computer Science Xi'An Jiaotong University); Ian Davidson (University of California, Davis)

70. On Discrimination Discovery and Removal in Ranked Data using Causal Graph
Yongkai Wu (University of Arkansas); Lu Zhang (University of Arkansas); Xintao Wu (University of Arkansas)

71. RedThread: Active Search of Connections for Case Building and Combating Human Trafficking Online
Reihaneh Rabbany (Carnegie Mellon University); David Bayani (Carnegie Mellon University's Auton Laboratory); Artur Dubrawski (Carnegie Mellon University)

72. Towards Evolutionary Compression
Yunhe Wang (Peking University); Chang Xu (The University of Sydney); Jiayan Qiu (The University of Sydney); Chao Xu (Peking University); Dacheng Tao (The University of Sydney)

73. Safe Triplet Screening for Distance Metric Learning
Tomoki Yoshida (Nagoya Institute of Technology); Ichiro Takeuchi (Nagoya Institute of Technology, National Institute for Material Science, RIKEN Center for Advanced Intelligence Project); Masayuki Karasuyama (Nagoya Institute of Technology, National Institute for Material Science, Japan Science and Technology Agency)

74. Hyperparameter Importance Across Datasets
Jan N. van Rijn (University of Freiburg); Frank Hutter (University of Freiburg)

75. Deep Interest Network for Click-Through Rate Prediction
Guorui Zhou (Alibaba Group), Xiaoqiang Zhu (Alibaba Group), Chengru Song (Alibaba Group), Ying Fan (Alibaba Group), Han Zhu (Alibaba Group), Xiao Ma (Alibaba Group), Yanghui Yan (Alibaba Group), Junqi Jin (Alibaba Group), Han Li (Alibaba Group), Kun Gai (Alibaba Group)

76. Improving Box Office Result Predictions for Movies Using Consumer-Centric Models
Rui Paulo Ruhrländer (Cinuru Research GmbH), Martin Boissier (Hasso Plattner Institute), Matthias Uflacker (Hasso Plattner Institute)

77. COTA: Improving the Speed and Accuracy of Customer Support through Ranking and Deep Networks

Piero Molino (Uber AI Labs), Huaixiu Zheng (Uber Technologies), Yi-Chia Wang (Uber Technologies)

78. Exploring Student Check-In Behavior for Improved Point-of-Interest Prediction,Mengyue Hang (Purdue University), Ian Pytlarz (Purdue University), Jennifer Neville (Purdue University)

79. Learning Tree-based Deep Model for Recommender Systems
Han Zhu (Alibaba Group), Xiang Li (Alibaba Group), Pengye Zhang (Alibaba Group), Guozheng Li (Alibaba Group), Jie He (Alibaba Group), Han Li (Alibaba Group), Kun Gai (Alibaba Group)

80. Reinforcement Learning to Rank in E-Commerce Search Engine: Formalization, Analysis, and Application
Yujing Hu (Alibaba Group), Qing Da (Alibaba Group), Anxiang Zeng (Alibaba Group), Yang Yu (Nanjing University), Yinghui Xu (Zhejiang Cainiao Supply Chain Management Co., Ltd.),

81. Billion-scale Commodity Embedding for E-commerce Recommendation in Alibaba
Jizhe Wang (Alibaba Group), Pipei Huang (Alibaba Group), Huan Zhao (Hong Kong University of Science and Technology), Zhibo Zhang (Alibaba Group), Binqiang Zhao (Alibaba Group), Dik Lun Lee (Hong Kong University of Science and Technology)

82. Recommendations with Negative Feedback via Pairwise Deep Reinforcement Learning
Xiangyu Zhao (Michigan State University), Liang Zhang (JD.com), Zhuoye Ding (JD.com), Long Xia (JD.com), Jiliang Tang (Michigan State University), Dawei Yin (JD.com)

83. Product Characterisation towards Personalisation
Ângelo Cardoso (ASOS.com), Fabio Daolio (ASOS.com), Saúl Vargas (ASOS.com)

84. Buy It Again: Modeling Repeat Purchase Recommendations
Rahul Bhagat (Amazon.com Inc.), Srevatsan Muralidharan (Amazon.com Inc.), Alex Lobzhanidze (Amazon.com Inc.), Shankar Vishwanath (Amazon.com Inc.)

85. Automated Audience Segmentation Using Reputation Signals
Maria Daltayanni (University of San Francisco (USF)), Ali Dasdan (KD Consulting), Luca de Alfaro (University of California, Santa Cruz)

86. A0383p, Dynamic Pricing under Competition on Online Marketplaces: A Data-Driven Approach
Rainer Schlosser (Hasso Plattner Institute), Martin Boissier (Hasso Plattner Institute)

87. Distributed Collaborative Hashing and Its Applications in Ant Financial
Chaochao Chen (Ant Financial Services Group), Ziqi Liu (Ant Financial Services Group), Peilin Zhao (Ant Financial Services Group), Longfei Li (Ant Financial Services Group), Jun Zhou (Ant Financial Services Group), Xiaolong Li (Ant Financial Services Group)

88. Optimal Allocation of Real-Time-Bidding and Direct Campaigns
Grégoire Jauvion (AlephD), Nicolas Grislain (AlephD)

89. Tax Fraud Detection for Under-Reporting Declarations Using an Unsupervised Machine Learning Approach

Daniel de Roux (Universidad de los Andes), Boris Peréz (Universidad de los Andes & Univ. Francisco de Paula Santander), Andrés Moreno (Universidad de los Andes), Maria del Pilar Villamil (Universidad de los Andes), César Figueroa (Secretaría de Hacienda Distrital)

90. Adaptive Paywall Mechanism for Digital News Media
Heidar Davoudi (York University), Aijun An (York University), Morteza Zihayat (Ryerson University), Gordon Edall (The Globe and Mail)

91. Scalable Query N-Gram Embedding for Improving Matching and Relevance in Sponsored Search
Xiao Bai (Yahoo Research), Erik Ordentlich (Yahoo Research), Yuanyuan Zhang (Yahoo Research), Andy Feng (Nvidia), Adwait Ratnaparkhi (Roku Inc.), Reena Somvanshi (Oath Inc.), Aldi Tjahjadi (Oath Inc.)

92. Deep Reinforcement Learning for Sponsored Search Real-time Bidding
Jun Zhao (Alibaba Group), Guang Qiu (Alibaba Group), Ziyu Guan (Xidian University), Wei Zhao (Xidian University), Xiaofei He (Zhejiang University)

93. Lessons Learned from Developing and Deploying a Large-Scale Employer Name Normalization System for Online Recruitment
Qiaoling Liu (CareerBuilder LLC), Josh Chao (CareerBuilder LLC), Thomas Mahoney (CareerBuilder LLC), Alan Chern (CareerBuilder LLC), Chris Min (CareerBuilder LLC), Faizan Javed (CareerBuilder LLC), Valentin Jijkoun (Textkernel BV)

94. Career Transitions and Trajectories: A Case Study in Computing
Tara Safavi (University of Michigan), Maryam Davoodi (Purdue University), Danai Koutra (University of Michigan)

95. Dynamic Recommendations for Sequential Hiring Decisions in Online Labor Markets
Marios Kokkodis (Boston College)

96. Assessing Candidate Preference through Web Browsing History
Giovanni Comarela (Federal University of Viçosa), Ramakrishnan Durairajan (University of Oregon), Paul Barford (University of Wisconsin-Madison & comScore, Inc.), Dino Christenson (Boston University), Mark Crovella (Boston University)

97. How LinkedIn Economic Graph Bonds Information and Product: Applications in LinkedIn Salary
Xi Chen (LinkedIn Corporation), Yiqun Liu (LinkedIn Corporation), Liang Zhang (LinkedIn Corporation), Krishnaram Kenthapadi (LinkedIn Corporation)

98. Deep Distributed Fusion Network for Air Quality Prediction
Xiuwen Yi (Southwest Jiaotong University & JD Finance), Junbo Zhang (JD Finance & Southwest Jiaotong University), Zhaoyuan Wang (Southwest Jiaotong University & JD Finance), Tianrui Li (Southwest Jiaotong University), Yu Zheng (JD Finance, Southwest Jiaotong University & Xidian University)

99. State Space Models for Forecasting Water Quality Variables
Joel Janek Dabrowski (Data61, CSIRO), Ashfaqur Rahman (Data61, CSIRO), Andrew George (Data61, CSIRO), Stuart Arnold (CSIRO), John McCulloch (Data61, CSIRO)

100. Infrastructure Quality Assessment in Africa using Satellite Imagery and Deep Learning

Barak Oshri (Stanford University), Annie Hu (Stanford University), Peter Adelson (Stanford University), Xiao Chen (Stanford University), Pascaline Dupas (Stanford University), Jeremy Weinstein (Stanford University), Marshall Burke (Stanford University), David Lobell (Stanford University), Stefano Ermon (Stanford University)

101. Rotation-blended CNNs on a New Open Dataset for Tropical Cyclone Image-to-intensity Regression
Boyo Chen (National Taiwan University), Buo-Fu Chen (National Center of Atmospheric Research), Hsuan-Tien Lin (National Taiwan University)

