



INTERNATIONAL CONFERENCE on
**Information and
Knowledge Management**

6 - 10 Nov 2017
SINGAPORE

IN SUPPORT OF



Smart Nation
S I N G A P O R E

Many Smart Ideas • One Smart Nation

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Grab is more than just the leading ride-hailing platform in Southeast Asia. We use data and technology to improve everything from transportation to payments across a region of more than 620 million people. Working with governments, drivers, passengers, and the community, we aim to unlock the true potential of SEA.



Zhiyan Technology is focused on the fusion of Artificial Intelligence and Customer Service. Zhiyan's research team powers a new era of artificial intelligence. We work on cutting-edge techniques for building dialogue bots that learn to engage in natural conversations with humans. With our deep language understanding approach, we help companies to build intelligent chatbots that are able to improve the engagement between their customers and the customer conversion rate.



Living Analytics Research Centre (LARC) is an NRF funded research centre hosted in Singapore Management University (SMU). LARC focuses on advancing data sensing, data mining, machine learning and crowdsourcing research so as to create technologies that address urban and social challenges in smart nation domains.



Shopee, backed by Sea, is the fastest-growing eCommerce platform in Southeast Asia and Taiwan. Officially launched in 2015, Shopee has exponentially grown in popularity within the region in less than a year. Headquartered in Singapore, Shopee employs more than 2000 people across Southeast Asia, Taiwan, Shenzhen and Shanghai.



Flipkart is India's largest e-commerce marketplace with a registered customer base of over 100 million. In the 10 years since it started, Flipkart has come to offer over 80 million products across 80+ categories including Smartphones, Books, Media, Consumer Electronics, Furniture, Fashion and Lifestyle. With over 1,00,000 registered sellers, Flipkart has redefined the way brands and MSME's do business online.



Meteorological Bureau Of Shenzhen Municipality is under the leadership of Shenzhen Government and China Meteorological Administration whose duties include meteorological administrative approval and services, meteorological disaster prevention management, meteorological public safety management, and meteorological industry management. Alibaba Cloud ranks as China's largest public cloud service provider and the fourth largest worldwide, providing global cloud computing services to help your business. Alibaba Cloud Tianchi is a global big data competition platform with 100,000+ developers from 2,700+ academic institutes across 73 countries.



DataSpark provides mobility intelligence about millions of people and places across Asia. We do so by processing large geo-spatial temporal datasets in a manner adhering to high standards of data privacy. Established in 2014, DataSpark is a subsidiary within Singtel, Asia's leading communications group. We operate in 4 locations across Asia, with a team of 70 data scientists and engineers.



Seeking to inspire, connect and engage, the Asia Pacific Innovation Center ("APIC") is an open platform that aims to foster supply chain co-innovation by offering a visionary view of the logistics world, and by developing innovative solutions to meet evolving needs. Driving research and proof-of-concepts throughout the region, focus trends include IOT, Analytics, Omni-channel, Robotics, Drones and Augmented Reality. The center is DHL's first outside of Germany, and the first dedicated center for innovative logistics services in the Asia-Pacific region.



Lazada is the number one online shopping & selling destination in Southeast Asia – present in Indonesia, Malaysia, the Philippines, Singapore, Thailand and Vietnam. Lazada helps more than 135,000 local and international sellers as well as 3,000 brands serve the 560 million consumers in the region through its marketplace platform, supported by a wide range of tailored marketing, data and service solutions. Lazada offers an excellent customer experience through a wide network of logistics partners and its own first- and last-mile delivery arm.

USE YOUR POWERS FOR GOOD.

Join Southeast Asia's largest mobile tech company & start making a positive impact today.

We're looking for Data Science & Engineering heroes.

Grab is powered by BIG data and BIG ideas. Come help us apply machine learning, optimization, simulation, forecasting and other advanced techniques to solve real problems faced by millions daily. Whether it's transportation, logistics, or payments you can have the power to make a difference!



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Collaborate with some of the brightest minds. Work to solve complex problems with innovative solutions.



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Enjoy competitive salaries while work on solving issues never yet addressed! Join Grab and optimize your growth.



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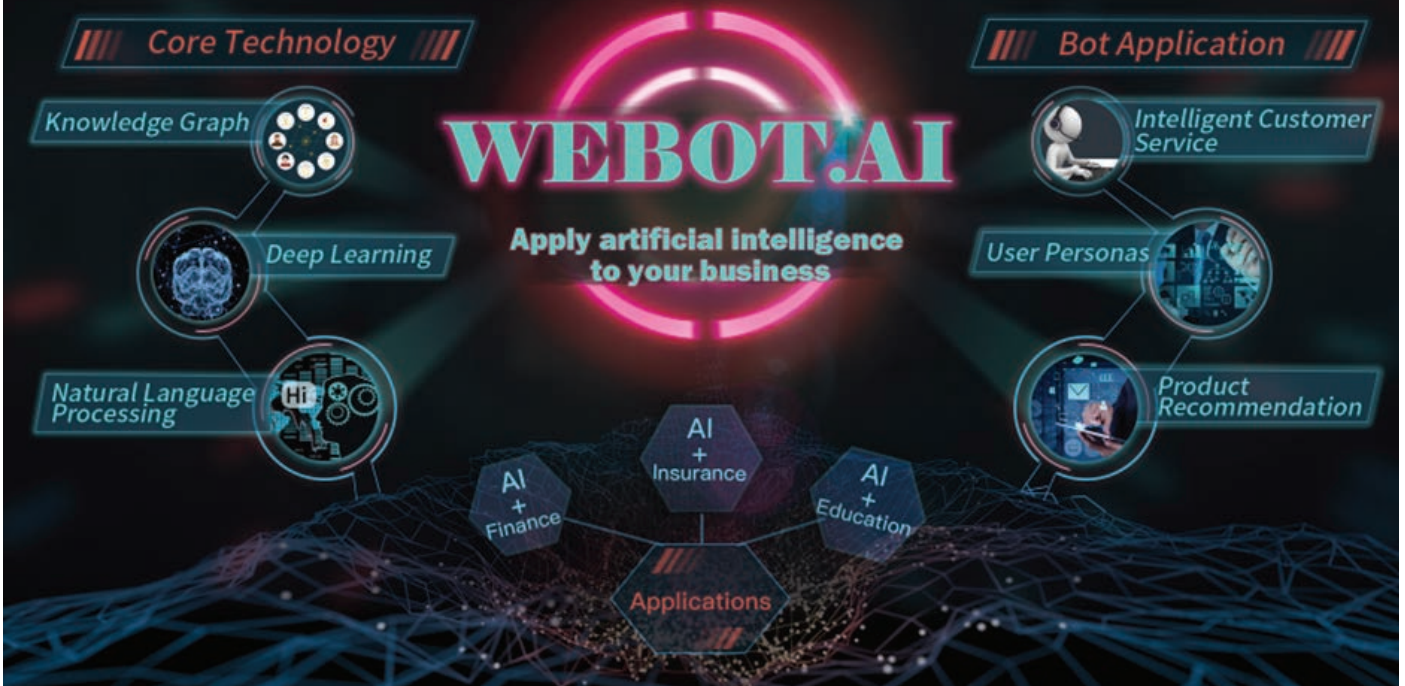
Want to have meaningful work? Join us & enable positive change across SEA that you can see everyday.



We can't wait to hear from you!

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<https://grab.careers/>

- Zhiyan Technology (Shenzhen) Limited is based in Shenzhen. Zhiyan's research team work on cutting-edge techniques for building task-oriented dialogue bots that learn to engage in natural conversations with humans.



Shopee is the fastest growing e-Commerce platform in Southeast Asia and Taiwan.

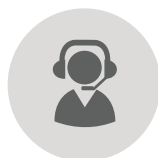
We bring convenient and localised e-Commerce to 7 markets: Singapore, Indonesia, Malaysia, Philippines, Taiwan, Thailand and Vietnam.



Payment security through escrow service



Integrated logistics solutions



Responsive customer service



Highly tailored app for each country

Interesting Facts

More than **2000** Total employees

More than **4B** GMV

More than **50M** Total downloads (annualised)

More than **100M** Total listings (annualised)

Visit careers.shopee.sg to find out more about us!

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As the cloud computing arm and a business unit of Alibaba Group (NYSE: BABA), Alibaba Cloud provides a comprehensive suite of global cloud computing services to help power and grow your business.

1,011,000 Paying Customers

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- A global competition platform focused on big data
- A community of data talents:
 - 100,000+ developers
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 - 73 countries and regions worldwide
- A provider of professional intelligent solutions



Our Target : Provide the citizens world-class weather service



Meteorological Bureau Of Shenzhen Municipality strives to construct collaborative disaster prevention system, intelligent modern meteorological service, sustainable technical innovation and standard scientific management system.

> 3-D Atmosphere Observation

Long-term stereoscopic multi-factor detecting and high spatiotemporal monitoring

> Refined Forecasting Technology

Top three severe weather forecast accuracy in Guangdong Province

> Innovative Modes on Science and Technology

~100 research achievements in last five years, 90% product conversation rate

> Meteorological Disaster Prevention System

Advanced disaster prevention system in the meteorological industry


Find more about us!

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DataSpark

clarity redefined

A woman with blonde hair pulled back, wearing a dark turtleneck, looks upwards with a thoughtful expression. Her face is partially overlaid with a vertical strip of a city skyline at night, showing illuminated buildings. The background is a blurred cityscape with warm bokeh lights in shades of yellow, orange, and pink. The overall composition is framed by diagonal geometric shapes in blue and magenta.

With DataSpark mobility intelligence behind your business, you've got a powerful way to gain new data insights about your customers - leaving you to make smarter business decisions.

For more information, please contact us at
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Conference Schedule

6 NOVEMBER MONDAY (WORKSHOP DAY)

07.30AM – 08.30AM	Registration	Ocean Gallery (Level 2)
08.30AM – 10.00AM (AM 1)	Workshops 1, 2, 3 & 4 AnalytiCup Refer to Workshop Day Table	Pg 30
10.00AM – 10.30AM	Morning Break	Ocean Gallery (Level 2)
10.30AM – 12.00PM (AM 2)	Workshops 1, 2, 3 & 4 AnalytiCup Refer to Workshop Day Table	Pg 30
12.00PM – 01.30PM	Lunch	Ocean Gallery (Level 2)
01.30PM – 03.00PM (PM 1)	Workshops 1, 2 & 5 CIKMConnect AnalytiCup Refer to Workshop Day Table	Pg 29 Pg 30
03.00PM – 03.30PM	Afternoon Break	Ocean Gallery (Level 2)
03.30PM – 05.00PM (PM 2)	Workshops 1, 2 & 5 CIKMConnect AnalytiCup Refer to Workshop Day Table	Pg 29 Pg 30

Workshop Day Table

Workshop 1: Data and Text Mining in Biomedical Informatics (DTM-Bio2017) Organizers: Doheon Lee, Mark Stevenson	Ocean 2
Workshop 2: Data & Algorithm Bias (DAB 2017) Organizers: Ricardo Baeza-Yates, Loreto Bravo, Ciro Cattuto, Leo Ferres, Jeanna Matthews, Daniela Paolotti	Ocean 10
Workshop 3: Interpretable Data Mining – Bridging the Gap between Shallow and Deep Models (IDM 2017) Organizers: Xia “Ben” Hu, Shuiwang Ji	Ocean 3
Workshop 4: Computational History (HistoInformatics 2017) Organizers: Mohammed Hasanuzzaman, Adam Jatowt, Gael Dias, Marten Düring, Antal van Den Bosch	Ocean 9
Workshop 5: Social Media Analytics for Smart Cities (SMASC 2017) Organizers: Manjira Sinha, Alessandro Bozzon, Sandya Mannarswamy, Xiangnan He, Pradeep K. Murukannaiah, Tridib Mukerjee	Ocean 3
CIKMConnect	Pacific 1
AnalytiCup	Rooms 309-311, Suntec Convention Centre

07.30AM – 08.30AM	Registration	Pacific Ballroom Foyer (Level 1)
08.30AM – 08.50AM (AM 1)	Conference Opening	Pacific Ballroom
08.50AM – 10.00AM (AM 1)	Keynote - Machine Learning @ Amazon Dr. Rajeev Rastogi Session chair: Marianne Winslett	Pg 51 Pacific Ballroom
10.00AM – 10.30AM	Morning Break	Pacific (Level 1)/ Ocean (Level 2) Foyer
10.30AM – 12.00PM	<p>Conference Track Pg 32</p> <p>Session 1A: Multimedia Session chair: Steven Hoi</p> <p>Session 1B: IR Evaluation Session chair: Yiqun Liu</p> <p>Session 1C: Sentiment Session chair: Sumit Bhatia</p> <p>Session 1D: Network Embedding 1 Session chair: Xiang Ren</p> <p>Session 1E: Web/App Data Session chair: Amin Beheshti</p> <p>Session 1F: Graph Data Session chair: Bingsheng He</p> <p>Hands-On Tutorial Massively Scalable Production Grade Deep Learning with the Microsoft Cognitive Toolkit</p> <p>BigTransport Workshop Pg 29</p>	<p>Ocean 3</p> <p>Pacific 1</p> <p>Ocean 4</p> <p>Ocean 5</p> <p>Pacific 3</p> <p>Pacific 2</p> <p>Ocean 1+2</p>
12.00PM – 01.30PM	Lunch	Pacific (Level 1)/ Ocean (Level 2) Foyer
01.30PM – 03.00PM (PM1)	<p>Conference Track Pg 33</p> <p>Session 2A: Ranking Session chair: Krisztian Balog</p> <p>Session 2B: Crowdsourcing 1 Session chair: Richard McCreddie</p> <p>Session 2C: Recommendation 1 Session chair: Min Zhang</p> <p>Session 2D: Network Embedding 2 Session chair: Mohammad Hasan</p> <p>Session 2E: Skyline Queries Session chair: Jinfei Liu</p> <p>Session 2F: Social Media Analysis Session chair: Chao Zhang</p> <p>Hands-On Tutorial (continued) Massively Scalable Production Grade Deep Learning with the Microsoft Cognitive Toolkit</p> <p>BigTransport Workshop Pg 29</p>	<p>Ocean 3</p> <p>Ocean 4</p> <p>Ocean 5</p> <p>Pacific 1</p> <p>Pacific 2</p> <p>Pacific 3</p> <p>Ocean 1+2</p>

03.00PM –
03.30PM

Afternoon Break

Pacific (Level 1)/
Ocean (Level 2) Foyer

03.30PM –
05.00PM (PM2)

Conference Track

Pg 34

Session 3A: Spatiotemporal

Session chair: Reynold Cheng

Ocean 3

Session 3B: Short Text Retrieval

Session chair: Maarten de Rijke

Pacific 3

Session 3C: Community Detection

Session chair: Yanfang (Fanny) Ye

Ocean 4

Session 3D: Time Series

Session chair: Xiaoyan Yang

Ocean 5

Session 3E: Query Processing

Session chair: Alfredo Cuzzocrea

Pacific 1

Session 3F: Temporal Data

Session chair: Vincent Zheng

Pacific 2

Hands-On Tutorial (continued)

Massively Scalable Production Grade Deep Learning with
the Microsoft Cognitive Toolkit

Ocean 1+2

BigTransport Workshop

Pg 29

06.30PM –
09.30PM

Poster Session
Reception

Pg 45

Pacific Ballroom

8 NOVEMBER WEDNESDAY (MAIN CONFERENCE)

07.30AM –
08.30AM

Registration

Pacific Ballroom Foyer
(Level 1)

08.30AM –
09.40AM (AM 1)

Keynote - How to Combine Deep & Transfer Learning

Dr. Qiang Yang

Session chair: Ee-Peng Lim

Pg 51

Pacific Ballroom

09.40AM –
10.50AM (AM 1)

Industry Insight & Vision Keynote -

The Hyperconnected Smart City

Dr. K Ananth Krishnan

Session chair: Marianne Winslett

Pg 52

Pacific Ballroom

10.50AM –
11.20AM

Morning Break

Pacific (Level 1)/
Ocean (Level 2) Foyer

11.20AM –
12.50PM (AM 2)

Conference Track

Pg 36

Session 4A: Evaluation

Session chair: Evangelos Kanoulas

Pacific 1

Session 4B: News and Credibility

Session chair: Adam Jatowt

Pacific 2

Session 4C: Outliers and Anomaly Detection

Session chair: Murat Kantarcioglu

Ocean 3

Session 4D: Graph Mining 1

Session chair: Shuai Ma

Ocean 4

Session 4E: Online Learning, Stream Mining

Session chair: Eric Lo

Ocean 5

11.20AM - 12.50PM (AM 2)	Hands-On Tutorial Large Scale Distributed Data Science from Scratch with Apache Spark 2.0 & Deep Learning	Ocean 1+2
12.50PM - 02:15PM	Lunch Demo Session Pg 43	Pacific (Level 1)/ Ocean (Level 2) Foyer Pacific 3
02:15PM - 03.45PM (PM 1)	Conference Track Pg 37 Session 5A: Tensor Analysis Session chair: Alfredo Cuzzocrea Session 5B: Application Driven Mining Session chair: Shane Culpepper Session 5C: Deep Learning 1 Session chair: Wei Wang Hands-On Tutorial (continued) Large Scale Distributed Data Science from Scratch with Apache Spark 2.0 & Deep Learning Demo Session (continued)	Pacific 1 Pacific 2 Ocean 3 & 4 Ocean 1+2 Pacific 3
03.45PM - 04.15PM	Afternoon Break	Pacific (Level 1)/ Ocean (Level 2) Foyer
04.15PM - 05.45PM (PM 2)	Conference Track Pg 37 Session 6A: Crowdsourcing 2 Session chair: Mark Sanderson Session 6B: User Behavior and Targeting Session chair: Ahmed Hassan Awadallah Session 6C: Deep Learning 2 Session chair: IL-Chul Moon Hands-On Tutorial (continued) Large Scale Distributed Data Science from Scratch with Apache Spark 2.0 & Deep Learning	Ocean 3 Ocean 4 Ocean 5 Ocean 1+2
06:15PM - 09:15PM (EVENING)	Banquet Presentation of awards	Pacific Ballroom