102. A Data-Driven Three-Layer Algorithm for Split Delivery Vehicle Routing Problem with 3D Container Loading Constraint
Xijun Li (Shanghai Jiao Tong University), Mingxuan Yuan (Huawei Technologies), Di Chen (Huawei Technologies), Jianguo Yao (Shanghai Jiao Tong University), Jia Zeng (Huawei Technologies)

103. Predicting Estimated Time of Arrival for Commercial Flights
Samet Ayhan (University of Maryland), Pablo Costas (Boeing Research & Technology Europe), Hanan Samet (University of Maryland)

104. Deep Sequence Learning with Auxiliary Information for Traffic Prediction
Binbing Liao (Zhejiang University), Jingqing Zhang (Imperial College London), Chao Wu (Zhejiang University), Douglas McIlwraith (Imperial College London), Tong Chen (Zhejiang University), Shengwen Yang (Baidu Inc.), Yike Guo (Imperial College London), Fei Wu (Zhejiang University)

105. Learning to Estimate the Travel Time
Zheng Wang (DiDi AI Labs & Didi Chuxing), Kun Fu (DiDi AI Labs & Didi Chuxing), Jieping Ye (DiDi AI Labs & Didi Chuxing)

106. Mobile Access Record Resolution on Large-Scale Identifier-Linkage Graphs
SHEN Xin (Zhejiang University), Hongxia Yang (Alibaba Group), Weizhao Xian (Zhejiang University), Martin Ester (Simon Fraser University), Jiajun Bu (Zhejiang University), Zhongyao Wang (Alibaba Group), Can Wang (Zhejiang University)

107. Hetero-ConvLSTM: A Deep Learning Approach to Traffic Accident Prediction on Heterogeneous Spatio-Temporal Data
Zhuoning Yuan (University of Iowa), Xun Zhou (University of Iowa), Tianbao Yang (University of Iowa)

108. PittGrub: A Frustration-Free System to Reduce Food Waste by Notifying Hungry College Students
Mark Silvis (University of Pittsburgh), Anthony Sicilia (University of Pittsburgh), Alexandros Labrinidis (University of Pittsburgh)

109. Deploying Machine Learning Models for Public Policy: A Framework
Klaus Ackermann (Monash University), Joe Walsh (University of Chicago), Adolfo De Unánue (University of Chicago), Hareem Naveed (University of Chicago), Andrea Navarrete Rivera (University of Chicago), Sun-Joo Lee (University of Chicago), Jason Bennett (Charlotte-Mecklenburg Police Department), Michael Defoe (Charlotte-Mecklenburg Police Department), Crystal Cody (Charlotte-Mecklenburg Police Department), Lauren Haynes (University of Chicago), Rayid Ghani (University of Chicago) ,

110. Discovering Latent Patterns of Urban Cultural Interactions in WeChat for Modern City Planning

Xiao Zhou (University of Cambridge), Anastasios Noulas (New York University), Cecilia Mascolo (University of Cambridge), Zhongxiang Zhao (Tencent Inc.)

111. StepDeep: A Novel Spatial-temporal Mobility Event Prediction Framework based on Deep Neural Network
Bilong Shen (Tsinghua University), Xiaodan Liang (Carnegie Mellon University), Yufeng Ouyang (Arizona State University), Miaofeng Liu (University of Science and Technology of China), Weimin Zheng (Tsinghua University), Kathleen M. Carley (Carnegie Mellon University)

112. SDREGION: Fast Spotting of Changing Communities in Biological Networks
Serene W.H. Wong (University Health Network), Chiara Pastrello (University Health Network), Max Kotlyar (University Health Network), Christos Faloutsos (Carnegie Mellon University), Igor Jurisica (University of Toronto & University Health Network)

113. Interpretable Representation Learning for Healthcare via Capturing Disease Progression through Time
Tian Bai (Temple University), Shanshan Zhang (Temple University), Brian L. Egleston (Fox Chase Cancer Center), Slobodan Vucetic (Temple University)

114. Fatigue Prediction in Outdoor Runners Via Machine Learning and Sensor Fusion
Tim Op De Beéck (KU Leuven), Wannes Meert (KU Leuven), Kurt Schütte (KU Leuven), Benedicte Vanwanseele (KU Leuven), Jesse Davis (KU Leuven)

115. Inferring Metapopulation Propagation Network for Intra-city Epidemic Control and Prevention
Jingyuan Wang (Beihang University), Xiaojian Wang (Beihang University), Junjie Wu (Beihang University)

116. Identify Susceptible Locations in Medical Records via Adversarial Attacks on Deep Predictive Models
Mengying Sun (Michigan State University), Fengyi Tang (Michigan State University), Jinfeng Yi (JD AI Research), Fei Wang (Weill Cornell Medical School), Jiayu Zhou (Michigan State University)

117. Detection of Paroxysmal Atrial Fibrillation using Attention-based Bidirectional Recurrent Neural Networks
Supreeth P. Shashikumar (Georgia Institute of Technology), Amit J. Shah (Emory University), Gari D. Clifford (Emory University & Georgia Institute of Technology), Shamim Nemati (Emory University)

118. Learning Tasks for Multitask Learning: Heterogenous Patient Populations in the ICU
Harini Suresh (Massachusetts Institute of Technology), Jen J. Gong (Massachusetts Institute of Technology), John V. Guttag (Massachusetts Institute of Technology)

119. Multimodal Sentiment Analysis To Explore the Structure of Emotions
Anthony Hu (University of Oxford), Seth Flaxman (Imperial College London)

120. Multi-Task Learning with Neural Networks for Voice Query Understanding on an Entertainment Platform
Jinfeng Rao (Comcast Applied AI Research Lab & University of Maryland), Ferhan Ture (Comcast Applied AI Research Lab), Jimmy Lin (University of Waterloo)

121. Towards Knowledge Discovery from the Vatican Secret Archives
Donatella Firmani (Roma Tre University), Marco Maiorino (Vatican Secret Archives), Paolo Merialdo (Roma Tre University), Elena Nieddu (Roma Tre University)

122. A Scalable Solution for Rule-Based Part-of-Speech Tagging on Novel Hardware Accelerators
Elaheh Sadredini (University of Virginia), Deyuan Guo (University of Virginia), Chunkun Bo (University of Virginia), Reza Rahimi (University of Virginia), Kevin Skadron (University of Virginia), Hongning Wang (University of Virginia)

123. Pangloss: Fast Entity Linking in Noisy Text Environments
Michael Conover (Workday, Inc.), Matthew Hayes (Workday, Inc.), Scott Blackburn (Workday, Inc.), Pete Skomoroch (Workday, Inc.), Sam Shah (Workday, Inc.)

124. Anatomy of a Privacy-Safe Large-Scale Information Extraction System Over Email
Ying Sheng (Google), Sandeep Tata (Google), James B Wendt (Google), Jing Xie (Google), Qi Zhao (Google), Marc Najork (Google)

125. Notification Volume Control and Optimization System at Pinterest
Bo Zhao (Pinterest), Koichiro Narita (Pinterest), Burkay Orten (Pinterest), John Egan (Pinterest)

126. Deep Learning for Practical Image Recognition: Case Study on Kaggle Competitions
Xulei Yang (Institute for Infocomm Research), Zeng Zeng (Institute for Infocomm Research), Sin G. Teo (Institute for Infocomm Research), Li Wang (Institute for Infocomm Research), Vijay Chandrasekhar (Institute for Infocomm Research), Steven Hoi (Singapore Management University)

127. Resolving Abstract Anaphora Implicitly in Conversational Assistants using a Hierarchically stacked RNN
Prerna Khurana (Tata Consultancy Services), Puneet Agarwal (Tata Consultancy Services), Gautam Shroff (Tata Consultancy Services), Lovekesh Vig (Tata Consultancy Services)

128. MIX: Multi-Channel Information Crossing for Text Matching
Haolan Chen (Mobile Internet Group, Tencent), Fred X. Han (University of Alberta), Di Niu (University of Alberta), Dong Liu (Mobile Internet Group, Tencent), Kunfeng Lai (Mobile Internet Group, Tencent), Chenglin Wu (Mobile Internet Group, Tencent), Yu Xu (Mobile Internet Group, Tencent)

129. Visual Search at Alibaba
Yanhao Zhang (Alibaba Group), Pan Pan (Alibaba Group), Yun Zheng (Alibaba Group), Kang Zhao (Alibaba Group), Yingya Zhang (Alibaba Group), Xiaofeng Ren (Alibaba Group), Rong Jin (Alibaba Group)

130. Autotune: A Derivative-free Optimization Framework for Hyperparameter Tuning
Patrick Koch (SAS Institute Inc.), Oleg Golovidov (SAS Institute Inc.), Steven Gardner (SAS Institute Inc.), Brett Wujek (SAS Institute Inc.), Joshua Griffin (SAS Institute Inc.), Yan Xu (SAS Institute Inc.)