08.00AM – 09.00AM	Registration	Pacific Ballroom Foyer (Level 1)
09.00AM – 10.10AM (AM 1)	Keynote - Deception Detection: When Computers Become Better than Humans Dr. Rada Mihalcea Session chair: Mark Sanderson	Pg 52 Pacific Ballroom
10.10AM – 10.45AM (AM 1)	Morning Break	Pacific (Level 1)/ Ocean (Level 2) Foyer
10.45 AM – 12.15PM (AM 2)	Conference Track Pg 38 Session 7A: Health Analytics 1 Session chair: Zeyi Wen Session 7B: Privacy Preserving Data Mining Session chair: Zhenjie Zhang Session 7C: Social Networks 1 Session chair: Joyce Jiyong Whang Session 7D: Application Driven Analysis Session chair: Charles Nicholas Session 7E: Text Mining Session chair: Rada Mihalcea Session 7F: Efficient Learning Session chair: Matthias Petri Session 7G: Recommendation 2 Session chair: Chuan Shi	Pacific 1 Ocean 1 Pacific 2 Pacific 3 Ocean 2 Ocean 3 Ocean 4
12.15PM – 01.45PM	Lunch (01.00pm to 01.45pm: Townhall meeting at Pacific 3)	Pacific (Level 1)/ Ocean (Level 2) Foyer
01.45PM – 03.15PM (PM 1)	Conference Track Pg 40 Session 8A: Recommendation 3 Session chair: Hady W. Lauw Session 8B: Text Analysis Session chair: Chenliang Li Session 8C: Adversarial IR Session chair: Rajiv Ratn Shah Session 8D: Health Analytics 2/ Top-k Session chair: Aek Palakorn Achananuparp Session 8E: Social Networks 2 Session chair: Ilya Markov Session 8F: Feature/Entity Selection Session chair: Guansong Pang Session 8G: Graph Mining 2 Session chair: Miao Zhao	Ocean 1 Ocean 2 Pacific 1 Ocean 3 Pacific 2 Pacific 3 Ocean 4
03.15PM – 03.45PM	Afternoon Break	Pacific (Level 1)/ Ocean (Level 2) Foyer
03.45PM – 05.15PM (PM 2)	Conference Track Pg 41 Session 9A: Queries Session chair: Ruey-Cheng Chen Session 9B: Representation Learning Session chair: Yu Su	Ocean 4 Ocean 1

Conference Schedule

03.45PM – 05.15PM (PM 2)	Session 9C: Graph Mining 3	Ocean 2
	Session chair: Arijit Khan	
	Session 9D: Relational Mining	Ocean 3
	Session chair: Vincent Zheng	
	Session 9E: User Characteristics	Pacific 1
	Session chair: Latifur Khan	
	Session 9F: Engagement	Pacific 2
	Session chair: Rishabh Mehrotra	
	Session 9G: CIKM Test of Time Award Ceremony (Inaugural)	Pacific 3
	Session chair: James G. Shanahan	

10 NOVEMBER FRIDAY (TUTORIAL DAY)

07.30AM – 08.30AM	Registration	Ocean Foyer (Level 2)
08.30AM – 10.00AM (AM 1)	Refer to Tutorial Day Table : Tutorials 1, 2, 3 & 4	
10.00AM – 10.30AM	Morning Break	Ocean Foyer (Level 2)
10.30AM – 12.00PM (AM 2)	Refer to Tutorial Day Table : Tutorials 1, 2, 3 & 4	
12.00PM – 01.30PM	Lunch	Ocean Foyer (Level 2)
01.30PM – 03.00PM (PM 1)	Refer to Tutorial Day Table : Tutorials 5, 6, 7 & 8	
03.00PM – 03.30PM	Afternoon Break	Ocean Foyer (Level 2)
03.30PM – 05.00PM (PM 2)	Refer to Tutorial Day Table : Tutorials 5, 6, 7 & 8	

Tutorial Day Table Pg 53

Tutorial 1: Knowledge Extraction and Inference from Text: Shallow, Deep, and Everything in Between	Ocean 1
Tutorial 2: Task Based Search: Understanding & Inferring User Tasks and Needs	Ocean 2
Tutorial 3: Commonsense for Machine Intelligence: Text to Knowledge and Knowledge to Text	Ocean 3
Tutorial 4: Network Analysis in the Age of Large Network Dataset Collections – Challenges, Solutions and Applications	Ocean 9
Tutorial 5: Towards Space and Time Coupled Social Media	Ocean 1
Tutorial 6: Construction and Querying of Large-scale Knowledge Bases	Ocean 2
Tutorial 7: Knowledge Graphs: In Theory and Practice	Ocean 3
Tutorial 8: Malware Analysis for Data Scientists	Ocean 9

BIGTRANSPORT WORKSHOP

07.30AM – 08.30AM	Registration	Pacific Ballroom, Level 1, Pan Pacific
08.30AM – 08.50AM (AM 1)	CIKM 2017 Conference Opening	
08.50AM – 10.00AM (AM 1)	CIKM2017 Keynote	
10.00AM – 10.45AM	Morning Break	Room 309 – 311, Level 3, Suntec Singapore Convention Centre
10.45AM – 12.00PM (AM 2)	Keynote Dr Xing Xie Microsoft Research Asia	
12.00PM – 01.30PM	Lunch	
01.30PM – 02.50PM (PM 1)	Invited Speakers' Talk	
02.50PM – 04.00PM (PM 2)	Afternoon Break Demo & Poster Session	

CIKMCONNECT

01.30PM – 02.00PM	Welcome Message & Introduction	Pacific 1, Pan Pacific
02.00PM – 03.55PM	Invited Industry Talks	
03.55PM – 05.00PM	Poster Session	
05.00PM – 05.45PM	Coffee Break	Room 309 – 311, Suntec City
05.45PM – 06.45PM	CIKMConnect Finale Session	

CIKM ANALYTICUP

6 NOV | ROOM 309-311, LEVEL 3, SUNTEC SINGAPORE CONVENTION CENTRE

Session 1 (0900 - 1030): Shenzhen Meteorological Bureau-Alibaba Short-Time Quantitative Precipitation Forecasting Challenge

09.00AM - 09.05AM	Opening remarks
09.05AM - 09.30AM	SZMB-Alibaba talk
09.30AM - 09.45AM	Short-Term Precipitation Forecasting Based on Radar Reflectivity Images by Yichen Yao and Zhongjie Li
09.45AM - 10.00AM	A Method for Short-Term Quantitative Precipitation Forecasting by Zhi Zhang and Shenghua Wei
10.00AM - 10.15AM	Deep Neural Networks with Residual Connections for Precipitation Forecasting by Mao Nguyen, Phu Nguyen, Thu Vo, and Lam Hoang
10.15AM - 10.30AM	Award ceremony
10.30AM - 11.00AM	Morning Break

Session 2 (1100 - 1230): DataSpark Mobility Open-Task Challenge

11.00AM - 11.05AM	Opening remarks
11.05AM - 11.17AM	A visual network-based tool for transportation planning and simulation by Gianni Barlacchi, Luca Pappalardo, Michele Ferretti, and Bruno Lepri
11.17AM - 11.29AM	Detection, Localization and Characterization of Transient, Urban Events using Multi-Modal Information by Kasthuri Jayarajah, Noel Athaide, Vigneshwaran Subbaraju, and Archan Misra
11.29AM - 11.41AM	Predicting Taxi Demand-Supply Mismatches to Dynamically Position Mobility-on-Demand Services by Shashi Shekhar Jha, Menusha Milaj, Shih-Fen Cheng, and Archan Misra
11.41AM - 11.53AM	Pattern Analysis in Smart City Mobility - An Application in Singapore by Camelia Elena Ciolac
11.53AM - 12.05PM	Better Situational Information on Haze Crises in Southeast Asia and their Impacts on Human Mobility in Singapore by Imaduddin Amin, Muhammad Rheza, and Jong Gun Lee
12.05PM - 12.20PM	Judges' deliberation
12.20PM - 12.30PM	Award ceremony
12.30PM - 13.45PM	Lunch Break

Session 3 (1345 - 1515): Lazada Product Title Quality Challenge

13.45PM – 14.00PM	Lazada talk
14.00PM – 14.12PM	Multi-layer stacking with deep learning, boosting and bagging models generated from diverse feature sets by Akshay Bhone and Samarth Agarwal
14.12PM – 14.24PM	Bagging Model for Product Title Quality with Noise by Tam T. Nguyen, Ebrahim Bagheri, Hossein Fani, and Gilberto Titericz
14.24PM – 14.36PM	A Bag of Features for Short Text Classification by Minh C. Phan and Yi Tay
14.36PM – 14.48PM	Constructing Features for a Diversified Ensemble of Classifiers by Massimo Nicosia and Alessandro Moschitti
14.48PM – 15.00PM	Town hall discussion
15.00PM – 15.15PM	Award ceremony
15.15PM – 15.30PM	Break

Session 4 (1530 - 1700): DHL Temperature-Controlled Supply Chain Hackathon Challenge

15.30PM – 15.45PM	Opening remarks
15.45PM – 15.55PM	Finalist #1 presentation
15.55PM – 16.05PM	Finalist #2 presentation
16.05PM – 16.15PM	Finalist #3 presentation
16.15PM – 16.25PM	Finalist #4 presentation
16.25PM – 16.35PM	Finalist #5 presentation
16.35PM – 16.45PM	Judges' deliberation
16.45PM – 17.00PM	Award ceremony
17.00PM – 17.45PM	Afternoon Break
17.45PM – 18.45PM	CIKMConnect Finale Session

Conference Tracks

7 NOVEMBER (TUESDAY) | 10.30AM – 12.00PM (AM 2)

Session 1A: Multimedia | Ocean 3

Chair: Steven Hoi

1987 -- Jointly Modeling Static Visual Appearance and Temporal Pattern for Unsupervised Video Hashing -- Chao Li (University of Queensland); Yang Yang (University of Electronic Science and Technology of China); Jiewei Cao (University of Queensland); Zi Huang (University of Queensland)
1324 -- Construction of a National Scale ENF Map using Online Multimedia Data -- Hyunsoo Kim (Korea University); Youngbae Jeon (Korea University); Ji Won Yoon (Korea University)
394 -- Dual Learning for Cross-domain Image Captioning -- Wei Zhao (Chinese Academy of Sciences & University of Chinese Academy of Sciences); Wei Xu (Tencent); Min Yang (Chinese Academy of Sciences & Tencent AI Lab); Jianbo Ye (Pennsylvania State University); Zhou Zhao (Zhejiang University); Yabing Feng (Tencent); Yu Qiao (Chinese Academy of Sciences)
12 -- A New Approach to Compute CNNs for Extremely Large Images -- Sai Wu (Zhejiang University); Mengdan Zhang (Zhejiang University); Gang Chen (Zhejiang University); Ke Chen (Zhejiang University)

Session 1B: IR Evaluation | Pacific 1

Chair: Yiqun Liu

1728 -- Active Sampling for Large-scale Information Retrieval Evaluation -- Dan Li (University of Amsterdam); Evangelos Kanoulas (University of Amsterdam)
2187 -- Intent Based Relevance Estimation from Click Logs -- Prakash Mandayam Comar (amazon.com); Srinivasan H. Sengamedu (amazon.com)
1517 -- A Comparison of Nuggets and Clusters for Evaluating Timeline Summaries -- Gaurav Baruah (University of Waterloo); Richard McCreadie (University of Glasgow); Jimmy Lin (University of Waterloo)
174 -- Sensitive and Scalable Online Evaluation with Theoretical Guarantees -- Harrie Oosterhuis (University of Amsterdam); Maarten de Rijke (University of Amsterdam)

Session 1C: Sentiment | Ocean 4

Chair: Sumit Bhatia

180 -- Users Are Known by the Company They Keep: Topic Models for Viewpoint Discovery in Social Networks -- Thibaut Thonet (IRIT, Université de Toulouse, CNRS); Guillaume Cabanac (IRIT, Université de Toulouse, CNRS); Mohand Boughanem (IRIT, Université de Toulouse, CNRS); Karen Pinel-Sauvagnat (IRIT, Université de Toulouse, CNRS)
2086 -- Aspect-level Sentiment Classification with HEAT (HiErarchical ATtention) Network -- Jiajun Cheng (National University of Defense Technology); Shenglin Zhao (Chinese University of Hong Kong); Jiani Zhang (Chinese University of Hong Kong); Irwin King (Chinese University of Hong Kong); Xin Zhang (National University of Defense Technology); Hui Wang (National University of Defense Technology)
557 -- Dyadic Memory Networks for Aspect-based Sentiment Analysis -- Yi Tay (Nanyang Technological University); Anh Tuan Luu (Agency for Science and Technology Research (A*Star) Singapore); Siu Cheung Hui (Nanyang Technological University)
317 -- Modeling Language Discrepancy for Cross-Lingual Sentiment Analysis -- Qiang Chen (Tencent); Chenliang Li (Wuhan University); Wenjie Li (The Hong Kong Polytechnic University)

Session 1D: Network Embedding | Ocean 5

Chair: Xiang Ren

285 -- Multi-view Clustering with Graph Embedding for Connectome Analysis -- Guixiang Ma (University of Illinois at Chicago); Lifang He (University of Illinois at Chicago); Chun-Ta Lu (University of Illinois at Chicago); Weixiang Shao (Google Inc); Philip S Yu (University of Illinois at Chicago & Fudan University); Alex D Leow (University of Illinois at Chicago); Ann B Ragin (Northwestern University)
236 -- Attributed Signed Network Embedding -- Suhang Wang (Arizona State University); Charu Aggarwal (IBM T. J. Watson Research Center); Jiliang Tang (Michigan State University); Huan Liu (Arizona State University)
203 -- Enhancing the Network Embedding Quality with Structural Similarity -- Tianshu Lyu (Peking University); Yuan Zhang (Peking University); Yan Zhang (Peking University)
128 -- On Embedding Uncertain Graphs -- Jiafeng Hu (University of Hong Kong); Reynold Cheng (University of Hong Kong); Zhipeng Huang (University of Hong Kong); Yixiang Fang (University of Hong Kong); Siqiang Luo (University of Hong Kong)

Session 1E: Web/App Data | Pacific 3

Chair: Amin Beheshti

1956 -- A Large Scale Prediction Engine for App Install Clicks and Conversions -- Narayan Bhamidipati (Yahoo Research); Ravi Kant (Yahoo Research); Shaunak Mishra (Yahoo Research)
1656 -- Building Natural Language Interfaces to Web APIs -- Yu Su (University of California Santa Barbara); Ahmed Hassan

Awadallah (Microsoft Research); Madian Khabisa (Microsoft Research); Patrick Pantel (Microsoft Research); Michael Gamon (Microsoft Research); Mark Encarnacion (Microsoft Research)
 141 -- UFeed: Refining Web Data Integration Based on User Feedback -- Ahmed El-Roby (University of Waterloo); Ashraf Aboulnaga (Qatar Computing Research Institute)
 37 -- Extracting Records from the Web Using a Signal Processing Approach -- Roberto Panerai Velloso (Universidade Federal de Santa Catarina - UFSC); Carina F. Dorneles (Universidade Federal de Santa Catarina - UFSC)

Session 1F: Graph Data | Pacific 2

Chair: Bingsheng He

1542 -- A Scalable Graph-Coarsening Based Index for Dynamic Graph Databases -- Akshay Kansal (Boise State University); Francesca Spezzano (Boise State University)
 1249 -- Natural Language Question/Answering: Let Users Talk With The Knowledge Graph -- Weiguo Zheng (Chinese University of Hong Kong); Hong Cheng (Chinese University of Hong Kong); Lei Zou (Peking University); Jeffrey Xu Yu (Chinese University of Hong Kong); Kangfei Zhao (Chinese University of Hong Kong)
 914 -- Keyword Search on RDF Graphs - A Query Graph Assembly Approach -- Shuo Han (Peking University); Lei Zou (Peking University); Jeffrey Xu Yu (Chinese University of Hong Kong); Dongyan Zhao (Peking University)
 1592 -- Region Representation Learning via Mobility Flow -- Hongjian Wang (Pennsylvania State University); Zhenhui Li (Pennsylvania State University)

7 NOVEMBER (TUESDAY) | 1.30PM – 3.00PM (PM 1)

Session 2A: Ranking | Ocean 3

Chair: Krisztian Balog

685 -- Learning Visual Features from Snapshots for Web Search -- Yixing Fan (University of Chinese Academy of Sciences & CAS Key Lab of Network Data Science and Technology); Jiafeng Guo (CAS Key Lab of Network Data Science and Technology); Yanyan Lan (CAS Key Lab of Network Data Science and Technology); Jun Xu (CAS Key Lab of Network Data Science and Technology); Liang Pang (CAS Key Lab of Network Data Science and Technology); Xueqi Cheng (CAS Key Lab of Network Data Science and Technology)
 312 -- DeepRank: A New Deep Architecture for Relevance Ranking in Information Retrieval -- Liang Pang (Chinese Academy of Sciences & University of Chinese Academy of Sciences); Yanyan Lan (Chinese Academy of Sciences & University of Chinese Academy of Sciences); Jiafeng Guo (Chinese Academy of Sciences & University of Chinese Academy of Sciences); Jun Xu (Chinese Academy of Sciences & University of Chinese Academy of Sciences); Jingfang Xu (Sogou Inc); Xueqi Cheng (Chinese Academy of Sciences & University of Chinese Academy of Sciences)
 2146 -- Learning to Un-Rank: Quantifying Search Exposure for Users in Online Communities -- Asia J. Biega (Max Planck Institute for Informatics); Azin Ghazimatin (Max Planck Institute for Informatics); Hakan Ferhatosmanoglu (University of Warwick); Krishna P. Gummadi (Max Planck Institute for Software Systems); Gerhard Weikum (Max Planck Institute for Informatics)
 176 -- Balancing Speed and Quality in Online Learning to Rank for Information Retrieval -- Harrie Oosterhuis (University of Amsterdam); Maarten de Rijke (University of Amsterdam)