131. Web-Scale Responsive Visual Search at Bing
Houdong Hu (Microsoft), Yan Wang (Microsoft), Linjun Yang (Microsoft), Pavel Komlev (Microsoft), Li Huang (Microsoft), Xi (Stephen) Chen (Microsoft), Jiapei Huang (Microsoft), Ye Wu (Microsoft), Meenaz Merchant (Microsoft), Arun Sacheti (Microsoft)A0578p, Next-Step Suggestions for Modern Interactive Data Analysis Platforms, Tova Milo (Tel Aviv University), Amit Somech (Tel Aviv University),

132. Next-Step Suggestions for Modern Interactive Data Analysis Platforms
Tova Milo (Tel Aviv University), Amit Somech (Tel Aviv University)

133. Device Graphing by Example
Keith Funkhouser (comScore), Matthew Malloy (comScore), Enis Ceyhun Alp (comScore), Phillip Poon (comScore), Paul Barford (comScore, University of Wisconsin)

134. RapidScorer: Fast Tree Ensemble Evaluation by Maximizing Compactness in Data Level Parallelization
Ting Ye (Microsoft), Hucheng Zhou (Alibaba Group), Will Y. Zou (Microsoft), Bin Gao (Microsoft), Ruofei Zhang (Microsoft)

135. A Real-time Framework for Detecting Efficiency Regressions in a Globally Distributed Codebase
Martin Valdez-Vivas (Facebook), Caner Gocmen (Facebook), Andrii Korotkov (Facebook), Ethan Fang (Facebook), Kapil Goenka (Facebook), Sherry Chen (Facebook)

136. BigIN4: Instant, Interactive Insight Identification for Multi-Dimensional Big Data
Qingwei Lin (Microsoft Research), Weichen Ke (Peking University), Jian-Guang Lou (Microsoft Research), Hongyu Zhang (The University of Newcastle), Kaixin Sui (Microsoft Research), Yong Xu (Microsoft Research), Ziyi Zhou (Microsoft Research), Bo Qiao (Microsoft Research), Dongmei Zhang (Microsoft Research)

137. SQR: Balancing Speed, Quality and Risk in Online Experiments
Ya Xu (LinkedIn Corporation), Weitao Duan (LinkedIn Corporation), Shaochen Huang (LinkedIn Corporation)

138. Scalable Optimization for Embedding Highly-Dynamic and Recency-Sensitive Data
Xumin Chen (Tsinghua University), Peng Cui (Tsinghua University), Lingling Yi (Tencent Technology (Shenzhen) Co Ltd), Shiqiang Yang (Tsinghua University)

139. SHIELD: Fast, Practical Defense and Vaccination for Deep Learning using JPEG Compression
Nilaksh Das (Georgia Institute of Technology), Madhuri Shanbhogue (Georgia Institute of Technology), Shang-Tse Chen (Georgia Institute of Technology), Fred Hohman (Georgia Institute of Technology), Siwei Li (Georgia Institute of Technology), Li Chen (Intel Corporation), Michael E. Kounavis (Intel Corporation), Duen Chau (Georgia Institute of Technology)

140. Active Deep Learning to Tune Down the Noise in Labels
Karan Samel (Astound), Xu Miao (Astound)

141. Accelerating Large-Scale Data Analysis by Offloading to High-Performance Computing Libraries using Alchemist
Alex Gittens (Rensselaer Polytechnic Institute), Kai Rothauge (University of California, Berkeley), Shusen Wang (University of California, Berkeley), Michael W. Mahoney (University of California, Berkeley), Lisa Gerhardt (NERSC/LBNL), Prabhat (NERSC/LBNL), Jey Kottalam (University of California, Berkeley), Michael Ringenburg (Cray Inc.), Kristyn Maschhoff (Cray Inc.)

142. An Extensible Event Extraction System With Cross-Media Event Resolution
Fabio Petroni (Thomson Reuters), Natraj Raman (Thomson Reuters), Timothy Nugent (Thomson Reuters), Armineh Nourbakhsh (S&P Global), Žarko Panic (Thomson Reuters), Sameena Shah (S&P Global), Jochen L. Leidner (Thomson Reuters)

143. Gotcha - Sly Malware!Scorpion: A Metagraph2vec Based Malware Detection System

Yujie Fan (West Virginia University), Shifu Hou (West Virginia University), Yiming Zhang (West Virginia University), Yanfang Ye (West Virginia University), Melih Abdulhayoglu (Comodo Security Solutions, Inc.)

144. Managing Computer-Assisted Detection System Based on Transfer Learning with Negative Transfer Inhibition
Issei Sato (University of Tokyo), Yukihiro Nomura (University of Tokyo Hospital), Shouhei Hanaoka (University of Tokyo Hospital), Soichiro Miki (University of Tokyo Hospital), Naoto Hayashi (University of Tokyo Hospital), Osamu Abe (University of Tokyo Hospital), Yoshitaka Masutani (Hiroshima City University)

145. EANN: Event Adversarial Neural Networks for Multi-Modal Fake News Detection
Yaqing Wang (SUNY Buffalo), Fenglong Ma (SUNY Buffalo), Zhiwei Jin (University of Chinese Academy of Sciences), Ye Yuan (Beijing University of Technology), Guangxu Xun (SUNY Buffalo), Kishlay Jha (SUNY Buffalo), Lu Su (SUNY Buffalo), Jing Gao (SUNY Buffalo)

146. NGUARD: A Game Bot Detection Framework for NetEase MMORPGs
Jianrong Tao (NetEase Fuxi AI Lab), Jiarong Xu (Zhejiang University), Linxia Gong (NetEase Fuxi AI Lab), Yifu Li (NetEase Fuxi AI Lab), Changjie Fan (NetEase Fuxi AI Lab), Zhou Zhao (Zhejiang University)

147. I Know You'll Be Back: Interpretable New User Clustering and Churn Prediction on a Mobile Social Application
Carl Yang (University of Illinois, Urbana Champaign & Snap Inc.); Xiaolin Shi (Snap Inc.); Luo Jie (Snap Inc.); Jiawei Han (University of Illinois, Urbana Champaign)

148. Perceive Your Users in Depth: Learning Universal User Representations from Multiple E-commerce Tasks
Yabo Ni (Alibaba Group); Dan Ou (Alibaba Group); Shichen Liu (Alibaba Group); Xiang Li (Alibaba Group); Wenwu Ou (Alibaba Group); Anxiang Zeng (Alibaba Group); Luo Si (Alibaba Group)

149. E-tail Product Return Prediction via Hypergraph-based Local Graph Cut
Jianbo Li (Three Bridges Capital); Jingrui He (Arizona State University); Yada Zhu (IBM Research)

150. OpenTag: Open Attribute Value Extraction from Product Profiles
Guineng Zheng (University of Utah); Subhabrata Mukherjee (Amazon.com); Xin Luna Dong (Amazon.com); Feifei Li (University of Utah)

151. Learning and Transferring IDs Representation in E-commerce
Kui Zhao (Alibaba Group); Yuechuan Li (Alibaba Group); Zhaoqian Shuai (Alibaba Group);Cheng Yang (Alibaba Group)

152. Large-Scale Order Dispatch in On-Demand Ride-Hailing Platforms: A Learning and Planning Approach
Zhe Xu (Didi Chuxing); Zhixin Li (Didi Chuxing); Qingwen Guan (Didi Chuxing); Dingshui Zhang (Didi Chuxing); Qiang Li (Didi Chuxing); Junxiao Nan (Didi Chuxing); Chunyang Liu (Didi Chuxing); Wei Bian (Didi Chuxing); Jieping Ye(Didi Chuxing)

153. Customized Regression Model for Airbnb Dynamic Pricing
Peng Ye (Airbnb Inc.); Julian Qian (Ant Financial); Jieying Chen (Airbnb Inc.); Chen-hung Wu (Airbnb Inc.);Yitong Zhou (Airbnb Inc); Spencer De Mars (Impira Inc.); Frank Yang (Airbnb Inc.); Li Zhang (Airbnb Inc.)

154. Audience Size Forecasting

Yeming Shi (Dstillery); Claudia Perlich (Dstillery); Rod Hook (Dstillery); Wickus Martin (Dstillery);Melinda Han Williams (Dstillery); Justin Moynihan (Dstillery); Patrick McCarthy (Dstillery); Peter Lenz (Dstillery); Reka Daniel-Weiner (Dstillery);Roger Cost (Dstillery)

155. Optimization of a SSP's Header Bidding Strategy using Thompson Sampling
Grégoire Jauvion (AlephD); Nicolas Grislain (AlephD); Pascal Dkengne Sielenou (IMT); Aurélien Garivier (IMT); Sébastien Gerchinovitz (IMT)

156. Applying the Delta Method in Metric Analytics
Alex Deng (Microsoft Corporation); Ulf Knoblich (Microsoft Corporation); Jiannan Lu (Microsoft Corporation)

157. Online Parameter Selection for Web-based Ranking Problems
Deepak Agarwal (LinkedIn Corporation); Kinjal Basu (LinkedIn Corporation); Souvik Ghosh (LinkedIn Corporation); Ying Xuan (LinkedIn Corporation); Yang Yang (LinkedIn Corporation); Liang Zhang (LinkedIn Corporation)

158. Near Real-time Optimization of Activity-based Notifications
Yan Gao (LinkedIn Corporation); Viral Gupta (LinkedIn Corporation); Jinyun Yan (LinkedIn Corporation); Changji Shi (LinkedIn Corporation); Zhongen Tao (LinkedIn Corporation); PJ Xiao (LinkedIn Corporation); Curtis Wang (LinkedIn Corporation); Shipeng Yu (LinkedIn Corporation); Romer Rosales (LinkedIn Corporation); Ajith Muralidharan (LinkedIn Corporation); Shaunak Chatterjee (LinkedIn Corporation)

159. Real-time Personalization using Embeddings for Search Ranking at Airbnb
Mihajlo Grbovic (Airbnb, Inc.); Haibin Cheng (Airbnb, Inc.)

160. Graph Convolutional Neural Networks for Web-Scale Recommender Systems
Rex Ying (Stanford University & Pinterest); Ruining He (Pinterest); Kaifeng Chen (Pinterest & Stanford University); Pong Eksombatchai (Pinterest); William L. Hamilton (Stanford University); Jure Leskovec (Stanford University & Pinterest)

161. Q&R: A Two-Stage Approach toward Interactive Recommendation
Konstantina Christakopoulou (University of Minnesota); Alex Beutel (Google Inc); Rui Li (Google Inc);Sagar Jain (Google Inc); Ed H.Chi (Google Inc)

162. WattHome: A Data-driven Approach for Energy Efficiency Analytics at City-scale
Srinivasan Iyengar(University of Massachusetts Amherst); Stephen Lee (University of Massachusetts Amherst);David Irwin(University of Massachusetts Amherst); Prashant Shenoy (University of Massachusetts Amherst); Benjamin Weil (University of Massachusetts Amherst)

163. Towards Station-Level Demand Prediction for Effective Rebalancing in Bike-Sharing Systems
Pierre Hulot (Polytechnique Montréal); Daniel Aloise (Polytechnique Montréal); Sanjay Dominik Jena (ESG-UQAM)

164. Du-Parking: Spatio-Temporal Big Data Tells You Realtime Parking Availability
Yuecheng Rong (Baidu); Zhimian Xu (Baidu); Ruibo Yan (Baidu); Xu Ma (Baidu)

165. Detecting Vehicle Illegal Parking Events using Sharing Bikes' Trajectories
Tianfu He (Harbin Institute of Technology); Jie Bao (Urban Computing Business Unit, JD Finance); Ruiyuan Li (Xidian University & Urban Computing Business Unit, JD Finance); Sijie Ruan (Xidian University & Urban Computing Business

Unit, JD Finance); Yanhua Li (Worcester Polytechnic Institute); Chao Tian (Beijing Mobike Technology Co., Ltd); Yu Zheng (Urban Computing Business Unit, JD Finance & Xidian University)

166. Where Will Dockless Shared Bikes be Stacked? --- Parking Hotspots Detection in a New City
Zhaoyang Liu (Shanghai Jiao Tong University); Yanyan Shen (Shanghai Jiao Tong University); Yanmin Zhu (Shanghai Jiao Tong University)

167. Using Machine Learning to Assess the Risk of and Prevent Water Main Breaks
Avishek Kumar (University of Chicago); Syed Ali Asad Rizvi (University of Oxford); Benjamin Brooks (University of Chicago); R. Ali Vanderveld (ShopRunner); Kevin H. Wilson (The Lab at DC); Chad Kenney (City of Denver, CO);Sam Edelstein (City of Syracuse, NY); Adria Finch (City of Syracuse, NY); Andrew Maxwell (City of Syracuse, NY); Joe Zuckerbraun (City of Syracuse, NY); Rayid Ghani (University of Chicago)

168. Detecting Spacecraft Anomalies Using LSTMs and Nonparametric Dynamic Thresholding
Kyle Hundman (California Institute of Technology); Valentino Constantinou (California Institute of Technology); Christopher Laporte (California Institute of Technology); Ian Colwell (California Institute of Technology); Tom Soderstrom (California Institute of Technology)

169. Explaining Aviation Safety Incidents Using Deep Temporal Multiple Instance Learning
Vijay Manikandan Janakiraman (NASA Ames Research Center)

170. ActiveRemediation: The Search for Lead Pipes in Flint, Michigan
Jacob Abernethy (Georgia Institute of Technology & University of Michigan); Alex Chojnacki (University of Michigan); Arya Farahi (University of Michigan); Eric Schwartz (University of Michigan); Jared Webb (Brigham Young University)

171. A Dynamic Pipeline for Spatio-Temporal Fire Risk Prediction
Bhavkaran Singh Walia (Carnegie Mellon University); Qianyi Hu (Carnegie Mellon University); Jeffrey Chen (Carnegie Mellon University); Fangyan Chen (Carnegie Mellon University); Jessica Lee (Carnegie Mellon University);Nathan Kuo (Carnegie Mellon University); Palak Narang (Carnegie Mellon University); Jason Batts (Pittsburgh Bureau of Fire); Geoffrey Arnold (Dept. of Innovation and Performance); Michael Madaio (Carnegie Mellon University)

172. Corpus Conversion Service: A Machine Learning Platform to Ingest Documents at Scale
Peter W J Staar (IBM Research); Michele Dolfi (IBM Research); Christoph Auer (IBM Research); Costas Bekas(IBM Research)

173. Rare Query Expansion Through Generative Adversarial Networks in Search Advertising
Mu-Chu Lee (Carnegie Mellon University); Bin Gao (Microsoft); Ruofei Zhang (Microsoft)

174. Collaborative Deep Metric Learning for Video Understanding
Joonseok Lee (Google AI Perception); Sami Abu-El-Haija (Google AI Perception); Balakrishnan Varadarajan (Google AI Perception); Apostol (Paul) Natsev (Google AI Perception)

175. Name Disambiguation in AMiner: Clustering, Maintenance, and Human in the Loop
Yutao Zhang (Tsinghua University);Fanjin Zhang (Tsinghua University); Peiran Yao (Tsinghua University); Jie Tang (Tsinghua University)

176. Rosetta: Large Scale System for Text Detection and Recognition in Images
Fedor Borisyuk (Facebook Inc.); Albert Gordo (Facebook Inc.); Viswanath Sivakumar (Facebook Inc.)

177. TATC: Predicting Alzheimer's Disease with Actigraphy Data
Jia Li (The Chinese University of Hong Kong); Yu Rong (Tencent AI Lab); Helen Meng (The Chinese University of Hong Kong); Zhihui Lu (The Chinese University of Hong Kong); Timothy Kwok (The Chinese University of Hong Kong); Hong Cheng (The Chinese University of Hong Kong)

178. Estimating Glaucomatous Visual Sensitivity from Retinal Thickness with Pattern-Based Regularization and Visualization
Hiroki Sugiura (University of Tokyo); Taichi Kiwaki (University of Tokyo); Siamak Yousefi (University of Tennessee Health Science Center); Hiroshi Murata (University of Tokyo); Ryo Asaoka (University of Tokyo); Kenji Yamanishi (University of Tokyo)

179. Accelerating Prototype-Based Drug Discovery using Conditional Diversity Networks
Shahar Harel (Technion – Israel Institute of Technology); Kira Radinsky (Technion – Israel Institute of Technology)

180. Releasing eHealth Analytics into the Wild: Lessons Learnt from the SPHERE Project
Tom Diethe (Amazon Research); Mike Holmes (University of Bristol); (Meelis Kull) University of Tartu; Miquel Perello Nieto (University of Bristol); Kacper Sokol (University of Bristol); Hao Song (University of Bristol); Emma Tonkin (University of Bristol); Niall Twomey (University of Bristol); Peter Flach (University of Bristol)

181. Detection of Apathy in Alzheimer Patients by Analysing Visual Scanning Behaviour with RNNs
Jonathan Chung (University of Toronto); Sarah A. Chau (Sunnybrook Research Institute and University of Toronto); Nathan Herrmann (Sunnybrook Research Institute and University of Toronto); Krista L. Lanctôt (Sunnybrook Research Institute and University of Toronto); Moshe Eizenman (University of Toronto)

182. False Discovery Rate Controlled Heterogeneous Treatment Effect Detection for Online Controlled Experiments
Yuxiang Xie (University of Washington); Nanyu Chen (LinkedIn); Xiaolin Shi (Snap Inc.)

183. Winner's Curse: Bias Estimation for Total Effects of Features in Online Controlled Experiments
Minyong R. Lee (Airbnb, Inc.); Milan Shen (Airbnb, Inc.)