Session 2B: Crowdsourcing 1 | Ocean 4

Chair: Richard McCreadie

290 -- Crowd-enabled Pareto-Optimal Objects Finding Employing Multi-Pairwise-Comparison Questions -- Chang Liu (Shandong University); Yinan Zhang (Shandong University); Lei Liu (Shandong University); Lizhen Cui (Shandong University); Dong Yuan (University of Sydney); Chunyan Miao (Nanyang Technological University)
 166 -- Destination-aware Task Assignment in Spatial Crowdsourcing -- Yan Zhao (Soochow University); Yang Li (Soochow University); Yu Wang (Chinese University of Hong Kong); Han Su (University of Electronic Science and Technology of China); Kai Zheng (University of Electronic Science and Technology of China)
 157 -- Crowdsourced Selection on Multi-Attribute Data -- Xueping Weng (Tsinghua University); Guoliang Li (Tsinghua University); Huiqi Hu (Tsinghua University); Jianhua Feng (Tsinghua University)
 55 -- Select Your Questions Wisely: For Entity Resolution With Crowd Errors -- Vijaya Krishna Yalavarthi (Nanyang Technological University); Xiangyu Ke (Nanyang Technological University); Arijit Khan (Nanyang Technological University)

Session 2C: Recommendation 1 | Ocean 5

Chair: Min Zhang

1278 -- Reply With: Proactive Recommendation of Email Attachments -- Christophe Van Gysel (University of Amsterdam); Bhaskar Mitra (Microsoft); Matteo Venanzi (Microsoft); Roy Rosemarin (Microsoft); Grzegorz Kukla (Microsoft); Piotr Grudzien (Microsoft); Nicola Cancedda (Microsoft)
 298 -- Learning and Transferring Social and Item Visibilities for Personalized Recommendation -- Lin Xiao (Tsinghua University); Zhang Min (Tsinghua University); Zhang Yongfeng (University of Massachusetts Amherst); Liu Yiqun (Tsinghua University); Ma Shaoping (Tsinghua University)
 151 -- Joint Topic-Semantic-aware Social Recommendation for Online Voting -- Hongwei Wang (Shanghai Jiao Tong University & The Hong Kong Polytechnic University); Jia Wang (The Hong Kong Polytechnic University); Miao Zhao (The Hong Kong

Polytechnic University); Jiannong Cao (The Hong Kong Polytechnic University); Minyi Guo (Shanghai Jiao Tong University)
88 -- Interactive Social Recommendation -- Xin Wang (Tsinghua University); Steven C.H. Hoi (Singapore Management University); Chenghao Liu (Zhejiang University); Martin Ester (Simon Fraser University); Chun Chen (Zhejiang University)

Session 2D: Network Embedding 2 | Pacific 1

Chair: Mohammad Hasan

1219 -- From Properties to Links: Deep Network Embedding on Incomplete Graphs -- Dejian Yang (Beihang University); Senzhang Wang (Nanjing University of Aeronautics and Astronautics); Chaozhuo Li (Beihang University); Xiaoming Zhang (Beihang University); Zhoujun Li (Beihang University)
465 -- Learning Community Embedding with Community Detection and Node Embedding on Graphs -- Sandro Cavallari (Nanyang Technological University); Vincent W. Zheng (Advanced Digital Sciences Center); Hongyun Cai (Advanced Digital Sciences Center); Kevin Chen-Chuan Chang (University of Illinois at Urbana-Champaign); Erik Cambria (Nanyang Technological University)
374 -- Attributed Network Embedding for Learning in a Dynamic Environment -- Jundong Li (Arizona State University); Harsh Dani (Arizona State University); Xia Hu (Texas A&M University); Jiliang Tang (Michigan State University); Yi Chang (Huawei Research America); Huan Liu (Arizona State University)
350 -- Learning Node Embeddings in Interaction Graphs -- Yao Zhang (Fudan University); Yun Xiong (Fudan University); Xiangnan Kong (Worcester Polytechnic Institute); Yangyong Zhu (Fudan University)

Session 2E: Skyline Queries | Pacific 2

Chair: Jinfei Liu

1687 -- Efficient Computation of Subspace Skyline over Categorical Domains -- Md Farhadur Rahman (University of Texas at Arlington); Abolfazl Asudeh (University of Texas at Arlington); Nick Koudas (University of Toronto); Gautam Das (University of Texas at Arlington)
824 -- Fast Algorithms for Pareto Optimal Group-based Skyline -- Wenhui Yu (Tsinghua University); Zheng Qin (Tsinghua University); Jinfei Liu (Emory University & Georgia Institute of Technology); Li Xiong (Emory University); Xu Chen (Tsinghua University); Huidi Zhang (Tsinghua University)
509 -- Probabilistic Skyline on Incomplete Data -- Kaiqi Zhang (Harbin Institute of Technology); Hong Gao (Harbin Institute of Technology); Xixian Han (Harbin Institute of Technology); Zhipeng Cai (Georgia State University); Jianzhong Li (Harbin Institute of Technology)
491 -- Communication-Efficient Distributed Skyline Computation -- Haoyu Zhang (Indiana University Bloomington); Qin Zhang (Indiana University Bloomington)

Session 2F: Social Media Analysis | Pacific 3

Chair: Chao Zhang

1683 -- Bringing Salary Transparency to the World: Computing Robust Compensation Insights via LinkedIn Salary -- Krishnamurthy Kenthapadi (LinkedIn Corporation); Stuart Ambler (LinkedIn Corporation); Liang Zhang (LinkedIn Corporation); Deepak Agarwal (LinkedIn Corporation)
1737 -- Efficient Document Filtering Using Vector Space Topic Expansion and Pattern-Mining -- Julia Proskurnia (École Polytechnique Fédérale de Lausanne); Ruslan Mavlyutov (University of Fribourg); Carlos Castillo (Universitat Pompeu Fabra); Karl Aberer (École Polytechnique Fédérale de Lausanne); Philippe CudrĂ©-Mauroux (University of Fribourg)
1481 -- LARM: A Lifetime Aware Regression Model for Predicting YouTube Video Popularity -- Changsha Ma (State University of New York at Buffalo); Zhisheng Yan (Georgia State University); Chang Wen Chen (State University of New York at Buffalo)
444 -- Modeling Affinity based Popularity Dynamics -- Minkyong Kim (Commonwealth Scientific and Industrial Research Organisation (CSIRO) & Stanford University); Daniel A. McFarland (Stanford University); Jure Leskovec (Stanford University)

7 NOVEMBER (TUESDAY) | 3.30PM – 5.00PM (PM 2)

Session 3A: Spatiotemporal | Ocean 3

Chair: Reynold Cheng

24 -- Scenic Routes Now: Efficiently Solving the Time-Dependent Arc Orienteering Problem -- Ying Lu (University of Southern California); Gregor Josse (LMU Munich); Tobias Emrich (LMU Munich); Ugur Demiryurek (University of Southern California); Matthias Renz (George Mason University); Cyrus Shahabi (University of Southern California); Matthias Schubert (LMU Munich)
1870 -- Modeling Temporal-Spatial Correlations for Crime Prediction -- Xiangyu Zhao (Michigan State University); Dawei Yin (JD.com); Jiliang Tang (Michigan State University)
1472 -- Spatiotemporal Event Forecasting from Incomplete Hyper-local Price Data -- Xuchao Zhang (Virginia Tech); Liang Zhao (George Mason University); Arnold P. Boedihardjo (U. S. Army Corps of Engineers); Chang-Tien Lu (Virginia Tech); Naren Ramakrishnan (Virginia Tech)
194 -- Exploiting Spatio-Temporal User Behaviors for User Linkage -- Wei Chen (Soochow University); Hongzhi Yin (University of Queensland); Weiqing Wang (University of Queensland); Lei Zhao (Soochow University); Wen Hua (University of Queensland); Xiaofang Zhou (University of Queensland)

Session 3B: Short Text Retrieval | Pacific 3

Chair: Maarten de Rijke

2017 -- Similarity-based Distant Supervision for Definition Retrieval -- Jiepu Jiang (University of Massachusetts Amherst); James Allan (University of Massachusetts Amherst)
 1309 -- Hybrid BiLSTM-Siamese network for FAQ Assistance -- Prerna Khurana (TCS Research); Puneet Agarwal (TCS Research); Gautam Shroff (TCS Research); Lovekesh Vig (TCS Research); Ashwin Srinivasan (BITS Pilani)
 1678 -- Regularized and Retrofitted models for Learning Sentence Representation with Context -- Tanay Kumar Saha (Indiana University Purdue University Indianapolis); Shafiq Joty (Nanyang Technological University); Naeemul Hassan (University of Mississippi); Mohammad Al Hasan (Indiana University Purdue University Indianapolis)
 162 -- Talking to Your TV: Context-Aware Voice Search with Hierarchical Recurrent Neural Networks -- Jinfeng Rao (Comcast Applied AI Research Lab & University of Maryland); Ferhan Ture (Comcast Applied AI Research Lab); Hua He (University of Maryland); Oliver Jojic (Comcast Applied AI Research Lab); Jimmy Lin (University of Waterloo)

Session 3C: Community Detection | Ocean 4

Chair: Yanfang (Fanny) Ye

932 -- GPU-Accelerated Graph Clustering via Parallel Label Propagation -- Yusuke Kozawa (AIST); Toshiyuki Amagasa (University of Tsukuba); Hiroyuki Kitagawa (University of Tsukuba)
 899 -- Temporally Like-minded User Community Identification through Neural Embeddings -- Hossein Fani (University of New Brunswick & Ryerson University); Ebrahim Bagheri (Ryerson University & Ryerson University); Weichang Du (University of New Brunswick)
 230 -- Community-Based Network Alignment for Large Attributed Network -- Zheng Chen (Drexel University); Xinli Yu (Temple University); Bo Song (Drexel University); Jianliang Gao (Drexel University); Xiaohua Hu (Drexel University); Wei-Shih Yang (Temple University)
 210 -- A Non-negative Symmetric Encoder-Decoder Approach for Community Detection -- Bing-Jie Sun (Chinese Academy of Sciences); Huawei Shen (Chinese Academy of Sciences); Jinhua Gao (Chinese Academy of Sciences); Wentao Ouyang (Chinese Academy of Sciences); Xueqi Cheng (Chinese Academy of Sciences)

Session 3D: Time Series | Ocean 5

Chair: Xiaoyan Yang

1917 -- Fast Word Recognition for Noise channel-based Models in Scenarios with Noise Specific Domain Knowledge -- Marco Cristo (Federal University of Amazonas); RaAza Hanada (University of Sao Paulo); André L. Carvalho (Federal University of Amazonas); Fernando Anglada Loes (Federal University of Amazonas); Maria da Graça Campos Pimentel (University of Sao Paulo)
 1914 -- Detecting Multiple Periods and Periodic Patterns in Event Time Sequences -- Quan Yuan (University of Illinois at Urbana-Champaign); Jingbo Shang (University of Illinois at Urbana-Champaign); Xin Cao (University of New South Wales); Chao Zhang (University of Illinois at Urbana-Champaign); Xinhe Geng (University of Illinois at Urbana-Champaign); Jiawei Han (University of Illinois at Urbana-Champaign)
 1316 -- Finding Periodic Discrete Events in Noisy Streams -- Abhirup Ghosh (University of Edinburgh); Christopher Lucas (University of Edinburgh); Rik Sarkar (University of Edinburgh)
 1302 -- Fast and Accurate Time Series Classification with WEASEL -- Patrick Schäfer (Humboldt University of Berlin); Ulf Leser (Humboldt University of Berlin)

Session 3E: Query Processing | Pacific 1

Chair: Alfredo Cuzzocrea

402 -- QLever: A Query Engine for Efficient SPARQL+Text Search -- Hannah Bast (University of Freiburg); Björn Buchhold (University of Freiburg)
 319 -- A Study of Main-Memory Hash Joins on Many-core Processor: A Case with Intel Knights Landing Architecture -- Xuntao Cheng (Nanyang Technological University); Bingsheng He (National University of Singapore); Xiaoli Du (National University of Defense Technology); Chiew Tong Lau (Nanyang Technological University)
 206 -- PQBF: I/O-Efficient Approximate Nearest Neighbor Search by Product Quantization -- Yingfan Liu (Chinese University of Hong Kong); Hong Cheng (Chinese University of Hong Kong); Jiangtao Cui (Xidian University)
 145 -- ANS-Based Index Compression -- Alistair Moffat (University of Melbourne); Matthias Petri (University of Melbourne)

Session 3F: Temporal Data | Pacific 2

Chair: Vincent Zheng

556 -- Covering the Optimal Time Window Over Temporal Data -- Bin Cao (Zhejiang University of Technology); Chenyu Hou (Zhejiang University of Technology); Jing Fan (Zhejiang University of Technology)
 2087 -- Scaling Probabilistic Temporal Query Evaluation -- Melisachew Wudage Chekol (University of Mannheim);
 460 -- Efficient Discovery of Abnormal Event Sequences in Enterprise Security Systems -- Boxiang Dong (NEC Laboratories America & Montclair State University); Zhengzhang Chen (NEC Laboratories America); Hui (Wendy) Wang (Stevens Institute of Technology); Lu-AN Tang (NEC Laboratories America); Kai Zhang (Temple University); Ying Lin (University of Washington); Zhichun Li (NEC Laboratories America); Haifeng Chen (NEC Laboratories America)
 338 -- Temporal Analog Retrieval using Transformation over Dual Hierarchical Structures -- Yating Zhang (RIKEN AIP Center/

NAIST); Adam Jatowt (Kyoto University); Katsumi Tanaka (Kyoto University)

8 NOVEMBER (WEDNESDAY) | 11.20AM – 12.50PM (AM 2)

Session 4A: Evaluation | Pacific 1

Chair: Evangelos Kanoulas

2043 -- Does That Mean You're Happy? -- Kyle Williams (Microsoft); Imed Zitouni (Microsoft)
 1524 -- Deep Sequential Models for Task Satisfaction Prediction -- Rishabh Mehrotra (University College London); Ahmed Hassan Awadallah (Microsoft Research); Milad Shokouhi (Microsoft Inc.); Emine Yilmaz (University College London); Imed Zitouni (Microsoft Inc.); Ahmed El Kholy (Microsoft Inc); Madian Khabsa (Microsoft Research)
 2019 -- Adaptive Persistence for Search Effectiveness Measures -- Jiepu Jiang (University of Massachusetts Amherst); James Allan (University of Massachusetts Amherst)
 193 -- Beyond Success Rate: Utility as a Search Quality Metric for Online Experiments -- Widad Machmouchi (Microsoft); Ahmed Hassan Awadallah (Microsoft); Imed Zitouni (Microsoft); Georg Buscher (Facebook)

Session 4B: News and Credibility | Pacific 2

Chair: Adam Jatowt

1402 -- Linking News across Multiple Streams for Timeliness Analysis -- Ida Mele (Universita' della Svizzera italiana (USI)); Seyed Ali Bahrainian (Universita' della Svizzera italiana (USI)); Fabio Crestani (Universita' della Svizzera italiana (USI))
 352 -- Growing Story Forest Online from Massive Breaking News -- Bang Liu (University of Alberta); Di Niu (University of Alberta); Kunfeng Lai (Tencent Inc.); Linglong Kong (University of Alberta); Yu Xu (Tencent Inc.)
 1465 -- iFACT: An Interactive Framework to Assess Claims from Tweets -- Wee Yong Lim (National University of Singapore); Mong Li Lee (National University of Singapore); Wynne Hsu (National University of Singapore)
 65 -- CSI: A Hybrid Deep Model for Fake News Detection -- Natali Ruchansky (University of Southern California); Sungyong Seo (University of Southern California); Yan Liu (University of Southern California)

Session 4C: Outliers and Anomaly Detection | Ocean 3

Chair: Murat Kantarcioglu

1464 -- Selective Value Coupling Learning for Detecting Outliers in High-Dimensional Categorical Data -- Guansong Pang (University of Technology Sydney); Hongzuo Xu (National University of Defense Technology); Longbing Cao (University of Technology Sydney); Wentao Zhao (National University of Defense Technology)
 1390 -- Outlier Detection in Sparse Data with Factorization Machines -- Mengxiao Zhu (Beihang University & Beijing Advanced Innovation Center for Big Data and Brain Computing); Charu C. Aggarwal (IBM T. J. Watson Research Center); Shuai Ma (Beihang University & Beijing Advanced Innovation Center for Big Data and Brain Computing); Hui Zhang (Beihang University & Beijing Advanced Innovation Center for Big Data and Brain Computing); Jinpeng Huai (Beihang University & Beijing Advanced Innovation Center for Big Data and Brain Computing)
 986 -- Anomaly Detection in Dynamic Networks using Multi-view Time-Series Hypersphere Learning -- Xian Teng (University of Pittsburgh); Yu-Ru Lin (University of Pittsburgh); Xidao Wen (University of Pittsburgh)
 532 -- A Fast Trajectory Outlier Detection Approach via Driving Behavior Modeling -- Hao Wu (Fudan University); Weiwei Sun (Fudan University); Baihua Zheng (Singapore Management University)