184. Automatic Discovery of Tactics in Spatio-Temporal Soccer Match Data
Tom Decroos (KU Leuven); Jan Van Haaren (SciSports); Jesse Davis (KU Leuven)

185. Using Rule-Based Labels for Weak Supervised Learning
Garrett B. Goh (Pacific Northwest National Lab (PNNL)); Charles Siegel (Cray Inc.); Abhinav Vishnu (Advanced Micro Devices Inc.); Nathan Hodas (Pacific Northwest National Lab (PNNL))

186. PrePeP – A Tool for the Identification and Characterization of Pan Assay Interference Compounds
Maksim Koptelov (Normandie Université); Albrecht Zimmermann(Normandie Université); Pascal Bonnet (ICOA/University of Orléans); Ronan Bureau (CERMN/University of Caen); Normandy Bruno (Crémilleux Normandie Université)

187. - 196. KDD Cup Posters

Tuesday 7:30PM - 9:30PM, OC Dinner

Wednesday August 22, 2018 - Detailed Program

Wednesday 7:00AM - 5:00PM, Registration, Registration Desk - Boulevard (Level 0)

Wednesday 9:30AM - 6:00PM, Sponsor Room - ICC Capital Suite Room 5 (Level 3)

Wednesday 9:30AM - 6:00PM, KDD Exhibit Hall - ICC Capital Hall (Level 0)

Wednesday 8:30AM - 12:00PM, Hands On Tutorial: Beyond Graph Mining: Higher-Order Data Analytics for Temporal Network Data - ICC Capital Suite Room 2+3+4 (Level 3)

Wednesday 8:30AM - 12:00PM, Hands On Tutorial: Deep Learning with Keras - ICC Capital Suite Room 14+15+16 (Level 3)

Tuesday 8:00PM - 9:30PM, ICC Auditorium (Level 0)
Keynote Session 3: Market Design and Computerized Marketplaces
Chair: Andrei Broder
Speaker: **Alvin E. Roth, Nobel Memorial Prize in Economics, Professor of Economics, Stanford University**
Abstract: Markets and marketplaces are ancient human artifacts, but in recent years they have become ever more important. In part this is because marketplaces are becoming computerized. Together with the introduction of smartphones, this also makes them ubiquitous. We can order car rides to the airport, plane rides to London, and hotel rooms for when we arrive, all on our smartphones. And as we do so we leave a data trail that is easily combined with other streams of data. This is changing not only how we interact with markets, but also how we manage and regard privacy. I'll discuss some recent developments in computerized markets and speculate about some still to come.

Wednesday 9:30AM - 10:00AM, KDD Coffee Break, ICC Capital Hall (Level 0)

Wednesday 10:00AM - 12:00PM

Research Track Session RT9: Supervised Learning I, ICC Capital Suite Room 8+11 (Level 3)
Chair: Fabio Vandin

Unlearn What You Have Learned: Adaptive Crowd Teaching with Exponentially Decayed Memory Learners
Yao Zhou (Arizona State University); Arun Reddy Nelakurthi (Arizona State University); Jingrui He (Arizona State University)

Calibrated Multi-Task Learning
Feiping Nie (Department of Computer Science, OPTIMAL, Northwestern Polytechnical University); Zhanxuan Hu (Department of Computer Science, OPTIMAL, Northwestern Polytechnical University); Xuelong Li (OPTIMAL, Xian Institute of Optics and Precision Mechanics, Chinese Academy of Sciences)

Modeling Task Relationships in Multi-task Learning with Multi-gate Mixture-of-Experts
Jiaqi Ma (University of Michigan); Zhe Zhao (Google); Xinyang Yi (Google); Jilin Chen (Google); Lichan Hong (Google); Ed Chi (Google)

Complex Object Classification: A Multi-Modal Multi-Instance Multi-Label Deep Network with Optimal Transport
Yang Yang (NanJing university); Yi-Feng Wu (LAMDA Group, Nanjing University); De-Chuan Zhan (Nanjing University); Zhi-Bin Liu (Tencent); Yuan Jiang (Nanjing University)

Feedback-Guided Anomaly Discovery via Online Optimization
Md Amran Siddiqui (Oregon State University); Alan Fern (Oregon State University); Thomas Dietterich (Oregon State University); Ryan Wright (Galois, Inc.); Alec Theriault (Galois, Inc.); David Archer (Galois, Inc.)

Applied Data Science Track Session ADS4: Urban Planning, ICC Capital Suite Room 7+12 (Level 3)
Chair: Kamalika Das

WattHome: A Data-driven Approach for Energy Efficiency Analytics at City-scale
Srinivasan Iyengar(University of Massachusetts Amherst); Stephen Lee (University of Massachusetts Amherst);David Irwin(University of Massachusetts Amherst); Prashant Shenoy (University of Massachusetts Amherst); Benjamin Weil (University of Massachusetts Amherst)

Towards Station-Level Demand Prediction for Effective Rebalancing in Bike-Sharing Systems
Pierre Hulot (Polytechnique Montréal); Daniel Aloise (Polytechnique Montréal); Sanjay Dominik Jena (ESG-UQAM)

Du-Parking: Spatio-Temporal Big Data Tells You Realtime Parking Availability
Yuecheng Rong (Baidu); Zhimian Xu (Baidu); Ruibo Yan (Baidu); Xu Ma (Baidu)

Detecting Vehicle Illegal Parking Events using Sharing Bikes' Trajectories
Tianfu He (Harbin Institute of Technology); Jie Bao (Urban Computing Business Unit, JD Finance); Ruiyuan Li (Xidian University & Urban Computing Business Unit, JD Finance); Sijie Ruan (Xidian University & Urban Computing Business Unit, JD Finance); Yanhua Li (Worcester Polytechnic Institute); Chao Tian (Beijing Mobike Technology Co., Ltd); Yu Zheng (Urban Computing Business Unit, JD Finance & Xidian University)

Where Will Dockless Shared Bikes be Stacked? --- Parking Hotspots Detection in a New City
Zhaoyang Liu (Shanghai Jiao Tong University); Yanyan Shen (Shanghai Jiao Tong University); Yanmin Zhu (Shanghai Jiao Tong University)

Research Track Session RT10: Recommenders I, ICC Capital Suite Room 9+10 (Level 3)
Chair: Yong Ge

Leveraging Meta-path based Context for Top N recommendation with Co-attention mechanism
Binbin Hu (Beijing University of Posts and Telecommunications); Chuan Shi (Beijing University of Posts and Telecommunications); Xin Zhao (School of Information, Renmin University of China); Philip S. Yu (University of Illinois at Chicago)

Efficient Attribute Recommendation with Probabilistic Guarantee
Chi Wang (Microsoft); Kaushik Chakrabarti (Microsoft)

Ranking Distillation: Learning Compact Ranking Models With High Performance for Recommender System
Jiaxi Tang (Simon Fraser University); Ke Wang (Simon Fraser University)

Algorithms for Hiring and Outsourcing in the Online Labor Market
Aris Anagnostopoulos (Sapienza University of Rome); Carlos Castillo (Universitat Pompeu Fabra); Adriano Fazzone (Sapienza University of Rome); Stefano Leonardi (Sapienza University of Rome); Evimaria Terzi (Boston University)

Multi-Pointer Co-Attention Networks for Recommendation
Yi Tay (Nanyang Technological University); Anh Tuan Luu (I2r); Siu Cheung Hui (Nanyang Technological University)

Research Track Session RT11: Representation and Embedding I, ICC Capital Suite Room 6+13 (Level 3)
Chair: Yan Liu

Multi-Type Itemset Embedding for Learning Behavior Success
Daheng Wang (University of Notre Dame); Meng Jiang (University of Notre Dame); Qingkai Zeng (University of Notre Dame); Zachary Eberhart (University of Notre Dame); Nitesh Chawla (University of Notre Dame)

Multi-label Learning with Highly Incomplete Data via Collaborative Embedding
Yufei Han (Symantec Research Labs); Guolei Sun (King Abdullah University of Science and Technology); Yun Shen (Symantec Research Labs); Xiangliang Zhang (King Abdullah University of Science and Technology)

Learning Representations of Ultrahigh-dimensional Data for Random Distance-based Outlier Detection
Guansong Pang (University of Technology Sydney); Longbing Cao (University of Technology Sydney); Ling Chen (University of Technology Sydney); Huan Liu (Arizona State University)

Interactive Paths Embedding for Semantic Proximity Search on Heterogeneous Graphs
Zemin Liu (Zhejiang University); Vincent W. Zheng (Advanced Digital Sciences Center); Zhou Zhao (Zhejiang University); Zhao Li (Alibaba Group); Hongxia Yang (Alibaba Group); Minghui Wu (Zhejiang University); Jing Ying (Zhejiang University)

Concepts-Bridges: Uncovering Conceptual Bridges Based on Biomedical Concept Evolution
Kishlay Jha (State University of New York at Buffalo); Guangxu Xun (State University of New York at Buffalo); Yaqing Wang (State University of New York at Buffalo); Vishrawas Gopalakrishnan (State University of New York at Buffalo); Aidong Zhang (State University of New York at Buffalo)

Applied Data Science Invited Session AI2: Consumer Internet Applications, ICC Auditorium (Level 0)
Chair: Myra Spiliopoulou

Building Nearline Contextual Recommendations for Active Communities on LinkedIn
Hema Raghavan (LinkedIn)

The Pinterest Approach to Machine Learning
Grace Huang (Pinterest)

Challenges and Innovations in Building a Product Knowledge Graph
Xin Luna Dong (Amazon)

Project Showcase, ICC London Suite Room 3

Wednesday 12:00PM - 1:30PM, KDD Lunch, ICC Capital Hall (Level 0)
Wednesday 12:00PM - 1:30PM, KDD Women's Lunch (Ticket Required), Halls N20-N23
Wednesday 1:30PM - 5:30PM, Hands On Tutorial: Beyond Graph Mining: Higher-Order Data Analytics for Temporal Network Data, ICC Capital Suite Room 2+3+4 (Level 3)
Wednesday 1:30PM - 5:30PM, Hands On Tutorial: Feature Extraction and Summarization with Sequence to Sequence Learning, ICC Capital Suite Room 14+15+16 (Level 3)
Wednesday 1:30PM - 6:00PM, Project Showcase, ICC London Suite Room 3
Wednesday 1:30PM - 6:00PM, Global AI Initiatives Event, ICC Capital Suite Room 7+12 (Level 3)

Wednesday 1:30PM - 3:00PM

Research Track Session RT12: Recommenders II, ICC Capital Suite Room 9+10 (Level 3)
Chair: Xie Xing

Local Latent Space Models for Top-N Recommendation
Evangelia Christakopoulou (University of Minnesota); George Karypis (University of Minnesota)

STAMP: Short-Term Attention/Memory Priority Model for Session-based Recommendation
Qiao Liu (University of Science and Technology of China); Yifu Zeng (University of Science and Technology of China); Refuoe Mokhosi (University of Science and Technology of China); Haibin Zhang (University of Science and Technology of China)

Multi-User Mobile Sequential Recommendation: An Efficient Parallel Computing Paradigm
eyang Ye (Stony Brook University); Lihao Zhang (Stony Brook University); Keli Xiao (Stony Brook University); Wenjun Zhou (University of Tennessee Knoxville); Yong Ge (University of Arizona); Yuefan Deng (Stony Brook University)

Trajectory-driven Influential Billboard Placement
Ping Zhang (Wuhan University); Zhifeng Bao (RMIT University); Yuchen Li (Singapore Management University); Guoliang Li (Tsinghua University); Yipeng Zhang (RMIT University); Zhiyong Peng (Wuhan University)

Offline Evaluation of Ranking Policies with Click Models
Shuai Li (The Chinese University of Hong Kong); Yasin Abbasi-Yadkori (Adobe Research); Branislav Kveton (Adobe Research); S. Muthukrishnan (Rutgers University); Vishwa Vinay (Adobe Research); Zheng Wen (Adobe Research)

xDeepFM: Combining Explicit and Implicit Feature Interactions for Recommender Systems
Jianxun Lian (University of Science and Technology of China); Xiaohuan Zhou (Beijing University of Posts and Telecommunications); Fuzheng Zhang (Microsoft); Zhongxia Chen (University of Science and Technology of China); Xing Xie (Microsoft); Guangzhong Sun (University of Science and Technology of China)

Research Track Session RT13: Representation and Embedding II, ICC Capital Suite Room 6+13 (Level 3)
Chair: Peng Cui

Finding Similar Exercises in Online Education Systems
Qi Liu (University of Science and Technology of China); Zai Huang (University of Science and Technology of China); Zhenya Huang (University of Science and Technology of China); Chuanren Liu (Decision Sciences and MIS Department, Drexel University); Enhong Chen (University of Science and Technology of China); Yu Su (School of Computer Science and Technology, Anhui University); Guoping Hu (iFLYTEK Research)

Arbitrary-Order Proximity Preserved Network Embedding
Ziwei Zhang (Tsinghua University); Peng Cui (Tsinghua University); Xiao Wang (Tsinghua University); Jian Pei (Simon Fraser University); Xuanrong Yao (Tsinghua University); Wenwu Zhu (Tsinghua University)

NetWalk: A Flexible Deep Embedding Approach for Anomaly Detection in Dynamic Networks
Wenchao Yu (University of California, Los Angeles); Wei Cheng (NEC Labs America); Charu Aggarwal (IBM); Kai Zhang (NEC); Haifeng Chen (NEC); Wei Wang (University of California, Los Angeles)

Hierarchical Taxonomy Aware Network Embedding
Jianxin Ma (Tsinghua University); Peng Cui (Tsinghua University); Xiao Wang (Tsinghua University); Wenwu Zhu (Tsinghua University)

Deep Recursive Network Embedding with Regular Equivalence
Ke Tu (Tsinghua University); Peng Cui (Tsinghua University); Xiao Wang (Tsinghua University); Philip S. Yu (University of Illinois at Chicago); Wenwu Zhu (Tsinghua University)

Embedding Temporal Network via Neighborhood Formation
Yuan Zuo (Beihang University); Guannan Liu (Beihang University); Hao Lin (Beihang University); Jia Guo (Beihang University); Xiaoqian Hu (Beihang University); Junjie Wu (Beihang University)

Applied Data Science Invited Session AI3: Data Science Infrastructure, ICC Auditorium (Level 0)
Chair: Johannes Gehrke

SysML: On System and Algorithm co-design and Automatic Machine Learning
Eric Xing (CMU and Petuum)

Algorithms, Data, Hardware and Tools - a Perfect Storm
Alex Smola and Edo Liberty (Amazon Web Service)

Software 2.0 and Snorkel: Beyond Hand-Labeled Data
Chris Re (Stanford University)

Applied Data Science Invited Panel, ICC Capital Suite Room 8+11 (Level 3)

Who is a Data Scientist? Defining the Analytics Profession and Cutting Out the Hype and Confusion
Panel Chair: Usama Fayyad (OODA Health and Open Insights) USA

Wednesday 3:30PM - 4:00PM, KDD Coffee Break, ICC Capital Hall (Level 0)

Wednesday 4:00PM - 6:00PM

Research Track Session RT14: Supervised Learning II, ICC Capital Suite Room 8+11 (Level 3)
Chair: Panagiotis Karras

Stable Prediction across Unknown Environments
Kun Kuang (Tsinghua University); Peng Cui (Tsinghua University); Susan Athey (Stanford University); Ruoxuan Xiong (Stanford University); Bo Li (Tsinghua University)

A Treatment Engine by Predicting Next-Period Prescriptions
Bo Jin (Dalian University of Technology); Haoyu Yang (Dalian University of Technology); Leilei Sun (Tsinghua University); Chuanren Liu (Drexel University); Yue Qu (Dalian University of Technology); Jianing Tong (Tongji University)

Training Big Random Forests with Little Resources
Fabian Gieseke (University of Copenhagen); Christian Igel (University of Copenhagen)

R2SDH: Robust Rotated Supervised Discrete Hashing
Jie Gui (Rutgers University); Ping Li (Rutgers University)

Adversarial Detection with Model Interpretation

Ninghao Liu (Texas A&M University); Hongxia Yang (Alibaba Group); Xia Hu (Texas A&M University)

Risk Prediction on Electronic Healthcare Records with Prior Medical Knowledge
Fenglong Ma (SUNY Buffalo); Jing Gao (SUNY Buffalo); Qiuling Suo (SUNY Buffalo); Quanzeng You (Microsoft AI & Research); Jing Zhou (Eheath Inc); Aidong Zhang (SUNY Buffalo)

Applied Data Science Track Session ADS5: Safety, ICC Capital Suite Room 9+10 (Level 3)
Chair: Mounia Lalmas

Using Machine Learning to Assess the Risk of and Prevent Water Main Breaks
Avishek Kumar (University of Chicago); Syed Ali Asad Rizvi (University of Oxford); Benjamin Brooks (University of Chicago); R. Ali Vanderveld (ShopRunner); Kevin H. Wilson (The Lab at DC); Chad Kenney (City of Denver, CO); Sam Edelstein (City of Syracuse, NY); Adria Finch (City of Syracuse, NY); Andrew Maxwell (City of Syracuse, NY); Joe Zuckerbraun (City of Syracuse, NY); Rayid Ghani (University of Chicago)

Detecting Spacecraft Anomalies Using LSTMs and Nonparametric Dynamic Thresholding
Kyle Hundman (California Institute of Technology); Valentino Constantinou (California Institute of Technology); Christopher Laporte (California Institute of Technology); Ian Colwell (California Institute of Technology); Tom Soderstrom (California Institute of Technology)

Explaining Aviation Safety Incidents Using Deep Temporal Multiple Instance Learning
Vijay Manikandan Janakiraman (NASA Ames Research Center)

ActiveRemediation: The Search for Lead Pipes in Flint, Michigan
Jacob Abernethy (Georgia Institute of Technology & University of Michigan); Alex Chojnacki (University of Michigan); Arya Farahi (University of Michigan); Eric Schwartz (University of Michigan); Jared Webb (Brigham Young University)

A Dynamic Pipeline for Spatio-Temporal Fire Risk Prediction
Bhavkaran Singh Walia (Carnegie Mellon University); Qianyi Hu (Carnegie Mellon University); Jeffrey Chen (Carnegie Mellon University); Fangyan Chen (Carnegie Mellon University); Jessica Lee (Carnegie Mellon University); Nathan Kuo (Carnegie Mellon University); Palak Narang (Carnegie Mellon University); Jason Batts (Pittsburgh Bureau of Fire); Geoffrey Arnold (Dept. of Innovation and Performance); Michael Madaio (Carnegie Mellon University)