Session 4D: Graph Mining 1 | Ocean 4

Chair: Shuai Ma

1901 -- BL-ECD: Broad Learning based Enterprise Community Detection via Hierarchical Structure Fusion -- Jiawei Zhang (Florida State University); Limeng Cui (University of Chinese Academy of Sciences); Philip S. Yu (University of Illinois at Chicago); Yuanhua Lv (Microsoft)
 1553 -- Highly Efficient Mining of Overlapping Clusters in Signed Weighted Networks -- Tuan-Anh Hoang (Leibniz University of Hanover); Ee-Peng Lim (Singapore Management University)
 1427 -- To Be Connected, or Not to Be Connected: That is the Minimum Inefficiency Subgraph Problem -- Natali Ruchansky (University of Southern California); Francesco Bonchi (ISI Foundation); David Garcia-Soriano (Universidad Pompeu Fabra); Francesco Gullo (UniCredit); Nicolas Kourtellis (Telefonica Research)
 1084 -- MGAE: Marginalized Graph Autoencoder for Graph Clustering -- Chun Wang (University of Technology Sydney); Shirui Pan (University of Technology Sydney); Guodong Long (University of Technology Sydney); Xingquan Zhu (Florida Atlantic University); Jing Jiang (University of Technology Sydney)

Session 4E: Online Learning, Stream Mining | Ocean 5

Chair: Eric Lo (ericlo@cse.cuhk.edu.hk)

1214 -- BoostVHT: Boosting Distributed Streaming Decision Trees -- Theodore Vasiloudis (RISE SICS); Foteini Beligianni (Royal Institute of Technology, KTH); Gianmarco De Francisci Morales (Qatar Computing Research Institute)
 2176 -- Stream Aggregation Through Order Sampling -- Nick Duffield (Texas A&M University); Yunhong Xu (Texas A&M University); Liangzhen Xia (Texas A&M University); Nesreen K. Ahmed (Intel Labs); Minlan Yu (Yale University)
 131 -- FUSION - An Online Method for Multistream Classification -- Ahsanul Haque (University of Texas at Dallas); Zhuoyi

Wang (University of Texas at Dallas); Swarup Chandra (University of Texas at Dallas); Bo Dong (University of Texas at Dallas); Latifur Khan (University of Texas at Dallas); Kevin W. Hamlen (University of Texas at Dallas)

8 NOVEMBER (WEDNESDAY) | 2:15PM – 3.45PM (PM 1)

Session 5A: Tensor Analysis | Pacific 1

Chair: Alfredo Cuzzocrea

255 -- Maintaining Densest Subsets Efficiently in Evolving Hypergraphs -- Shuguang Hu (University of Hong Kong); Xiaowei Wu (University of Hong Kong); T-H. Hubert Chan (University of Hong Kong)
 804 -- Coupled Sparse Matrix Factorization for Response Time Prediction in Logistics Services -- Yuqi Wang (Hong Kong Polytechnic University); Jiannong Cao (Hong Kong Polytechnic University); Lifang He (Shenzhen University); Wengen Li (Hong Kong Polytechnic University); Lichao Sun (University of Illinois at Chicago); Philip S. Yu (University of Illinois at Chicago)
 743 -- Tensor Rank Estimation and Completion via CP-based Nuclear Norm -- Qiquan Shi (Hong Kong Baptist University); Haiping Lu (University of Sheffield); Yiu-ming Cheung (Hong Kong Baptist University)
 215 -- Smart Infrastructure Maintenance Using Incremental Tensor Analysis -- Nguyen Lu Dang Khoa (Data61 | CSIRO); Ali Anaissi (Data61 | CSIRO); Yang Wang (Data61 | CSIRO)

Session 5B: Application Driven Mining | Pacific 2

Chair: Shane Culpepper

1629 -- Collaborative Filtering as a Case-Study for Model Parallelism on Bulk Synchronous Systems -- Ariyam Das (University of California, Los Angeles); Ishan Upadhyaya (University of California, Los Angeles); Xiangrui Meng (Databricks); Ameet Talwalkar (University of California, Los Angeles)
 993 -- Modeling Student Learning Styles in MOOCs -- Yuling Shi (Wuhan University); Zhiyong Peng (Wuhan University); Hongning Wang (University of Virginia)
 495 -- Tracking Knowledge Proficiency of Students with Educational Priors -- Yuying Chen (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); Le Wu (Hefei University of Technology); Enhong Chen (University of Science and Technology of China); Runze Wu (University of Science and Technology of China); Yu Su (Anhui University); Guoping Hu (iFLYTEK Research)
 103 -- Spreadsheet Property Detection With Rule-assisted Active Learning -- Zhe Chen (Two Sigma Investments LP); Sasha Dadiomov (Microsoft Corporation); Richard Wesley (Tableau Software); Gang Xiao (Tableau Software); Daniel Cory (Tableau Software); Michael Cafarella (University of Michigan); Jock Mackinlay (Tableau Software)

Session 5C: Deep Learning 1 | Ocean 3 & 4

Chair: Wei Wang

609 -- Learning Knowledge Embeddings by Combining Limit-based Scoring Loss -- Xiaofei Zhou (Institute of Information Engineering, CAS & University of Chinese Academy of Sciences); Qiannan Zhu (Institute of Information Engineering, CAS & University of Chinese Academy of Sciences); Ping Liu (Institute of Information Engineering, CAS & University of Chinese Academy of Sciences); Li Guo (Institute of Information Engineering, CAS & University of Chinese Academy of Sciences)
 767 -- Length Adaptive Recurrent Model for Text Classification -- Zhengjie Huang (Sun Yat-sen University); Zi Ye (Sun Yat-sen University); Shuangyin Li (iPIN); Rong Pan (Sun Yat-sen University)
 566 -- Multi-Task Neural Network for Non-discrete Attribute Prediction in Knowledge Graphs -- Yi Tay (Nanyang Technological University); Luu Anh Tuan (Institute for Infocomm Research); Minh C Phan (Nanyang Technological University); Siu Cheung Hui (Nanyang Technological University)
 403 -- Movie Fill in the Blank with Adaptive Temporal Attention and Description Update -- Jie Chen (University of Electronic Science and Technology of China); Jie Shao (University of Electronic Science and Technology of China); Fumin Shen (University of Electronic Science and Technology of China); Chengkun He (University of Electronic Science and Technology of China); Lianli Gao (University of Electronic Science and Technology of China); Heng Tao Shen (University of Electronic Science and Technology of China)

8 NOVEMBER (WEDNESDAY) | 4.15PM – 5.45PM (PM 2)

Session 6A: Crowdsourcing 2 | Ocean 3

Chair: Mark Sanderson

1872 -- Crowdsourcing Cybersecurity: Cyber Attack Detection using Social Media -- Rupinder Paul Khandpur (Virginia Tech); Taoran Ji (Virginia Tech); Steve Jan (Virginia Tech); Gang Wang (Virginia Tech); Chang-Tien Lu (Virginia Tech); Naren Ramakrishnan (Virginia Tech)
 1534 -- Budgeted Task Scheduling for Crowdsourced Knowledge Acquisition -- Tao Han (Beihang University); Hailong Sun (Beihang University); Yangqiu Song (Hong Kong University of Science and Technology); Zizhe Wang (Beihang University); Xudong Liu (Beihang University)
 1181 -- Hyper Questions: Unsupervised Targeting of a Few Experts in Crowdsourcing -- Jiyi Li (Kyoto University); Yukino Baba (Kyoto University); Hisashi Kashima (Kyoto University & RIKEN Center for AIP)
 927 -- Modeling Menu Bundle Designs of Crowdfunding Projects -- Yusan Lin (Pennsylvania State University); Peifeng Yin (IBM Almaden Research); Wang-Chien Lee (Pennsylvania State University)

Session 6B: User Behavior and Targeting | Ocean 4

Chair: Ahmed Hassan Awadallah

1738 -- Forecasting Ad-Impressions on Online Retail Websites using Non-homogeneous Hawkes Processes -- Krunal Parmar (Indian Institute of Technology); Samuel Bushi (Indian Institute of Technology); Sourangshu Bhattacharya (Indian Institute of Technology); Surender Kumar (Flipkart)

407 -- Volume Ranking and Sequential Selection in Programmatic Display Advertising -- Yuxuan Song (Shanghai Jiao Tong University); Kan Ren (Shanghai Jiao Tong University); Han Cai (Shanghai Jiao Tong University); Weinan Zhang (Shanghai Jiao Tong University); Yong Yu (Shanghai Jiao Tong University)

116 -- On Migratory Behavior in Video Consumption -- Huan Yan (Tsinghua University); Tzu-Heng Lin (Tsinghua University); Gang Wang (Virginia Tech); Yong Li (Tsinghua University); Haitao Zheng (University of Chicago); Depeng Jin (Tsinghua University); Ben Y. Zhao (University of Chicago)

115 -- FM-Hawkes: A Hawkes Process Based Approach for Modeling Online Activity Correlations -- Sha Li (Shanghai Jiao Tong University); Xiaofeng Gao (Shanghai Jiao Tong University); Weiming Bao (Shanghai Jiao Tong University); Guihai Chen (Shanghai Jiao Tong University)

Session 6C: Deep Learning 2 | Ocean 5

Chair: IL-Chul Moon

1994 -- Deep Learning Based Forecasting of Critical Infrastructure Data -- Zahra Zohrevand (Simon Fraser University); Uwe Glässer (Simon Fraser University); Mohammad A. Tayebi (Simon Fraser University); Hamed Yaghoubi Shahir (Simon Fraser University); Mehdi Shirmaleki (Simon Fraser University); Amir Yaghoubi Shahir (Simon Fraser University)

1190 -- Augmented Variational Autoencoders for Collaborative Filtering with Auxiliary Information -- Wonsung Lee (Korea Advanced Institute of Science and Technology); Kyungwoo Song (Korea Advanced Institute of Science and Technology); Il-Chul Moon (Korea Advanced Institute of Science and Technology)

1195 -- DeepHawkes: Bridging the Gap between Prediction and Understanding of Information Cascades -- Qi Cao (Institute of Computing Technology, Chinese Academy of Sciences); Huawei Shen (Institute of Computing Technology, Chinese Academy of Sciences); Keting Cen (Institute of Computing Technology, Chinese Academy of Sciences); Wentao Ouyang (Institute of Computing Technology, Chinese Academy of Sciences); Xueqi Cheng (Institute of Computing Technology, Chinese Academy of Sciences)

953 -- CNN-IETS: A CNN-based Probabilistic Approach for Information Extraction by Text Segmentation -- Meng Hu (Soochow University); Zhixu Li (Soochow University); Yongxin Shen (Soochow University); An Liu (Soochow University); Guanfeng Liu (Soochow University); Kai Zheng (University of Electronic Science and Technology of China); Lei Zhao (Soochow University)

9 NOVEMBER (THURSDAY) | 10.45 AM – 12.15PM (AM 2)**Session 7A: Health Analytics 1 | Pacific 1**

Chair: Zeyi Wen

1119 -- A Personalized Predictive Framework for Multivariate Clinical Time Series via Adaptive Model Selection -- Zitao Liu (Pinterest); Milos Hauskrecht (University of Pittsburgh)

458 -- DiagTree: Diagnostic Tree for Differential Diagnosis -- Yejin Kim (POSTECH); Jingyun Choi (POSTECH); Yosep Chong (St. Mary Hospital); Xiaoqian Jiang (University of California, San Diego); Hwanjo Yu (POSTECH)

1854 -- Fine-grained Patient Similarity Measuring using Deep Metric Learning -- Jiazhi Ni (Institute of Software, Chinese Academy of Sciences & University of Chinese Academy of Sciences); Jie Liu (Institute of Software, Chinese Academy of Sciences); Chenxin Zhang (Institute of Software, Chinese Academy of Sciences & University of Chinese Academy of Sciences); Dan Ye (Institute of Software, Chinese Academy of Sciences); Zhirou Ma (Institute of Software, Chinese Academy of Sciences)

494 -- Differentially Private Regression for Discrete-Time Survival Analysis -- Thông T. Nguyễn (Nanyang Technological University); Siu Cheung Hui (Nanyang Technological University)

Session 7B: Privacy Preserving Data Mining | Ocean 1

Chair: Zhenjie Zhang

1500 -- From Fingerprint to Footprint: Revealing Physical World Privacy Leakage by Cyberspace Cookie Logs -- Huandong Wang (Tsinghua University); Chen Gao (Tsinghua University); Yong Li (Tsinghua University); Zhi-Li Zhang (University of Minnesota); Depeng Jin (Tsinghua University)

1419 -- Privacy-Preserving Collaborative Deep Learning with Application to Human Activity Recognition -- Lingjuan Lyu (University of Melbourne); Xuanli He (University of Melbourne); Yee Wei Law (University of South Australia); Marimuthu Palaniswami (University of Melbourne)

1178 -- Privacy Aware Temporal Profiling of Emails in Distributed Setup -- Sutapa Mondal (TCS Research); Manish Shukla (TCS Research); Sachin Lodha (TCS Research)

14 -- Name Disambiguation in Anonymized Graphs using Network Embedding -- Baichuan Zhang (Purdue University); Mohammad Al Hasan (Indiana University Purdue University Indianapolis)

Session 7C: Social Networks 1 | Pacific 2

Chair: Joyce Jiyong Whang

1821 -- Weakly-Guided User Stance Prediction via Joint Modeling of Content and Social Interaction -- Rui Dong (Northeastern University); Yizhou Sun (University of California, Los Angeles); Lu Wang (Northeastern University); Yupeng Gu (University of California, Los Angeles); Yuan Zhong (Northeastern University)
 862 -- Social Media for Opioid Addiction Epidemiology: Automatic Detection of Opioid Addicts from Twitter and Case Studies -- Yujie Fan (West Virginia University); Yiming Zhang (West Virginia University); Yanfang Ye (West Virginia University); Xin Li (West Virginia University); Wanhong Zheng (West Virginia University)
 1800 -- Understanding and Predicting Weight Loss with Mobile Social Networking Data -- Zhiwei Wang (Michigan State University); Tyler Derr (Michigan State University); Dawei Yin (JD.com); Jiliang Tang (Michigan State University)
 245 -- Tweet Geolocation: Leveraging Location, User and Peer Signals -- Wen-Haw Chong (Singapore Management University); Ee-Peng Lim (Singapore Management University)

Session 7D: Application driven analysis | Pacific 3

Chair: Charles Nicholas

621 -- A Two-step Information Accumulation Strategy for Learning from Highly Imbalanced Data -- Bin Liu (Tsinghua University); Min Zhang (Tsinghua University); Weizhi Ma (Tsinghua University); Xin Li (Tsinghua University); Yiqun Liu (Tsinghua University); Shaoping Ma (Tsinghua University)
 895 -- Understanding Database Performance Inefficiencies in Real-world Web Applications -- Cong Yan (University of Washington); Alvin Cheung (University of Washington); Junwen Yang (University of Chicago); Shan Lu (University of Chicago)
 1169 -- Data Driven Chiller Plant Energy Optimization with Domain Knowledge -- Hoang Dung Vu (Kaer Pte. Ltd.); Kok Soon Chai (Kaer Pte. Ltd.); Bryan Keating (University of Illinois at Urbana-Champaign & Advanced Digital Sciences Center); Nurislam Tursynbek (Nazarbayev University & Advanced Digital Sciences Center); Boyan Xu (Guangdong University of Technology & Advanced Digital Sciences Center); Kaige Yang (University College London & Advanced Digital Sciences Center); Xiaoyan Yang (Advanced Digital Sciences Center); Zhenjie Zhang (Advanced Digital Sciences Center)
 220 -- Partitioning Orders in Online Shopping Services -- Sreenivas Gollapudi (Google); Ravi Kumar (Google); Debmalya Panigrahy (Duke University); Rina Panigrahy (Google)

Session 7E: Text Mining | Ocean 2

Chair: Rada Mihalcea

2150 -- Taxonomy Induction Using Hypernym Subsequences -- Amit Gupta (Ecole Polytechnique Fédérale de Lausanne); Rémi Philippe Lebre (Ecole Polytechnique Fédérale de Lausanne); Hamza Harkous (Ecole Polytechnique Fédérale de Lausanne); Karl Aberer (Ecole Polytechnique Fédérale de Lausanne)
 1860 -- Unsupervised Concept Categorization and Extraction from Scientific Document Titles -- Adit Krishnan (University of Illinois at Urbana-Champaign); Aravind Sankar (University of Illinois at Urbana-Champaign); Shi Zhi (University of Illinois at Urbana-Champaign); Jiawei Han (University of Illinois at Urbana-Champaign)
 909 -- MIKE: Keyphrase Extraction by Integrating Multidimensional Information -- Yuxiang Zhang (Civil Aviation University of China); Yaocheng Chang (Civil Aviation University of China); Xiaoqing Liu (Civil Aviation University of China); Sujatha Das Gollapalli (A*STAR); Xiaoli Li (A*STAR); Chunjing Xiao (Civil Aviation University of China)
 535 -- QALink: Enriching Text Documents with Relevant Q&A Site Contents -- Yixuan Tang (National University of Singapore); Weilong Huang (National University of Singapore); Qi Liu (National University of Singapore); Anthony K.H. Tung (National University of Singapore); Xiaoli Wang (Xiamen University); Jisong Yang (National University of Singapore); Beibei Zhang (Hong Kong Polytechnic University & National University of Singapore)

Session 7F: Efficient Learning | Ocean 3

Chair: Matthias Petri

853 -- Sequence Modeling with Hierarchical Deep Generative Models with Dual Memory -- Yanan Zheng (Tsinghua University); Lijie Wen (Tsinghua University); Jianmin Wang (Tsinghua University); Jun Yan (Microsoft Research Asia); Lei Ji (Microsoft Research Asia)
 822 -- Active Learning for Large-Scale Entity Resolution -- Kun Qian (IBM Research - Almaden); Lucian Popa (IBM Research - Almaden); Prithviraj Sen (IBM Research - Almaden)
 304 -- Indexable Bayesian Personalized Ranking for Efficient Top-k Recommendation -- Dung D. Le (Singapore Management University); Hady W. Lauw (Singapore Management University)
 1868 -- Latency Reduction via Decision Tree Based Query Construction -- Aman Grover (Linkedin Corporation); Dhruv Arya (Linkedin); Ganesh Venkataraman (Airbnb)

Session 7G: Recommendation 2 | Ocean 4

Chair: Chuan Shi

1237 -- Broad Learning based Multi-Source Collaborative Recommendation -- Junxing Zhu (National University of Defense Technology); Jiawei Zhang (Florida State University); Lifang He (Shenzhen University); Quanyuan Wu (National University of Defense Technology); Bin Zhou (National University of Defense Technology); Chenwei Zhang (University of Illinois at Chicago); Philip S. Yu (University of Illinois at Chicago & Tsinghua University)

476 -- Neural Attentive Session-based Recommendation -- Jing Li (Shandong University); Pengjie Ren (Shandong University); Zhumin Chen (Shandong University); Zhaochun Ren (JD.com); Tao Lian (Shandong University); Jun Ma (Shandong University)
 2085 -- A Deep Recurrent Collaborative Filtering Framework for Venue Recommendation -- Jarana Manotumruksa (University of Glasgow); Craig Macdonald (University of Glasgow); Iadh Ounis (University of Glasgow)
 2026 -- Recommendation with Capacity Constraints -- Konstantina Christakopoulou (University of Minnesota); Jaya Kawale (Netflix); Arindam Banerjee (University of Minnesota)

9 NOVEMBER (THURSDAY) | 1.45PM – 3.15PM (PM 1)

Session 8A: Recommendation 3 | Ocean 1

Chair: Hady W. Lauw

161 -- Joint Representation Learning for Top-N Recommendation with Heterogeneous Information Sources -- Yongfeng Zhang (University of Massachusetts Amherst); Qingyao Ai (University of Massachusetts Amherst); Xu Chen (Tsinghua University); W. Bruce Croft (University of Massachusetts Amherst)
 1569 -- Interacting Attention-gated Recurrent Networks for Recommendation -- Wenjie Pei (Delft University of Technology); Jie Yang (Delft University of Technology); Zhu Sun (Nanyang Technological University); Jie Zhang (Nanyang Technological University); Alessandro Bozzon (Delft University of Technology); David M.J. Tax (Delft University of Technology)
 1366 -- A Personalised Ranking Framework with Multiple Sampling Criteria for Venue Recommendation -- Jarana Manotumruksa (University of Glasgow); Craig Macdonald (University of Glasgow); Iadh Ounis (University of Glasgow)
 625 -- BayDNN: Friend Recommendation with Bayesian Personalized Ranking Deep Neural Network -- Daizong Ding (Fudan University); Mi Zhang (Fudan University); Shao-Yuan Li (Nanjing University); Jie Tang (Tsinghua University); Xiaotie Chen (Fudan University); Zhi-Hua Zhou (Nanjing University)

Session 8B: Text Analysis | Ocean 2

Chair: Chenliang Li

660 -- A Topic Model Based on Poisson Decomposition -- Haixin Jiang (University of Chinese Academy of Sciences & Fudan University); Rui Zhou (Swinburne University of Technology); Limeng Zhang (University of Chinese Academy of Sciences & Fudan University); Hua Wang (Victoria University); Yanchun Zhang (Victoria University & Fudan University)
 1359 -- A Matrix-Vector Recurrent Unit Model for Capturing Compositional Semantics in Phrase Embeddings -- Rui Wang (University of Western Australia); Wei Liu (University of Western Australia); Chris McDonald (University of Western Australia)
 74 -- Words are Malleable: Computing Semantic Shifts in Political and Media Discourse -- Hosein Azarbyonad (University of Amsterdam); Mostafa Dehghani (University of Amsterdam); Kaspar Beelen (University of Amsterdam); Alexandra Arkut (University of Amsterdam); Maarten Marx (University of Amsterdam); Jaap Kamps (University of Amsterdam)
 1417 -- A Neural Candidate-Selector Architecture for Automatic Structured Clinical Text Annotation -- Gaurav Singh (University College London); Iain J. Marshall (Kings College London); James Thomas (University College London); John Shawe-Taylor (University College London); Byron C. Wallace (Northeastern University)

Session 8C: Adversarial IR | Pacific 1

Chair: Rajiv Ratn Shah

2143 -- Sybil Defense in Crowdsourcing Platforms -- Dong Yuan (Tsinghua University); Guoliang Li (Tsinghua University); Qi Li (Tsinghua University); Yudian Zheng (University of Hong Kong)
 1742 -- HoloScope: Topology-and-Spike Aware Fraud Detection -- Shenghua Liu (Institute of Computing Technology, Chinese Academy of Sciences & Carnegie Mellon University); Bryan Hooi (Carnegie Mellon University); Christos Faloutsos (Carnegie Mellon University)
 849 -- Building a Dossier on the Cheap: Integrating Distributed Personal Data Resources Under Cost Constraints -- Imrul Chowdhury Anindya (University of Texas at Dallas); Harichandan Roy (University of Texas at Dallas); Murat Kantarcioglu (University of Texas at Dallas); Bradley Malin (Vanderbilt University)
 127 -- DeMaLC: A Feature-rich Machine Learning Framework for Malicious Call Detection -- Yuhong Li (Alibaba Group); Dongmei Hou (Alibaba Group); Aimin Pan (Alibaba Group); Zhiguo Gong (University of Macau)

Session 8D: Health Analytics 2/ Top-k | Ocean 3

Chair: Aek Palakorn Achananuparp

605 -- FA*IR: A Fair Top-k Ranking Algorithm -- Meike Zehlike (Technische Universität Berlin); Francesco Bonchi (ISI Foundation); Carlos Castillo (Universitat Pompeu Fabra); Sara Hajian (NTENT); Mohamed Megahed (Technische Universität Berlin); Ricardo Baeza-Yates (Universitat Pompeu Fabra)
 707 -- Capturing Feature-Level Irregularity in Disease Progression Modeling -- Kaiping Zheng (National University of Singapore); Wei Wang (National University of Singapore); Jinyang Gao (National University of Singapore); Kee Yuan Ngiam (National University Health System); Beng Chin Ooi (National University of Singapore); Wei Luen James Yip (National University Health System)
 764 -- Health Forum Thread Recommendation Using an Interest Aware Topic Model -- Kishaloy Halder (National University of Singapore); Min-Yen Kan (National University of Singapore); Kazunari Sugiyama (National University of Singapore)

1371 -- Exploiting Electronic Health Records to Mine Drug Effects on Laboratory Test Results -- Mohamed Ghalwash (IBM T. J. Watson Research Center); Ying Li (IBM T. J. Watson Research Center); Ping Zhang (IBM T. J. Watson Research Center); Jianying Hu (IBM T. J. Watson Research Center)

Session 8E: Social Networks 2 | Pacific 2

Chair: Ilya Markov

1950 -- HotSpots: Failure Cascades on Heterogeneous Critical Infrastructure Networks -- Liangzhe Chen (Virginia Tech); Xinfeng Xu (Virginia Tech); Sangkeun Lee (Oak Ridge National Lab); Sisi Duan (Oak Ridge National Lab); Alfonso G. Tarditi (Oak Ridge National Lab); Supriya Chinthavali (Oak Ridge National Lab); B. Aditya Prakash (Virginia Tech)
 1618 -- SOPER: Discovering the Influence of Fashion and the Many Faces of User from Session Logs using Stick Breaking Process -- Lucky Dhakad (Flipkart); Mrinal Das (Indian Institute of Technology & University of Massachusetts Amherst); Chiranjib Bhattacharyya (Indian Institute of Science); Samik Datta (Flipkart Internet); Mihir Kale (Flipkart Internet); Vivek Mehta (Flipkart Internet)
 1114 -- Semi-Supervised Event-related Tweet Identification with Dynamic Keyword Generation -- Xin Zheng (Nanyang Technological University & SAP Innovation Center Network Singapore); Aixin Sun (Nanyang Technological University); Sibowang Wang (University of Queensland); Jialong Han (Tencent AI Lab)
 1948 -- Distant Meta-Path Similarities for Text-Based Heterogeneous Information Networks -- Chenguang Wang (IBM Research-Almaden); Yangqiu Song (Hong Kong University of Science and Technology); Haoran Li (Peking University); Yizhou Sun (University of California, Los Angeles); Ming Zhang (Peking University); Jiawei Han (University of Illinois at Urbana-Champaign)

Session 8F: Feature/Entity Selection | Pacific 3

Chair: Guansong Pang

1514 -- Unsupervised Feature Selection with Joint Clustering Analysis -- Shuai An (Nankai University); Jun Wang (Nankai University); Jinmao Wei (Nankai University); Zhenglu Yang (Nankai University)
 1025 -- Multi-Label Feature Selection using Correlation Information -- Ali Braytee (University of Technology Sydney); Wei Liu (University of Technology Sydney); Daniel R. Catchpole (Children's Hospital at Westmead); Paul J. Kennedy (University of Technology Sydney)
 716 -- Content Recommendation by Noise Contrastive Transfer Learning of Feature Representation -- Yiyang Li (Shanghai Jiao Tong University); Guanyu Tao (ULU Technologies Inc.); Weinan Zhang (Shanghai Jiao Tong University); Yong Yu (Shanghai Jiao Tong University); Jun Wang (University College London)
 961 -- NeuPL: Attention-based Semantic Matching and Pair-Linking for Entity Disambiguation -- Minh C. Phan (Nanyang Technological University); Aixin Sun (Nanyang Technological University); Yi Tay (Nanyang Technological University); Jialong Han (Nanyang Technological University); Chenliang Li (Wuhan University)

Session 8G: Graph Mining 2 | Ocean 4

Chair: Miao Zhao

1433 -- Relaxing Graph Pattern Matching With Explanations -- Jia Li (Beihang University); Yang Cao (University of Edinburgh & Beihang University); Shuai Ma (Beihang University); Jinpeng Huai (Beihang University)
 1344 -- Active Network Alignment: A Matching-Based Approach -- Eric Malmi (Aalto University); Aristides Gionis (Aalto University); Evimaria Terzi (Boston University)
 1710 -- Discovering Graph Temporal Association Rules -- Mohammad Hossein Namaki (Washington State University); Yinghui Wu (Washington State University & Pacific Northwest National Laboratory); Qi Song (Washington State University); Peng Lin (Washington State University); Tingjian Ge (University of Massachusetts)
 1688 -- Minimizing Tension in Teams -- Behzad Golshan (Recruit Institute of Technology & Boston University); Evimaria Terzi (Boston University)

9 NOVEMBER (THURSDAY) | 3.45PM – 5.15PM (PM 2)

Session 9A: Queries | Ocean 4

Chair: Ruey-Cheng Chen

1173 -- Interactive Spatial Keyword Querying with Semantics -- Jiabao Sun (Soochow University); Jiajie Xu (Soochow University); Kai Zheng (University of Electronic Science and Technology of China); Chengfei Liu (Swinburne University of Technology)
 2024 -- From Query-By-Keyword to Query-By-Example: LinkedIn Talent Search Approach -- Viet Ha-Thuc (LinkedIn, Inc); Yan Yan (LinkedIn, Inc); Xianren Wu (LinkedIn, Inc); Vijay Dialani (LinkedIn, Inc); Abhishek Gupta (LinkedIn, Inc); Shakti Sinha (LinkedIn, Inc)
 1676 -- Learning to Attend, Copy, and Generate for Session-Based Query Suggestion -- Mostafa Dehghani (University of Amsterdam); Sascha Rothe (Google Research); Enrique Alfonseca (Google Research); Pascal Fleury (Google Research)
 835 -- Deep Context Modeling for Web Query Entity Disambiguation -- Zhen Liao (Facebook); Xinying Song (Microsoft Research); Yelong Shen (Microsoft Research); Saekoo Lee (Google); Jianfeng Gao (Microsoft Research); Ciya Liao (Microsoft Research)

Session 9B: Representation Learning | Ocean 1

Chair: Yu Su

1823 -- An Attention-based Collaboration Framework for Multi-View Network Representation Learning -- Meng Qu (University of Illinois at Urbana-Champaign); Jian Tang (HEC Montreal & Montreal Institute of Learning Algorithms); Jingbo Shang (University of Illinois at Urbana-Champaign); Xiang Ren (University of Illinois at Urbana-Champaign); Ming Zhang (Peking University); Jiawei Han (University of Illinois at Urbana-Champaign)

943 -- Representation Learning of Large-Scale Knowledge Graphs via Entity Feature Combinations -- Zhen Tan (National University of Defense Technology); Xiang Zhao (National University of Defense Technology); Wei Wang (University of New South Wales); Chong Zhang (National University of Defense Technology)

929 -- Learning Edge Representations via Low-Rank Asymmetric Projections -- Sami Abu-El-Haija (Google Research); Bryan Perozzi (Google Research); Rami Al-Rfou (Google Research)

881 -- HIN2Vec: Explore Meta-paths in Heterogeneous Information Networks for Representation Learning -- Tao-yang Fu (Pennsylvania State University); Wang-Chien Lee (Pennsylvania State University); Zhen Lei (Pennsylvania State University)

Session 9C: Graph Mining 3 | Ocean 2

Chair: Arijit Khan

1436 -- Core Decomposition and Densest Subgraph in Multilayer Networks -- Edoardo Galimberti (ISI Foundation & University of Turin); Francesco Bonchi (ISI Foundation); Francesco Gullo (UniCredit)

1070 -- Fully Dynamic Algorithm for Top-K Densest Subgraphs -- Muhammad Anis Uddin Nasir (Royal Institute of Technology); Aristides Gionis (Aalto University); Gianmarco De Francisci Morales (Qatar Computing Research Institute); Sarunas Girdzius (Royal Institute of Technology)

514 -- Minimizing Dependence between Graphs -- Yu Rong (Chinese University of Hong Kong & Tencent AI Lab); Hong Cheng (Chinese University of Hong Kong)

Session 9D: Relational Mining | Ocean 3

Chair: Vincent Zheng

78 -- Efficient Discovery of Ontology Functional Dependencies -- Sridevi Baskaran (McMaster University); Alexander Keller (University of Ontario Institute of Technology); Fei Chiang (McMaster University); Lukasz Golab (University of Waterloo); Jaroslaw Szlichta (University of Ontario Institute of Technology)

196 -- Automatic Navbox Generation by Interpretable Clustering over Linked Entities -- Chenhao Xie (Fudan University & Shuyan Technology); Lihan Chen (Fudan University); Jiaqing Liang (Fudan University & Shuyan Technology); Kezun Zhang (Fudan University); Yanghua Xiao (Fudan University & Shuyan Technology); Hanghang Tong (Arizona State University); Haixun Wang (Facebook); Wei Wang (Fudan University)

153 -- A Two-Stage Framework for Computing Entity Relatedness in Wikipedia -- Marco Ponza (University of Pisa); Paolo Ferragina (University of Pisa); Soumen Chakrabarti (IIT Bombay)

89 -- Incorporating the Latent Link Categories in Relational Topic Modeling -- Yuan He (Tongji University); Cheng Wang (Tongji University); Changjun Jiang (Tongji University)

Session 9E: User Characteristics | Pacific 1

Chair: Latifur Khan

1843 -- Tone Analyzer for Online Customer Service: An Unsupervised Model with Interfered Training -- Peifeng Yin (IBM Almaden Research Center); Zhe Liu (IBM Almaden Research Center); Anbang Xu (IBM Almaden Research Center); Taiga Nakamura (IBM Almaden Research Center)

1643 -- Nationality Classification Using Name Embeddings -- Junting Ye (Stony Brook University); Shuchu Han (NEC Labs America); Yifan Hu (Yahoo! Research); Baris Coskun (Amazon AI); Meizhu Liu (Yahoo! Research); Hong Qin (Stony Brook University); Steven Skiena (Stony Brook University)

515 -- Emotions in Social Networks: Distributions, Patterns, and Models -- Shengmin Jin (Syracuse University); Reza Zafarani (Syracuse University)

302 -- Hike: A Hybrid Human-Machine Method for Entity Alignment in Large-Scale Knowledge Bases -- Yan Zhuang (Tsinghua University); Guoliang Li (Tsinghua University); Zhuojian Zhong (Tsinghua University); Jianhua Feng (Tsinghua University)

Session 9F: Engagement | Pacific 2

Chair: Rishabh Mehrotra

1885 -- Returning is Believing: Optimizing Long-term User Engagement in Recommender Systems -- Qingyun Wu (University of Virginia); Hongning Wang (University of Virginia); Liangjie Hong (Etsy Inc.); Yue Shi (Yahoo Research)

281 -- Predicting Startup Crowdfunding Success through Longitudinal Social Engagement Analysis -- Qizhen Zhang (University of Pennsylvania); Tengyuan Ye (University of Pennsylvania); Meryem Essaidi (University of Pennsylvania); Shivani Agarwal (University of Pennsylvania); Vincent Liu (University of Pennsylvania); Boon Thau Loo (University of Pennsylvania)

191 -- Optimizing Email Volume For Sitewide Engagement -- Rupesh Gupta (LinkedIn Corporation); Guanfeng Liang (Facebook, Inc.); Romer Rosales (LinkedIn Corporation)