Research Track Session RT15: Semi-supervised and Transfer Learning, ICC Capital Suite Room 6+13 (Level 3)
Chair: Jing Gao

Multi-view Adversarially Learned Inference for Cross-domain Joint Distribution Matching
Changying Du (Institute of Software, Chinese Academy of Sciences); Changde Du (Institute of Automation, Chinese Academy of Sciences); Xingyu Xie (Nanjing University of Aeronautics and Astronautics); Chen Zhang (Qihoo 360 Search Lab); Hao Wang (Qihoo 360 Search Lab)

Learning Adversarial Networks for Semi-Supervised Text Classification via Policy Gradient
Yan Li (University of Michigan); Jieping Ye (University of Michigan)

Scalable Active Learning by Approximated Error Reduction
Weijie Fu (Hefei University of Technology); Meng Wang (Hefei University of Technology); Shijie Hao (Hefei University of Technology); Xindong Wu (University of Louisiana at Lafayette)

Learning Dynamics of Decision Boundaries without Additional Labeled Data
Atsutoshi Kumagai (NTT); Tomoharu Iwata (NTT)

Towards Mitigating the Class-Imbalance Problem for Partial Label Learning
Jing Wang (Southeast University); Min-Ling Zhang (Southeast University)

Wednesday 6:00PM - 7:00PM, KDD Business Presentation, ICC Auditorium (Level 0)
Wednesday 7:00PM - 8:30PM, KDD 2018 Banquet, Halls N20-N23

Thursday August 23, 2018 Detailed Program

Thursday 7:00AM - 5:00PM, Registration, Registration Desk - Boulevard (Level 0)

Thursday 9:30AM - 6:00PM, Sponsor Room - ICC Capital Suite Room 5 (Level 3)

Thursday 9:30AM - 6:00PM, KDD Exhibit Hall - ICC Capital Hall (Level 0)

Thursday 8:30AM - 12:00PM, Hands On Tutorial: Introduction to Reinforcement Learning with Ray - ICC Capital Suite Room 2+3+4 (Level 3)

Thursday 8:30AM - 12:00PM, Hands On Tutorial: Building Custom Deep Recommendation Engines - ICC Capital Suite Room 14+15+16 (Level 3)

Tuesday 8:00PM - 9:30PM, ICC Auditorium (Level 0)
Keynote Session 4: On Big Data Learning for Small Data Problems
Chair: Chih-Jen Lin
Speaker: **Yee Whye Teh, Professor, Department of Statistics, University of Oxford; Research Scientist, DeepMind**
Abstract: Much recent progress in machine learning have been fueled by the explosive growth in the amount and diversity of data available, and the computational resources needed to crunch through the data. This begs the question of whether machine learning systems necessarily need large amounts of data to solve a task well. An exciting recent development, under the banners of meta-learning, lifelong learning, learning to learn, multitask learning etc., has been the observation that often there is heterogeneity within the data sets at hand, and in fact a large data set can be viewed more productively as many smaller data sets, each pertaining to a different task. For example, in recommender systems each user can be said to be a different task with a small associated data set, and in AI one holy grail is how to develop systems that can learn to solve new tasks quickly from small amounts of data.

In such settings, the problem is then how to “learn to learn quickly”, by making use of similarities among tasks. One perspective for how this is achievable is that exposure to lots of previous tasks allows the system to learn a rich prior knowledge about the world in which tasks are sampled from, and it is with rich world knowledge that the system is able to solve new tasks quickly. This is a very active, vibrant and diverse area of research, with many different approaches proposed recently. In this talk I will describe a view of this problem from probabilistic and deep learning perspectives, and describe a number of efforts in this direction that I have recently been involved in.

Thursday 9:30AM - 10:00AM, KDD Coffee Break, ICC Capital Hall (Level 0)

Thursday 10:00AM - 12:00PM

Research Track Session RT16: Unsupervised Learning I, ICC Capital Suite Room 8+11 (Level 3)
Chair: Martin Ester

TaxoGen: Unsupervised Topic Taxonomy Construction by Adaptive Term Embedding and Clustering
Chao Zhang (University of Illinois at Urbana-Champaign); Fangbo Tao (Facebook); Xiusi Chen (University of Illinois at Urbana-Champaign); Jiaming Shen (University of Illinois at Urbana-Champaign); Meng Jiang (University of Notre Dame); Brian Sadler (U.S. Army Research Lab); Michelle Vanni (U.S. Army Research Lab); Jiawei Han (University of Illinois at Urbana-Champaign)

Discovering Non-Redundant K-means Clusterings in Optimal Subspaces
Dominik Mautz (Ludwig Maximilian University of Munich); Wei Ye (Ludwig Maximilian University of Munich); Claudia Plant (University of Vienna); Christian Böhm (Ludwig Maximilian University of Munich)

Scalable k-Means Clustering via Lightweight Coresets
Olivier Bachem (ETH Zurich); Mario Lucic (Google); Andreas Krause (ETH Zurich)

TextTruth: An Unsupervised Approach to Discover Trustworthy Information from Multi-Sourced Text Data
Hengtong Zhang (SUNY at Buffalo); Yaliang Li (Baidu Research); Fenglong Ma (SUNY Buffalo); Jing Gao (University at Buffalo); Lu Su (The State University of New York at Buffalo)

TruePIE: Discovering Reliable Patterns in Pattern-Based Information Extraction
Qi Li (University of Illinois at Urbana-Champaign); Meng Jiang (University of Notre Dame); Xikun Zhang (University of Illinois at Urbana-Champaign); Meng Qu (University of Illinois at Urbana-Champaign); Timothy Hanratty (US Army Research Laboratory); Jing Gao (University at Buffalo); Jiawei Han (University of Illinois at Urbana-Champaign)

Applied Data Science Track Session ADS6: Texts, Images and Videos, ICC Capital Suite Room 9+10 (Level 3)
Chair: Elena Baralis

Corpus Conversion Service: A Machine Learning Platform to Ingest Documents at Scale
Peter W J Staar (IBM Research); Michele Dolfi (IBM Research); Christoph Auer (IBM Research); Costas Bekas(IBM Research)

Rare Query Expansion Through Generative Adversarial Networks in Search Advertising
Mu-Chu Lee (Carnegie Mellon University); Bin Gao (Microsoft); Ruofei Zhang (Microsoft)

Collaborative Deep Metric Learning for Video Understanding
Joonseok Lee (Google AI Perception); Sami Abu-El-Haija (Google AI Perception); Balakrishnan Varadarajan (Google AI Perception); Apostol (Paul) Natsev (Google AI Perception)

Name Disambiguation in AMiner: Clustering, Maintenance, and Human in the Loop
Yutao Zhang (Tsinghua University);Fanjin Zhang (Tsinghua University); Peiran Yao (Tsinghua University); Jie Tang (Tsinghua University)

Rosetta: Large Scale System for Text Detection and Recognition in Images
Fedor Borisyuk (Facebook Inc.); Albert Gordo (Facebook Inc.); Viswanath Sivakumar (Facebook Inc.)

Applied Data Science Track Session ADS7: Medicine and Healthcare, ICC Capital Suite Room 7+12 (Level 3)
Chair: Myra Spiliopoulou

TATC: Predicting Alzheimer's Disease with Actigraphy Data

Jia Li (The Chinese University of Hong Kong); Yu Rong (Tencent AI Lab); Helen Meng (The Chinese University of Hong Kong); Zhihui Lu (The Chinese University of Hong Kong); Timothy Kwok (The Chinese University of Hong Kong); Hong Cheng (The Chinese University of Hong Kong)

Estimating Glaucomatous Visual Sensitivity from Retinal Thickness with Pattern-Based Regularization and Visualization
Hiroki Sugiura (University of Tokyo); Taichi Kiwaki (University of Tokyo); Siamak Yousefi (University of Tennessee Health Science Center); Hiroshi Murata (University of Tokyo); Ryo Asaoka (University of Tokyo); Kenji Yamanishi (University of Tokyo)

Accelerating Prototype-Based Drug Discovery using Conditional Diversity Networks
Shahar Harel (Technion – Israel Institute of Technology); Kira Radinsky (Technion – Israel Institute of Technology)

Releasing eHealth Analytics into the Wild: Lessons Learnt from the SPHERE Project
Tom Diethe (Amazon Research); Mike Holmes (University of Bristol); (Meelis Kull) University of Tartu; Miquel Perello Nieto (University of Bristol); Kacper Sokol (University of Bristol); Hao Song (University of Bristol); Emma Tonkin (University of Bristol); Niall Twomey (University of Bristol); Peter Flach (University of Bristol)

Detection of Apathy in Alzheimer Patients by Analysing Visual Scanning Behaviour with RNNs
Jonathan Chung (University of Toronto); Sarah A. Chau (Sunnybrook Research Institute and University of Toronto); Nathan Herrmann (Sunnybrook Research Institute and University of Toronto); Krista L. Lanctôt (Sunnybrook Research Institute and University of Toronto); Moshe Eizenman (University of Toronto)