1267 -- Understanding Engagement through Search Behaviour -- Mengdie Zhuang (University of Sheffield); Gianluca Demartini (University of Queensland & University of Sheffield); Elaine G. Toms (University of Sheffield)

Demonstrations

8 NOVEMBER (WEDNESDAY) | 12.50PM – 4.45PM | PACIFIC 3

209 -- An Interactive Framework for Video Surveillance Event Detection and Modeling - Fabio Persia (Free University of Bozen-Bolzano); Fabio Bettini (Free University of Bozen-Bolzano); Sven Helmer (Free University of Bozen-Bolzano)

231 -- StreamingCube: A Unified Framework for Stream Processing and OLAP Analysis - Salman Ahmed Shaikh (University of Tsukuba); Hiroyuki Kitagawa (University of Tsukuba)

249 -- Interactive System for Reasoning about Document Age - Adam Jatowt (Kyoto University); Ricardo Campos (Polytechnic Institute of Tomar, Tomar, Portugal)

274 -- HyPerInsight: Data Exploration Deep Inside HyPer - Nina Hubig (Technical University of Munich); Linnea Passing (Technical University of Munich); Maximilian E. Schüle (Technical University of Munich); Dimitri Vorona (Technical University of Munich); Alfons Kemper (Technical University of Munich); Thomas Neumann (Technical University of Munich)

299 -- POOLSIDE: An Online Probabilistic Knowledge Base for Shopping Decision Support - Ping Zhong (Northwestern Polytechnical University); Zhanhuai Li (Northwestern Polytechnical University); Qun Chen (Northwestern Polytechnical University); Yanyan Wang (Northwestern Polytechnical University); Lianping Wang (Northwestern Polytechnical University); Murtadha HM Ahmed (Northwestern Polytechnical University); Fengfeng Fan (Northwestern Polytechnical University)

395 -- AliMe Assist: An Intelligent Assistant for Creating an Innovative E-commerce Experience - Feng-Lin Li (Alibaba Group); Minghui Qiu (Alibaba Group); Haiqing Chen (Alibaba Group); Xiongwei Wang (Alibaba Group); Xing Gao (Alibaba Group); Jun Huang (Alibaba Group); Juwei Ren (Alibaba Group); Zhongzhou Zhao (Alibaba Group); Weipeng Zhao (Alibaba Group); Lei Wang (Alibaba Group); Guwei Jin (Alibaba Group); Wei Chu (Alibaba Group)

432 -- Rapid Analysis of Network Connectivity - Scott Freitas (Arizona State University); Hanghang Tong (Arizona State University); Nan Cao (Tongji University); Yinglong Xia (Huawei)

452 -- CoreDB: a Data Lake Service - Amin Beheshti (University of New South Wales); Boualem Benatallah (University of New South Wales); Reza Nouri (University of New South Wales); Van Munin Chhieng (University of New South Wales); HuangTao Xiong (University of New South Wales); Xu Zhao (University of New South Wales)

505 -- Blockchain-based Data Management and Analytics for Micro-insurance Applications - Hoang Tam Vo (IBM Research Australia); Lenin Mehedy (IBM Research Australia); Mukesh Mohania (IBM Research Australia); Ermyas Abebe (IBM Research Australia)

600 -- Public Transportation Mode Detection from Cellular Data - Guanyao Li (National Chiao Tung University); Chun-jie Chen (National Chiao Tung University); Sheng-Yun Huang (National Chiao Tung University); Ai-Jou Chou (National Chiao Tung University); Xiaochuan Gou (National Chiao Tung University); Wen-Chih Peng (National Chiao Tung University); Chih-Wei Yi (National Chiao Tung University)

785 -- SimMeme: Semantic-Based Meme Search - Maya Ekron (Tel Aviv University); Tova Milo (Tel Aviv University); Brit Youngmann (Tel Aviv University)

840 -- Product Exploration based on Latent Visual Attributes - Tomas Kopal (Charles University); Ladislav Peřka (Charles University); Gregory Koval (Charles University); Tomáš Grosup (Charles University); Jakub Lokoc (Charles University)

864 -- PODIUM: Procuring Opinions from Diverse Users in a Multi-Dimensional World - Yael Amsterdamer (Bar-Ilan University); Oded Goldreich (Bar-Ilan University)

897 -- Urbanity: A System for Interactive Exploration of Urban Dynamics from Streaming Human Sensing Data - Mengxiong Liu (University of Illinois at Urbana-Champaign); Zhengchao Liu (University of Illinois at Urbana-Champaign); Chao Zhang (University of Illinois at Urbana-Champaign); Keyang Zhang (University of Illinois at Urbana-Champaign); Quan Yuan (University of Illinois at Urbana-Champaign); Tim Hanratty (U.S. Army Research Lab); Jiawei Han (University of Illinois at Urbana-Champaign)

916 -- Query and Animate Multi-attribute Trajectory Data - Jianqiu Xu (Nanjing University of Aeronautics and Astronautics); Ralf Hartmut Güting (FernUniversität)

1019 -- Exploring the Veracity of Online Claims with BackDrop - Julien Leblay (AIST); Weiling Chen (Nanyang Technical University); Steven Lynden (AIST)

1261 -- Metacrate: Organize and Analyze Millions of Data Profiles - Sebastian Kruse (Hasso Plattner Institute); David Hahn (Hasso Plattner Institute); Marius Walter (Hasso Plattner Institute); Felix Naumann (Hasso Plattner Institute)

1327 -- SemVis: Semantic Visualization for Interactive Topical Analysis - Tuan M. V. Le (Singapore Management University); Hady W. Lauw (Singapore Management University)

1368 -- ClaimVerif: A Real-time Claim Verification System Using the Web and Fact Databases - Shi Zhi (University of Illinois at Urbana-Champaign); Yicheng Sun (University of Illinois at Urbana-Champaign); Jiayi Liu (University of Illinois at Urbana-Champaign); Chao Zhang (University of Illinois at Urbana-Champaign); Jiawei Han (University of Illinois at Urbana-Champaign)

1377 -- Summlt: A Tool for Extractive Summarization, Discovery and Analysis - Guy Feigenblat (IBM Research - Haifa); Odellia Boni (IBM Research - Haifa); Haggai Roitman (IBM Research - Haifa); David Konopnicki (IBM Research - Haifa)

1462 -- IMaxer: A Unified System for Evaluating Influence Maximization in Location-based Social Networks - Muhammad Aamir Saleem (Aalborg University & Universite Libre de Bruxelles); Rohit Kumar (Universite Libre de Bruxelles & Universitat Politècnica de Catalunya); Toon Calders (Universite Libre de Bruxelles & University of Antwerp); Xike Xie (University of Science and Technology of China); Torben Bach Pedersen (Aalborg University)

1468 -- Hierarchical Module Classification in Mixed-initiative Conversational Agent System - Sia Xin Yun Suzanna (National University of Singapore); Li Lianjie Anthony (National University of Singapore)

1707 -- Storyfinder: Personalized Knowledge Base Construction and Management by Browsing the Web - Steffen Remus (Universität Hamburg); Manuel Kaufmann (Technische Universität Darmstadt); Kathrin Ballweg (Technische Universität Darmstadt); Tatiana von Landesberger (Technische Universität Darmstadt); Chris Biemann (Universität Hamburg)

1721 -- CleanCloud: Cleaning Big Data on Cloud - Hongzhi Wang (Harbin Institute of Technology); Xiaoou Ding (Harbin Institute of Technology); Xiangying Chen (Harbin Institute of Technology); Jianzhong Li (Harbin Institute of Technology); Hong Gao (Harbin Institute of Technology)

1729 -- Classy: A Visual Analytics Environment for Supervised Text Classification and Model Evaluation. - Ilias Koutsakis (Elsevier); George Tsatsaronis (Elsevier); Evangelos Kanoulas (University of Amsterdam); Eamonn Maguire (Pictet Asset Management SA)

1893 -- Interactive Analytics System for Exploring Outliers - Mingrui Wei (Worcester Polytechnic Institute); Lei Cao (Massachusetts Institute of Technology); Chris Cormier (Worcester Polytechnic Institute); Hui Zheng (Worcester Polytechnic Institute); Elke A. Rundensteiner (Worcester Polytechnic Institute)

1945 -- VizQ: A System for Scalable Processing of Visibility Queries in 3D Spatial Databases - Arif Arman (Bangladesh University of Engineering and Technology); Mohammed Eunos Ali (Bangladesh University of Engineering and Technology); Farhana Murtaza Choudhury (RMIT University); Kaysar Abdullah (Bangladesh University of Engineering and Technology)

2130 -- SemDia: Semantic Rule-Based Equipment Diagnostics Tool - Gulnar Mehdi (Siemens Corporate Technology & Technical University of Munich); Evgeny Kharlamov (University of Oxford); Ognjen Savkovic (Free University of Bozen-Bolzano); Guohui Xiao (Free University of Bozen-Bolzano); Elem Güzel Kalayci (Free University of Bozen-Bolzano); Sebastian Brandt (Siemens Corporate Technology); Ian Horrocks (University of Oxford); Mikhail Roshchin (Siemens Corporate Technology); Thomas Runkler (Siemens Corporate Technology)

2141 -- SemFacet: Making Hard Faceted Search Easier - Evgeny Kharlamov (University of Oxford); Luca Giacomelli (Sapienza University of Rome); Evgeny Sherkhonov (University of Oxford); Bernardo Cuenca Grau (University of Oxford); Egor V. Kostylev (University of Oxford); Ian Horrocks (University of Oxford)

2175 -- TaCLe: Learning Constraints in Tabular Data - Sergey Paramonov (KU Leuven); Samuel Kolb (KU Leuven); Tias Guns (Vrije Universiteit Brussel & KU Leuven); Luc De Raedt (KU Leuven)

Poster Session

Classification | Pacific Ballroom

372 -- Cluster-level Emotion Pattern Matching for Cross-Domain Social Emotion Classification -- Endong Zhu (Sun Yat-sen University); Yanghui Rao (Sun Yat-sen University); Haoran Xie (Education University of Hong Kong); Yuwei Liu (Sun Yat-sen University); Jian Yin (Sun Yat-sen University); Fu Lee Wang (Caritas Institute of Higher Education)
587 -- Attentive Graph-based Recursive Neural Network for Collective Vertex Classification -- Qionikai Xu (Australian National University and Data61); Qing Wang (Australian National University); Chenchen Xu (Australian National University and Data61); Lizhen Qu (Australian National University and Data61)
1054 -- Unsupervised Matrix-valued Kernel Learning For One Class Classification -- Shaobo Dang (University of New South Wales); Xiongcai Cai (University of New South Wales & Techcul Research); Yang Wang (CSIRO); Jianjia Zhang (CSIRO); Fang Chen (CSIRO)
1231 -- Graph Ladder Networks for Network Classification -- Ruiqi Hu (University of Technology Sydney); Shirui Pan (University of Technology Sydney); Jing Jiang (University of Technology Sydney); Guodong Long (University of Technology Sydney)
1722 -- MultiSentiNet: A Deep Semantic Network for Multimodal Sentiment Analysis -- Nan Xu (Institute of Automation, Chinese Academy of Sciences & University of Chinese Academy of Sciences); Wenji Mao (Institute of Automation, Chinese Academy of Sciences & University of Chinese Academy of Sciences)

Clustering | Pacific Ballroom

270 -- Boolean Matrix Decomposition by Formal Concept Sampling -- Petr Osicka (Palacký University Olomouc); Martin Trnecka (Palacký University Olomouc)
371 -- An Euclidean Distance based on the Weighted Self-information Related Data Transformation for Nominal Data Clustering -- Lei Gu (Nanjing University of Posts and Telecommunications); Liying Zhang (China University of Petroleum - Beijing); Yang Zhao (Nanjing Forestry University)
526 -- Non-Exhaustive, Overlapping Co-Clustering -- Joyce Jiyong Whang (Sungkyunkwan University); Inderjit S. Dhillon (University of Texas at Austin)
696 -- Fast K-means for Large Scale Clustering -- Qinghao Hu (Institute of Automation, Chinese Academy of Sciences & University of Chinese Academy of Sciences); Jiaxiang Wu (Institute of Automation, Chinese Academy of Sciences & University of Chinese Academy of Sciences); Lu Bai (Central University of Finance and Economics); Yifan Zhang (Institute of Automation, Chinese Academy of Sciences & University of Chinese Academy of Sciences); Jian Cheng (Institute of Automation, Chinese Academy of Sciences & University of Chinese Academy of Sciences)
1166 -- pm-SCAN: an I/O Efficient Structural Clustering Algorithm for Large-scale Graphs -- Jung Hyuk Seo (Korea Advanced Institute of Science and Technology); Myoung Ho Kim (Korea Advanced Institute of Science and Technology)
1476 -- An Empirical Study of Community Overlap: Ground-truth, Algorithmic Solutions, and Implications -- Joyce Jiyong Whang (Sungkyunkwan University)
2114 -- A Way to Boost Semi-NMF for Document Clustering -- Aghiles Salah (LIPADE - Paris Descartes University); Melissa Ailem (LIPADE - Paris Descartes University); Mohamed Nadif (LIPADE - Paris Descartes University)

Cool New Applications 1 | Pacific Ballroom

241 -- Personalized Image Aesthetics Assessment -- Xiang Deng (Shandong University); Chaoran Cui (Shandong University of Finance and Economics); Huidi Fang (Shandong University); Xiushan Nie (Shandong University of Finance and Economics); Yilong Yin (Shandong University)
324 -- Predicting Short-Term Public Transport Demand via Inhomogeneous Poisson Processes -- Aditya Krishna Menon (Data61/CSIRO & Australian National University); Young Lee (Data61/CSIRO & Australian National University)
430 -- How Safe is Your (Taxi) Driver? -- Rade Stanojevic (Qatar Computing Research Institute & Hamad Bin Khalifa University)
576 -- Integrating the Framing of Clinical Questions via PICO into the Retrieval of Medical Literature for Systematic Reviews -- Harrison Scells (Queensland University of Technology); Guido Zuccon (Queensland University of Technology); Bevan Koopman (CSIRO); Anthony Deacon (Queensland University of Technology); Leif Azzopardi (Strathclyde University); Shlomo Geva (Queensland University of Technology)
815 -- Smart City Analytics: Ensemble-Learned Prediction of Citizen Home Care -- Casper Hansen (University of Copenhagen); Christian Hansen (University of Copenhagen); Stephen Alstrup (University of Copenhagen); Christina Lioma (University of Copenhagen)
1023 -- Summarizing Significant Changes in Network Traffic Using Contrast Pattern Mining -- Elaheh Alipour Chavary (University of Melbourne); Sarah M. Erfani (University of Melbourne); Christopher Leckie (University of Melbourne)
1098 -- A Novel Approach for Efficient Computation of Community Aware Ridesharing Groups -- Samiul Anwar (Bangladesh University of Engineering and Technology (BUET)); Shuha Nabila (Bangladesh University of Engineering and Technology (BUET)); Tanzima Hashem (Bangladesh University of Engineering and Technology (BUET))
1570 -- Recipe Popularity Prediction with Deep Visual-Semantic Fusion -- Satoshi Sanjo (Doshisha University); Marie Katsurai (Doshisha University)
1778 -- Inferring Appliance Energy Usage from Smart Meters using Fully Convolutional Encoder Decoder Networks -- Felan Carlo C. Garcia (Ateneo de Manila University); Erees Queen B. Macabebe (Ateneo de Manila University)
2133 -- Semantic Rules for Machine Diagnostics: Execution and Management -- Evgeny Kharlamov (University of Oxford); Ognjen Savkovic (Free University of Bozen-Bolzano); Guohui Xiao (Free University of Bozen-Bolzano); Rafael Penalzoza (Free University of Bozen-Bolzano); Gulnar Mehdi (Siemens AG, Corporate Technology); Mikhail Roshchin (Siemens AG, Corpo-

rate Technology); Ian Horrocks (University of Oxford)

Cool New Applications 2 | Pacific Ballroom

228 -- Learning Biological Sequence Types Using the Literature -- Mohamed Reda Bouadjeneq (The University of Melbourne); Karin Verspoor (The University of Melbourne); Justin Zobel (The University of Melbourne)

451 -- Compact Multiple-Instance Learning -- Jing Chai (University of Technology Sydney & Taiyuan University of Technology); Weiwei Liu (University of New South Wales); Ivor W Tsang (University of Technology Sydney); Xiaobo Shen (Nanyang Technological University)

500 -- Citation Metadata Extraction via Deep Neural Network-based Segment Sequence Labeling -- Dong An (Peking University); Liangcai Gao (Peking University); Zhuoren Jiang (Sun Yat-sen University); Runtao Liu (Peking University); Zhi Tang (Peking University)

747 -- Robust Heterogeneous Discriminative Analysis for Single Sample Per Person Face Recognition -- Meng Pang (Hong Kong Baptist University); Yiu-ming Cheung (Hong Kong Baptist University); Binghui Wang (Iowa State University); Risheng Liu (Dalian University of Technology)

857 -- Language Modeling by Clustering with Word Embeddings for Text Readability Assessment -- Miriam Cha (Harvard University); Youngjune Gwon (Harvard University); H. T. Kung (Harvard University)

Cool New Applications 3 | Pacific Ballroom

1859 -- Denoising Clinical Notes for Medical Literature Retrieval with Convolutional Neural Model -- Luca Soldaini (Georgetown University); Andrew Yates (Max Planck Institute for Informatics); Nazli Goharian (Georgetown University)