Research Track Session RT17: Methodology I, ICC Capital Suite Room 6+13 (Level 3)
Chair: Ron Bekkerman

Count-Min: Optimal Estimation and Tight Error Bounds using Empirical Error Distributions
Daniel Ting (Tableau Software)

Metric Learning from Probabilistic Labels
Mengdi Huai (State University of New York at Buffalo); Chenglin Miao (State University of New York at Buffalo); Yaliang Li (Baidu Research Big Data Lab); Qiuling Suo (State University of New York at Buffalo); Lu Su (State University of New York at Buffalo); Aidong Zhang (State University of New York at Buffalo)

Sequences of Sets
Austin Benson (Cornell University); Ravi Kumar (Google); Andrew Tomkins (Google)

A Unified Approach to Quantifying Algorithmic Unfairness: Measuring Individual & Group Unfairness via Inequality Indices
ill Speicher (MPI-SWS); Hoda Heidari (ETH Zurich); Nina Grgic-Hlaca (MPI-SWS); Krishna P. Gummadi (MPI-SWS); Adish Singla (MPI-SWS); Adrian Weller (University of Cambridge); Muhammad Bilal Zafar (MPI-SWS)

PCA by Determinant Optimization has no Spurious Local Optima
Raphael Hauser (University of Oxford); Armin Eftekhari (Alan Turing Institute); Heinrich Matzinger (Georgia Institute of Technology)

Applied Data Science Invited Session AI4: Novel Applications, ICC Auditorium (Level 0)
Chair: Peter van der Putten

Planet-Scale Land Cover Classification With FPGAs
Joseph Sirosh (Microsoft)

Data Science and Entertainment Production
Jen Walraven (Netflix)

The U.S. Census Bureau Adopts Differential Privacy
John M. Abowd (United States Census Bureau)

Thursday 12:00PM - 1:30PM, KDD Lunch, ICC Capital Hall (Level 0)
Thursday 1:30PM - 5:30PM Hands On Tutorial: Introduction to Reinforcement Learning with Ray ICC Capital Suite Room 2+3+4 (Level 3)

Thursday 1:30PM - 3:00PM
Research Track Session RT18: Unsupervised Learning II, ICC Capital Suite Room 8+11 (Level 3)
Chair: Matteo Riondato

Spectral Clustering of Large-scale Data by Directly Solving Normalized Cut
Xiaojun Chen (Shenzhen University); Weijun Hong (Shenzhen University); Feiping Nie (Northwestern Polytechnical University); Dan He (Shenzhen University); Min Yang (Chinese Academy of Sciences); Joshua Z. Huang (Shenzhen University)

Multiview Clustering via Adaptively Weighted Procrustes
Feiping Nie (Northwestern Polytechnical University); Lai Tian (Northwestern Polytechnical University); Xuelong Li (Center for OPTIMAL, Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences)

Scalable Spectral Clustering Using Random Binning Features
Lingfei Wu (IBM); Pin-Yu Chen (IBM); Ian En-Hsu Yen (CMU); Fangli Xu (College of William & Mary); Yinglong Xia (Huawei Research); Charu Aggarwal (IBM)

Model-based Clustering of Short Text Streams
Jianhua Yin (School of Computer Science and Technology, Shandong University); Daren Chao (School of Computer Science and Technology, Shandong University); Zhongkun Liu (School of Computer Science and Technology, Shandong University); Wei Zhang (Shanghai Key Laboratory of Trustworthy Computing, East China Normal University); Xiaohui Yu (School of Computer Science and Technology, Shandong University); Jianyong Wang (Tsinghua University)

MiSoSouP: Mining Interesting Subgroups with Sampling and Pseudodimension
Matteo Riondato (Two Sigma Investments, LP); Fabio Vandin (University of Padova)

Applied Data Science Track Session ADS8: Natural Sciences, Sport, and the Application of Controlled Experiments, ICC Capital Suite Room 7+12 (Level 3)
Chair: Ernestina Menasalvas

False Discovery Rate Controlled Heterogeneous Treatment Effect Detection for Online Controlled Experiments
Yuxiang Xie (University of Washington); Nanyu Chen (LinkedIn); Xiaolin Shi (Snap Inc.)

Winner's Curse: Bias Estimation for Total Effects of Features in Online Controlled Experiments
Minyong R. Lee (Airbnb, Inc.); Milan Shen (Airbnb, Inc.)

Automatic Discovery of Tactics in Spatio-Temporal Soccer Match Data
Tom Decroos (KU Leuven); Jan Van Haaren (SciSports); Jesse Davis (KU Leuven)

Using Rule-Based Labels for Weak Supervised Learning
Garrett B. Goh (Pacific Northwest National Lab (PNNL)); Charles Siegel (Cray Inc.); Abhinav Vishnu (Advanced Micro Devices Inc.); Nathan Hodas (Pacific Northwest National Lab (PNNL))

PrePeP – A Tool for the Identification and Characterization of Pan Assay Interference Compounds
Maksim Koptelov (Normandie Université); Albrecht Zimmermann (Normandie Université); Pascal Bonnet (ICOA/University of Orléans); Ronan Bureau (CERMN/University of Caen); Normandy Bruno (Crémilleux Normandie Université)

Research Track Session RT19: Knowledge Discovery, ICC Capital Suite Room 9+10 (Level 3)
Chair: Xiangliang Zhang

Dynamic Embeddings for User Profiling in Twitter
Shangsong Liang (King Abdullah University of Science and Technology); Xiangliang Zhang (King Abdullah University of Science and Technology); Zhaochun Ren (JD.com); Evangelos Kanoulas (University of Amsterdam)

TINET: Learning Invariant Networks via Knowledge Transfer
Chen Luo (Rice University); Zhengzhang Chen (NEC Laboratories America); Lu-An Tang (NEC Laboratories America); Anshumali Shrivastava (Rice University); Zhichun Li (NEC Laboratories America); Haifeng Chen (NEC Laboratories America); Jieping Ye (University of Michigan)

Can Who-Edits-What Predict Edit Survival
Ali Batuhan Yardım (Bilkent University); Victor Kristof (Ecole Polytechnique Fédérale de Lausanne); Lucas Maystre (Ecole Polytechnique Fédérale de Lausanne); Matthias Grossglauser (Ecole Polytechnique Fédérale de Lausanne)

An Efficient Two-Layer Mechanism for Privacy-Preserving Truth Discovery
Yaliang Li (Baidu Research); Chenglin Miao (SUNY Buffalo); Lu Su (SUNY Buffalo); Jing Gao (SUNY Buffalo); Qi Li (University of Illinois at Urbana-Champaign); Bolin Ding (Microsoft); Zhan Qin (SUNY Buffalo); Kui Ren (SUNY Buffalo)

Generalized Score Functions for Causal Discovery
Biwei Huang (Carnegie Mellon University); Kun Zhang (Carnegie Mellon University); Yizhu Lin (Carnegie Mellon University); Bernhard Schölkopf (Max-Planck Institute for Intelligent Systems); Clark Glymour (Carnegie Mellon University)

R-VQA: Learning Visual Relation Facts with Semantic Attention for Visual Question Answering
Pan Lu (Tsinghua University); Lei Ji (Microsoft); Wei Zhang (East China Normal University); Nan Duan (Microsoft); Ming Zhou (Microsoft); Jianyong Wang (Tsinghua University)

Research Track Session RT20: Methodology II, ICC Capital Suite Room 6+13 (Level 3)
Chair: Hengshu Zhu

Learning and Interpreting Complex Distributions in Empirical Data
Chengxi Zang (Tsinghua University); Peng Cui (Tsinghua University); Wenwu Zhu (Tsinghua University)

New Robust Metric Learning Model Using Maximum Correntropy Criterion
Jie Xu (University of Pittsburgh); Lei Luo (University of Pittsburgh); Cheng Deng (Xidian University); Heng Huang (University of Pittsburgh)

Data Diff: Interpretable, Executable Summaries of Changes in Distributions for Data Wrangling

Charles Sutton (The University of Edinburgh); Timothy Hobson (The Alan Turing Institute); James Geddes (The Alan Turing Institute); Rich Caruana (Microsoft)

Concentrated Differentially Private Gradient Descent with Adaptive per-Iteration Privacy Budget
Jaewoo Lee (University of Georgia); Daniel Kifer (The Pennsylvania State University)

FAHES: A Robust Disguised Missing Values Detector
Mourad Ouzzani (Qatar Computing Research Institute, HBKU); Nan Tang (Qatar Computing Research Institute, HBKU); Ahmed Elmagarmid (Qatar Computing Research Institute, HBKU); Raul Castro Fernandez (CSAIL MIT); Abdulhakim A. Qahtan (Qatar Computing Research Institute, HBKU)

HeavyGuardian: Separate and Guard Hot Items in Data Streams
Tong Yang (Peking University); Junzhi Gong (Peking University); Haowei Zhang (Peking University); Lei Zou (Peking University); Lei Shi (SKLCS, Institute of Software, Chinese Academy of Sciences); Xiaoming Li (Peking University)

Thursday 4:00PM - 5:00PM, KDD Closing Session, ICC Auditorium (Level 0)

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