Deception & Bias | Pacific Ballroom

130 -- Text Coherence Analysis Based on Deep Neural Network -- Baiyun Cui (Zhejiang University); Yingming Li (Zhejiang University); Yaqing Zhang (Zhejiang University); Zhongfei Zhang (Zhejiang University)

212 -- Detecting Social Bots by Jointly Modeling Deep Behavior and Content Information -- Chiyu Cai (Institute of Automation, Chinese Academy of Sciences); Linjing Li (Institute of Automation, Chinese Academy of Sciences); Daniel Dajun Zeng (Institute of Automation, Chinese Academy of Sciences & University of Arizona)

446 -- Truth Discovery by Claim and Source Embedding -- Shanshan Lyu (Institute of Computing Technology, Chinese Academy of Sciences); Wentao Ouyang (Institute of Computing Technology, Chinese Academy of Sciences); Huawei Shen (Institute of Computing Technology, Chinese Academy of Sciences); Xueqi Cheng (Institute of Computing Technology, Chinese Academy of Sciences)

774 -- Source Retrieval for Web-Scale Text Reuse Detection -- Matthias Hagen (Bauhaus-Universität Weimarr); Martin Potthast (Bauhaus-Universität Weimar); Payam Adineh (Bauhaus-Universität Weimar); Ehsan Fatehifar (Bauhaus-Universität Weimar); Benno Stein (Bauhaus-Universität Weimar)

995 -- Hierarchical RNN with Static Sentence-Level Attention for Text-Based Speaker Change Detection -- Zhao Meng (Peking University); Lili Mou (University of Waterloo); Zhi Jin (Peking University)

1094 -- A Temporal Attentional Model for Rumor Stance Classification -- Amir Pouran Ben Veyseh (University of Oregon); Javid Ebrahimi (University of Oregon); Dejing Dou (University of Oregon); Daniel Lowd (University of Oregon)

1151 -- Tracking the Impact of Fact Deletions on Knowledge Graph Queries using Provenance Polynomials -- Garima Gaur (Indian Institute of Technology); Srikanta J Bedathur (IBM Research); Arnab Bhattacharya (Indian Institute of Technology)

1246 -- Modeling Opinion Influence with User Dual Identity -- Chengyao Chen (Hong Kong Polytechnic University); Zhitao Wang (Hong Kong Polytechnic University); Wenjie Li (Hong Kong Polytechnic University)

1520 -- Conflict of Interest Declaration and Detection System in Heterogeneous Networks -- Siyuan Wu (University of Macau); Leong Hou U (University of Macau); Sourav S Bhowmick (Nanyang Technological University); Wolfgang Gatterbauer (North-eastern University)

1531 -- Algorithmic Bias: Do Good Systems Make Relevant Documents More Retrievable? -- Colin Wilkie (University of Glasgow); Leif Azzopardi (University of Strathclyde)

1608 -- Spectrum-based Deep Neural Networks for Fraud Detection -- Shuhan Yuan (Tongji University); Xintao Wu (University of Arkansas); Jun Li (University of Oregon); Aidong Lu (University of North Carolina at Charlotte)

1752 -- Analyzing Mathematical Content to Detect Academic Plagiarism -- Norman Meuschke (University of Konstanz); Moritz Schubotz (University of Konstanz); Felix Hamborg (University of Konstanz); Tomas Skopal (Charles University in Prague); Bela Gipp (University of Konstanz)

1813 -- Geographic and Temporal Trends in Fake News Consumption During the 2016 US Presidential Election -- Adam Fournery (Microsoft Research); Miklos Z. Racz (Microsoft Research); Gireeja Ranade (Microsoft Research); Markus Mobius (Microsoft Research); Eric Horvitz (Microsoft Research)

1884 -- TATHYA: A Multi-Classifer System for Detecting Check-Worthy Statements in Political Debates -- Ayush Patwari (Google & Purdue University); Dan Goldwasser (Purdue University); Saurabh Bagchi (Purdue University)

Entities & Events | Pacific Ballroom

648 -- Chinese Named Entity Recognition with Character-Word Mixed Embedding -- Shijia E (Tongji University); Yang Xiang (Tongji University)

664 -- J-REED: Joint Relation Extraction and Entity Disambiguation -- Dat Ba Nguyen (Max-Planck Institute for Informatics); Martin Theobald (University of Luxembourg); Gerhard Weikum (Max-Planck Institute for Informatics)

941 -- A Robust Named-Entity Recognition System Using Syllable Bigram Embedding with Eojeol Prefix Information -- Sun-

jae Kwon (Ulsan National Institute of Science and Technology); Youngjoong Ko (Dong-A University); Jungyun Seo (Sogang University)

1209 -- KIEM: A Knowledge Graph based Method to Identify Entity Morphs -- Longtao Huang (Institute of Information Engineering, Chinese Academy of Sciences); Lin Zhao (Institute of Information Engineering, Chinese Academy of Sciences); Shangwen Lv (Institute of Information Engineering, Chinese Academy of Sciences); Fangzhou Lu (Institute of Information Engineering, Chinese Academy of Sciences); Yue Zhai (Beijing Information Science and Technology University); Songlin Hu (Institute of Information Engineering, Chinese Academy of Sciences)

1646 -- Extracting Entities of Interest from Comparative Product Reviews -- Jatin Arora (Indian Institute of Technology Kharagpur); Sumit Agrawal (Indian Institute of Technology Kharagpur); Pawan Goyal (Indian Institute of Technology Kharagpur); Sayan Pathak (Microsoft Research)

1849 -- Revealing the Hidden Links in Content Networks: An Application to Event Discovery -- Antonia Saravanou (University of Athens); Ioannis Katakis (University of Athens); George Valkanas (Detectica); Vana Kalogeraki (Athens University of Economics and Business); Dimitrios Gunopulos (University of Athens)

2145 -- Using Knowledge Graphs to Explain Entity Co-occurrence in Twitter -- Yiwei Wang (Hong Kong University of Science and Technology); Mark James Carman (Monash University); Yuan-Fang Li (Monash University)

Infrastructure | Pacific Ballroom

48 -- QoS-Aware Scheduling of Heterogeneous Servers for Inference in Deep Neural Networks -- Zhou Fang (University of California San Diego); Tong Yu (Carnegie Mellon University); Ole J Mengshoel (Carnegie Mellon University); Rajesh K Gupta (University of California San Diego)

523 -- TICC: Transparent Inter-Column Compression for Column-Oriented Database Systems -- Hao Liu (Hong Kong University of Science and Technology); Yudian Ji (Hong Kong University of Science and Technology); Jiang Xiao (Huazhong University of Science and Technology); Haoyu Tan (Hong Kong University of Science and Technology); Qiong Luo (Hong Kong University of Science and Technology); Lionel M. Ni (University of Macau)

588 -- SIMD-Based Multiple Sets Intersection with Dual-Scale Search Algorithm -- Xingshen Song (National University of Defense Technology); Yuexiang Yang (National University of Defense Technology); Xiaoyong Li (National University of Defense Technology)

634 -- PMS: an Effective Approximation Approach for Distributed Large-scale Graph Data Processing and Mining -- Yingjie Cao (BeiHang University); Yangyang Zhang (BeiHang University); Jianxin Li (BeiHang University)

702 -- Computing Betweenness Centrality in B-hypergraphs -- Kwang Hee Lee (Korea Advanced Institute of Science and Technology); Myoung Ho Kim (Korea Advanced Institute of Science and Technology)

1026 -- A Communication Efficient Parallel DBSCAN Algorithm based on Parameter Server -- Xu Hu (Alibaba Group); Jun Huang (Alibaba Group); Minghui Qiu (Alibaba Group)

1085 -- A Framework for Estimating Execution Times of IO Traces on SSDs -- Yoonsuk Kang (Hanyang University); Yong-Yeon Jo (Hanyang University); Jaehyuk Cha (Hanyang University); Wan D. Bae (Hanyang University); Sang-Wook Kim (Hanyang University)

1162 -- Machine Learning based Performance Modeling of Flash SSDs -- Jaehyung Kim (Yonsei University); Jinuk Park (Yonsei University); Sanghyun Park (Yonsei University)

Missing Info | Pacific Ballroom

399 -- When Labels Fall Short: Property Graph Simulation via Blending of Network Structure and Vertex Attributes -- Arun V Sathanur (Pacific Northwest National Laboratory); Sutamay Choudhury (Pacific Northwest National Laboratory); Cliff Joslyn (Pacific Northwest National Laboratory); Sumit Purohit (Pacific Northwest National Laboratory)

714 -- Missing Value Learning -- Zhi-Lin Zhao (Sun Yat-sen University); Chang-Dong Wang (Sun Yat-sen University); Kun-Yu Lin (Sun Yat-sen University); Jian-Huang Lai (Sun Yat-sen University)

745 -- Learning Entity Type Embeddings for Knowledge Graph Completion -- Changsung Moon (North Carolina State University); Paul Jones (North Carolina State University); Nagiza F. Samatova (North Carolina State University & Oak Ridge National Laboratory)

777 -- Task Embeddings: Learning Query Embeddings using Task Context -- Rishabh Mehrotra (University College London); Emine Yilmaz (University College London & Alan Turing Institute)

1153 -- Knowledge Graph Embedding with Triple Context -- Jun Shi (Southeast University); Huan Gao (Southeast University); Guilin Qi (Southeast University); Zhangquan Zhou (Southeast University)

1727 -- Enhancing Knowledge Graph Completion By Embedding Correlations -- Soumajit Pal (Vrije Universiteit Amsterdam); Jacopo Urbani (Vrije Universiteit Amsterdam)

Potpourri 1 | Pacific Ballroom

282 -- Unsupervised Feature Selection with Heterogeneous Side Information -- Xiaokai Wei (University of Illinois at Chicago); Bokai Cao (University of Illinois at Chicago); Philip S. Yu (University of Illinois at Chicago)

1566 -- Integrating Side Information for Boosting Machine Comprehension -- Yutong Wang (Zhejiang University); Yixin Xu (Zhejiang University); Min Yang (Tencent AI Lab); Zhou Zhao (Zhejiang University); Jun Xiao (Zhejiang University); Yueting Zhuang (Zhejiang University)

Potpourri 2 | Pacific Ballroom

698 -- Common-Specific Multimodal Learning for Deep Belief Network -- Changsheng Xiang (Tsinghua University); Xiaoming

Jin (Tsinghua University)

Privacy & Security | Pacific Ballroom

1630 -- Privacy of Hidden Profiles: Utility-Preserving Profile Removal in Online Forums -- Sedigheh Eslami (Hasso Plattner Institute (HPI)); Asia J. Biega (Max Planck Institute for Informatics); Rishiraj Saha Roy (Max Planck Institute for Informatics); Gerhard Weikum (Max Planck Institute for Informatics)
 2078 -- Profiling DRDoS Attacks with Data Analytics Pipeline -- Laure Berti-Equille (LIF, CNRS, Aix Marseille University, Polytech Marseille); Yury Zhauniarovich (Qatar Computing Research Institute, HBKU)

Ranking | Pacific Ballroom

142 -- JointSem: Combining Query Entity Linking and Entity based Document Ranking -- Chenyan Xiong (Carnegie Mellon University); Zhengzhong Liu (Carnegie Mellon University); Jamie Callan (Carnegie Mellon University); Eduard Hovy (Carnegie Mellon University)
 171 -- Learning to Rank with Query-level Semi-supervised Autoencoders -- Bo Xu (Dalian University of Technology); Hongfei Lin (Dalian University of Technology); Yuan Lin (Dalian University of Technology); Kan Xu (Dalian University of Technology)
 343 -- Ranking Rich Mobile Verticals based on Clicks and Abandonment -- Mami Kawasaki (Waseda University); Inho Kang (Naver Corporation); Tetsuya Sakai (Waseda University)
 368 -- Interest Diffusion in Heterogeneous Information Network for Personalized Item Ranking -- Mukul Gupta (Indian Institute of Management); Pradeep Kumar (Indian Institute of Management); Rajhans Mishra (Indian Institute of Management)
 401 -- Text Embedding for Sub-Entity Ranking from User Reviews -- Chih-Yu Chao (University of Taipei); Yi-Fan Chu (University of Taipei); Hsiu-Wei Yang (Academia Sinica); Chuan-Ju Wang (Academia Sinica); Ming-Feng Tsai (National Chengchi University)
 807 -- Alternating Pointwise-Pairwise Learning for Personalized Item Ranking -- Yu Lei (Hong Kong Polytechnic University); Wenjie Li (Hong Kong Polytechnic University); Ziyu Lu (Hong Kong Polytechnic University); Miao Zhao (Hong Kong Polytechnic University)
 1293 -- Identifying Top-K Influential Nodes in Networks -- Sara Mumtaz (University of New South Wales); Xiaoyang Wang (Zhejiang Gongshang University)
 1582 -- An Empirical Study of Embedding Features in Learning to Rank -- Faezeh Ensan (Ferdowsi University of Mashhad); Ebrahim Bagheri (Ryerson University); Amal Zouaq (University of Ottawa); Alexandre Kouznetsov (Ryerson University)
 2134 -- Simulating Zero-Resource Spoken Term Discovery-- Jerome White (New York University); Douglas W. Oard (University of Maryland)

Recommendations & Collaborative Filtering | Pacific Ballroom

305 -- Low-Rank Matrix Completion over Finite Abelian Group Algebras for Context-Aware Recommendation -- Chia-An Yu (Research Center for IT Innovation, Academia Sinica); Tak-Shing Chan (Research Center for IT Innovation, Academia Sinica); Yi-Hsuan Yang (Research Center for IT Innovation, Academia Sinica)
 364 -- Learning Graph-based Embedding For Time-Aware Product Recommendation -- Yuqi Li (Peking University); Weizheng Chen (Peking University); Hongfei Yan (Peking University)
 555 -- Collaborative Sequence Prediction for Sequential Recommender -- Shuzi Niu (Institute of Software, Chinese Academy of Sciences); Rongzhi Zhang (University of Chinese Academy of Sciences)
 590 -- A Neural Collaborative Filtering Model with Interaction-based Neighborhood -- Ting Bai (Renmin University of China & Beijing Key Laboratory of Big Data Management and Analysis Methods); Ji-Rong Wen (Renmin University of China & Beijing Key Laboratory of Big Data Management and Analysis Methods); Jun Zhang (Renmin University of China & Beijing Key Laboratory of Big Data Management and Analysis Methods); Wayne Xin Zhao (Renmin University of China & Beijing Key Laboratory of Big Data Management and Analysis Methods)
 612 -- An Improved Test Collection and Baselines for Bibliographic Citation Recommendation -- Dwaipayan Roy (Indian Statistical Institute)
 779 -- Local Ensemble across Multiple Sources for Collaborative Filtering -- Jing Zheng (Beijing University of Posts and Telecommunications); Fuzhen Zhuang (Institute of Computing Technology, CAS); Chuan Shi (Beijing University of Posts and Telecommunications)
 952 -- A Collaborative Ranking Model for Cross-Domain Recommendations -- Dimitrios Rafailidis (University of Mons); Fabio Crestani (Universit`a della Svizzera italiana (USI))
 1187 -- Improving the Gain of Visual Perceptual Behaviour on Topic Modeling for Text Recommendation -- Cheng Wang (Tongji University); Yujian Fang (Tongji University); Zheng Tan (Tongji University); Yuan He (Tongji University)
 1383 -- Efficient Fault-Tolerant Group Recommendation Using alpha-beta-core -- Danhao Ding (University of Hong Kong); Hui Li (University of Hong Kong); Zhipeng Huang (University of Hong Kong); Nikos Mamoulis (University of Hong Kong)
 1903 -- An Empirical Analysis of Pruning Techniques -- Ruey-Cheng Chen (RMIT University); Leif Azzopardi (University of Strathclyde); Falk Scholer (RMIT University)
 2055 -- Deep Neural Networks for News Recommendations -- Keunchan Park (NAVER Corp.); Jisoo Lee (NAVER Corp.); Jaeho Choi (NAVER Corp.)
 2120 -- IDAE: Imputation-boosted Denoising Autoencoder for Collaborative Filtering -- Jae-woong Lee (Sungkyunkwan University); Jongwuk Lee (Sungkyunkwan University)
 2174 -- Session-aware Information Embedding for E-commerce Product Recommendation -- Chen Wu (Alibaba Group); Ming Yan (Alibaba Group)

Similarity | Pacific Ballroom

384 -- Knowledge-based Question Answering by Jointly Generating, Copying and Paraphrasing -- Shuguang Zhu (Beijing University of Posts and Telecommunications); Xiang Cheng (Beijing University of Posts and Telecommunications); Sen Su (Beijing University of Posts and Telecommunications); Shuang Lang (Beijing University of Posts and Telecommunications)
 594 -- Deep Multi-Similarity Hashing for Multi-label Image Retrieval -- Tong Li (Beijing University of Posts and Telecommunications); Sheng Gao (Beijing University of Posts and Telecommunications); Si Li (Beijing University of Posts and Telecommunications); Yajing Xu (Beijing University of Posts and Telecommunications); Guang Chen (Beijing University of Posts and Telecommunications); Ruifang Liu (Beijing University of Posts and Telecommunications); Weiran Xu (Beijing University of Posts and Telecommunications)
 2016 -- Structural-fitting Word Vectors to Linguistic Ontology for Semantic Relatedness Measurement -- Yang-Yin Lee (National Taiwan University); Ting-Yu Yen (National Taiwan University); Hen-Hsen Huang (National Taiwan University); Hsin-Hsi Chen (National Taiwan University)
 2107 -- Accurate Sentence Matching with Hybrid Siamese Networks -- Massimo Nicosia (University of Trento); Alessandro Moschitti (Qatar Computing Research Institute, HBKU)
 2167 -- Soft Seeded SSL Graphs for Unsupervised Semantic Similarity-based Retrieval -- Avikalp Srivastava (Indian Institute of Technology, Kharagpur); Madhav Datt (Indian Institute of Technology, Kharagpur)

Summarization & Visualization | Pacific Ballroom

845 -- Automatic Catchphrase Identification from Legal Court Case Documents -- Arpan Mandal (IEST Shibpur); Kripabandhu Ghosh (IIT Kanpur); Arindam Pal (TCS Research); Saptarshi Ghosh (IIT Kharagpur & IEST Shibpur)
 847 -- Combining Local and Global Word Embeddings for Microblog Stemming -- Anurag Roy (IEST Shibpur, India); Trishnendu Ghorai (IEST Shibpur, India); Kripabandhu Ghosh (IIT Kanpur, India); Saptarshi Ghosh (IIT Kharagpur & IEST Shibpur, India)
 946 -- Paraphrastic Fusion for Abstractive Multi-Sentence Compression Generation -- Mir Tafseer Nayeem (University of Lethbridge); Yllias Chali (University of Lethbridge)
 969 -- Visualizing Deep Neural Networks with Interaction of Super-pixels -- Shixin Tian (Iowa State University); Ying Cai (Iowa State University)
 1029 -- Ontology-based Graph Visualization for Summarized View -- Xin Huang (Hong Kong Baptist University); Byron Choi (Hong Kong Baptist University); Jianliang Xu (Hong Kong Baptist University); William Kwok-Wai Cheung (Hong Kong Baptist University); Yanchun Zhang (Victoria University & Fudan University); Jiming Liu (Hong Kong Baptist University)
 1314 -- Hybrid MemNet for Extractive Summarization -- Abhishek Kumar Singh (International Institute of Information Technology, Hyderabad); Manish Gupta (International Institute of Information Technology, Hyderabad & Microsoft); Vasudeva Varma (International Institute of Information Technology, Hyderabad)
 1408 -- Analysis of Telegram, An Instant Messaging Service -- Arash Dargahi Nobari (Shahid Beheshti University:G.C); Negar Reshadatmand (Shahid Beheshti University:G.C); Mahmood Neshati (Shahid Beheshti University:G.C)
 2025 -- Sentence Retrieval with Sentiment-specific Topical Anchoring for Review Summarization -- Jiaying Tan (City University of New York); Alexander Kotov (Wayne State University); Rojiar Pir Mohammadiani (K. N. Toosi University of Technology); Yumei Huo (City University of New York)

Time & Space | Pacific Ballroom

51 -- Collecting Non-Geotagged Local Tweets via Bandit Algorithms -- Saki Ueda (University of Tsukuba); Yuto Yamaguchi (Indeed); Hiroyuki Kitagawa (University of Tsukuba)
 293 -- SERM: A Recurrent Model for Next Location Prediction in Semantic Trajectories -- Di Yao (Chinese Academy of Sciences & University of Chinese Academy of Sciences); Chao Zhang (University of Illinois at Urbana-Champaign); Jianhui Huang (Chinese Academy of Sciences & University of Chinese Academy of Sciences); Jingping Bi (Chinese Academy of Sciences & University of Chinese Academy of Sciences)
 409 -- RATE: Overcoming Noise and Sparsity of Textual Features in Real-Time Location Estimation -- Yu Zhang (Peking University); Wei Wei (Carnegie Mellon University); Binxuan Huang (Carnegie Mellon University); Kathleen M. Carley (Carnegie Mellon University); Yan Zhang (Peking University)
 492 -- SEQ: Example-based Query for Spatial Objects -- Siqiang Luo (University of Hong Kong); Jiafeng Hu (University of Hong Kong); Reynold Cheng (University of Hong Kong); Jing Yan (University of Hong Kong); Ben Kao (University of Hong Kong)
 519 -- Semantic Annotation for Places in LBSN through Graph Embedding -- Yan Wang (Central University of Finance and Economics); Zongxu Qin (Central University of Finance and Economics); Jun Pang (University of Luxembourg); Yang Zhang (Saarland University); Jin Xin (Central University of Finance and Economics)
 985 -- A Study of Feature Construction for Text-based Forecasting of Time Series Variables -- Yiren Wang (University of Illinois at Urbana-Champaign); Dominic Seyler (University of Illinois at Urbana-Champaign); Shubhra Kanti Karmaker Santu (University of Illinois at Urbana-Champaign); ChengXiang Zhai (University of Illinois at Urbana-Champaign)
 1382 -- Learning Temporal Ambiguity in Web Search Queries -- Behrooz Mansouri (University of Tehran); Mohammad Sadeq Zahedi (University of Tehran); Maseud Rahgozar (University of Tehran); Farhad Oroumchian (University of Wollongong); Ricardo Campos (Polytechnic Institute of Tomar)
 1401 -- Estimating Event Focus Time Using Neural Word Embeddings -- Supratim Das (Max Planck Institute for Informatics); Arunav Mishra (Max Planck Institute for Informatics); Klaus Berberich (Max Planck Institute for Informatics); Vinay Setty (University of Stavanger)

Topic Modeling | Pacific Ballroom

- 617 -- On Discovering the Number of Document Topics via Conceptual Latent Space -- Nghia Duong-Trung (University of Hildesheim); Lars Schmidt-Thieme (University of Hildesheim)
- 1375 -- Collaborative Topic Regression with Denoising AutoEncoder for Content and Community Co-Representation -- Trong T. Nguyen (Singapore Management University); Hady W. Lauw (Singapore Management University)
- 1773 -- An Enhanced Topic Modeling Approach to Multiple Stance Identification -- Junjie Lin (University of Chinese Academy of Sciences); Wenji Mao (University of Chinese Academy of Sciences); Yuhao Zhang (University of Chinese Academy of Sciences)

User Behavior | Pacific Ballroom

- 261 -- Online Expectation-Maximization for Click Models -- Ilya Markov (University of Amsterdam); Alexey Borisov (Yandex & University of Amsterdam); Maarten de Rijke (University of Amsterdam)
- 480 -- Exploiting User Consuming Behavior for Effective Item Tagging -- Shen Liu (Tsinghua University); Hongyan Liu (Tsinghua University)
- 488 -- An Ad CTR Prediction Method Based on Feature Learning of Deep and Shallow Layers -- Zai Huang (University of Science and Technology of China); Zhen Pan (University of Science and Technology of China); Qi Liu (University of Science and Technology of China); Bai Long (University of Science and Technology of China); Haiping Ma (IFLYTEK Co.,Ltd.); Enhong Chen (University of Science and Technology of China)
- 520 -- Bayesian Heteroscedastic Matrix Factorization for Conversion Rate Prediction -- Hongxia Yang (Alibaba Group)
- 651 -- A Compare-Aggregate Model with Dynamic-Clip Attention for Answer Selection -- Weijie Bian (Beijing University of Posts and Telecommunications); Si Li (Beijing University of Posts and Telecommunications); Zhao Yang (Beijing University of Posts and Telecommunications); Guang Chen (Beijing University of Posts and Telecommunications); Zhiqing Lin (Beijing University of Posts and Telecommunications)

Keynotes

7 NOV (TUE) | 8.50AM – 10AM | PACIFIC BALLROOM

Machine Learning at Amazon

ABSTRACT

In this talk, I will first provide an overview of key problem areas where we are applying Machine Learning (ML) techniques within Amazon such as product demand forecasting, product search, and information extraction from reviews, and associated technical challenges. I will then talk about three specific applications where we use a variety of methods to learn semantically rich representations of data: question answering where we use deep learning techniques, product size recommendations where we use probabilistic models, and fake reviews detection where we use tensor factorization algorithms.



Dr. Rajeev Rastogi

**Director, Machine Learning
Amazon**

Previously, he was the Vice President of Yahoo! Labs Bangalore, and the founding Director of the Bell Labs Research Center in Bangalore. Rajeev is active in the fields of databases, data mining, and networking, and has served on the program committees of several conferences in these areas. He currently serves on the editorial board of the CACM, and has been an Associate editor for IEEE Transactions on Knowledge and Data Engineering in the past. He has published over 125 papers, and holds over 50 patents. Rajeev is an ACM Fellow and a Bell Labs Fellow. He received his B. Tech degree from IIT Bombay, and a PhD degree in Computer Science from the University of Texas, Austin.

8 NOV (WED) | 8.30AM – 9.40AM | PACIFIC BALLROOM

How to Combine Deep & Transfer Learning

ABSTRACT

Despite deep learning's great success, it is still an open question how to transfer a deep learning model to a related but new problem domain. In this talk, I will review recent rapid advances in integrating deep learning and transfer learning. We will explain why this integration allows for good quantification of transferrable domain knowledge. We will then illustrate how to obtain build effective transfer learning algorithms via adaptations of deep learning models and generative adversarial networks. We will show the effectiveness of this new direction of research through several examples, including image classification, sentiment analysis and dialog systems.



Dr. Qiang Yang

**Professor
Hong Kong University of Science and Technology**

Qiang Yang is the head of Computer Science and Engineering (CSE) Department at Hong Kong University of Science and Technology (HKUST), where he is the University New Bright Chair Professor of Engineering. Between 2012 and 2014, he was a founding director of the Huawei Noah's Ark Research Lab. His main research interest is transfer learning, and he has done research in data mining and artificial intelligence including machine learning, planning and case based reasoning. His team has won the 2004/2005 ACM KDDCUP competition. He is a fellow of AAAI, IEEE, IAPR and AAAS. Between 2010 and 2005, he is the founding Editor in Chief of the ACM Transactions on Intelligent Systems and Technology (ACM TIST). He is now the founding EiC of IEEE Transactions on Big Data. He has served as a PC Co-chair or General Co-chair of several top international conferences, including ACM KDD 2010, ACM KDD 2012, IJCAI 2015, ACM RecSys 2013, ACM and IUI 2009 etc. He is on the board of Trustees of IJCAI, vice president of the Chinese AI Society (CAAI) and a member of the AAAI executive council. Qiang Yang has a PhD degree from the University of Maryland and Bsc degree from Peking University.

9 NOV (THUR) | 9.00AM - 10.10AM | PACIFIC BALLROOM

Deception Detection: When Computers Become Better than Humans

ABSTRACT

Whether we like it or not, deception happens every day and everywhere: thousands of trials taking place daily around the world; little white lies: "I'm busy that day!" even if your calendar is blank; news "with a twist" (a.k.a. fake news) meant to attract the readers attraction, and get some advertisement clicks on the side; portrayed identities, on dating sites and elsewhere. Can a computer automatically detect deception in written accounts or in video recordings? In this talk, I will describe our work in building linguistic and multimodal algorithms for deception detection, targeting deceptive statements, trial videos, fake news, identity deceptions, and also going after deception in multiple cultures. I will also show how these algorithms can provide insights into what makes a good lie - and thus teach us how to spot a liar. As it turns out, computers can be trained to identify lies in many different contexts, and they can do it much better than humans do!



Dr. Rada Mihalcea

Professor
University of Michigan

Rada Mihalcea is a Professor in the Computer Science and Engineering department at the University of Michigan. Her research interests are in computational linguistics, with a focus on lexical semantics, multilingual natural language processing, and computational social sciences. She serves or has served on the editorial boards of the Journals of Computational Linguistics, Language Resources and Evaluations, Natural Language Engineering, Research in Language in Computation, IEEE Transactions on Affective Computing, and Transactions of the Association for Computational Linguistics. She was a program co-chair for the Conference of the Association for Computational Linguistics (2011) and the Conference on Empirical Methods in Natural Language Processing (2009), and a general chair for the Conference of the North American Chapter of the Association for Computational Linguistics (2015). She is the recipient of a National Science Foundation CAREER award (2008) and a Presidential Early Career Award for Scientists and Engineers (2009). In 2013, she was made an honorary citizen of her hometown of Cluj-Napoca, Romania.

Industry Insight & Vision Keynote

8 NOV (WED) | 9.40AM - 10.50AM | PACIFIC BALLROOM

The Hyperconnected Smart City

ABSTRACT

As the world gets hyper-connected, cities are evolving into complex ecosystems, technically and behaviourally. Machines and humans interact continually, generating streams of data and behavior patterns. To be a true smart city in a hyper-connected world, cities today have to use technology like a modern enterprise: build a digital spine; become intelligent and leverage automation. However, this technology core should be people centric. In a multiple stakeholder ecosystem, city administrators, industries and citizens, will look at the city from a different perspective and expect different experiences. Finally citizen experience will be the determinant of success of a smart city. While articulating this vision, Ananth will highlight how differently businesses must orient themselves in this environment.



Dr. K Ananth Krishnan

CTO
Tata Consultancy Services

Ananth directs research and innovation at TCS. He has architected a 4E model to make invention, innovation and co-innovation deliver value to TCS' business and its customers. Under his leadership the TCS research community has created a significant portfolio of patents, papers and IP. Today Innovation Units have been set up in each business delivery unit. Ananth has been a member of TCS' Corporate Think-Tank since 1999, and has led several strategic initiatives. He was elected a Fellow at the Indian Academy of Engineering (INAE) in recognition of his contributions towards engineering in 2013. He was named a Distinguished Alumnus of the Indian Institute of Technology, Delhi. Ananth has been listed in Computerworld's Premier 100 IT Leaders (2007) and in Infoworld's Top 25 CTOs (2007).

Tutorials

10 NOVEMBER (FRIDAY) | 8.30AM – 12.00PM | OCEAN 1

Knowledge Extraction and Inference from Text: Shallow, Deep, and Everything in Between

ABSTRACT

Systems for structured knowledge extraction and inference have made giant strides in the last decade. Starting from shallow linguistic tagging and coarse-grained recognition of named entities at the resolution of people, places, organizations, and times, modern systems link billions of pages of unstructured text with knowledge graphs having hundreds of millions of entities belonging to tens of thousands of types, and related by tens of thousands of relations. Via deep learning, systems build continuous representations of words, entities, types, and relations, and use these to continually discover new facts to add to the knowledge graph, and support search systems that go far beyond page-level “ten blue links”. We will present a comprehensive catalog of the best practices in traditional and deep knowledge extraction and inference, trace their development, interrelationships, and point out various loose ends.



Soumen Chakrabarti

Soumen Chakrabarti received a Ph.D. from U.C. Berkeley, where he worked on compilers and runtime systems for scalable message passing multiprocessors. He was a researcher at IBM Almaden from 1996 to 1999, where he worked on hyperlink-driven Web search and mining. In 1999 he joined IIT Bombay, where he is now a professor. In 2004 he was visiting associate professor at CMU. During 2014–2016 he was a visiting scientist at Google, Mountain View.

He has published in the WWW, SIGIR, SIGKDD, EMNLP, ACL, VLDB, ICDE, SIGMOD, SODA, STOC, SPAA and other conferences as well as Scientific American, IEEE Computer, VLDB and other journals. He won the best paper award at WWW 1999. He was coauthor on the best student paper at ECML 2008. His work on keyword search in databases got the 10-year influential paper award at ICDE 2012. He won the Bhatnagar Prize in 2014. He is fellow of Indian National Academy of Engineering and of the Indian Academy of Sciences. He holds eleven patents on Web-related inventions.

He has served as vice-chair or PC member for WWW, SIGIR, SIGKDD, NIPS, EMNLP, VLDB, and ICDE regularly, and guest editor or editorial board member for Foundations and Trends in Information Retrieval, DMKD and TKDE journals. He was program chair for WSDM 2008 and WWW 2010. He has given many successful tutorials at the above conferences since 2000, and has 17 years of teaching experience. He is also author of a popular book on Web search and mining.

Partha Talukdar

Partha Talukdar is an Assistant Professor in the Department of Computational and Data Sciences (CDS) at the Indian Institute of Science (IISc), Bangalore. Previously, he was a Postdoctoral Fellow in the Machine Learning Department at Carnegie Mellon University, working with Tom Mitchell on the NELL project. Partha received his PhD (2010) in CIS from the University of Pennsylvania, working under the supervision of Fernando Pereira, Zack Ives, and Mark Liberman.

Partha is broadly interested in Machine Learning, Natural Language Processing, and Cognitive Neuroscience, with particular interest in large-scale learning and inference. Partha is a recipient of IBM Faculty Award, Google's Focused Research Award, and Accenture Open Innovation Award. He is a co-author of a book on Graph-based Semi-Supervised Learning published by Morgan Claypool Publishers. He has successfully presented tutorials at many international venues, such as ICASSP, ACL, ESSLLI, etc.



10 NOVEMBER (FRIDAY) | 8.30AM – 12.00PM | OCEAN 2

Task based Search: Understanding & Inferring User Tasks and Needs

ABSTRACT

Search behavior, and information behavior more generally, is often motivated by tasks that prompt search processes that are often lengthy, iterative, and intermittent, and are characterized by distinct stages, shifting goals and multitasking. Current search systems do not provide adequate support for users tackling complex tasks due to which the cognitive burden of keeping track of such tasks is placed on the searcher. Developing a comprehensive understanding of user's tasks would help in providing better support and recommendations to users based on their contextual information and as a result, help users accomplish the task. In this tutorial, we begin by discussing recent advancements towards building task based IR systems and present analytical results which highlight the importance of considering tasks as the focal unit of modelling search behavior. Additionally, we consider the challenge of extracting tasks from a given collection of search log data and present some recently proposed task extraction techniques which rely on recent advancements in bayesian non parametrics, word embeddings, structured predictions and deep learning. Finally, we present applications of task inference techniques alongside discussing the implications of task based systems & summarize few key open research questions.



Emine Yilmaz

Emine Yilmaz is an associate professor in the Department of Computer Science University College London, a faculty fellow of the Alan Turing Institute on Data Science and a research consultant for Microsoft Research Cambridge. She is the recipient of the Karen Sparck Jones Award in 2015 and the Google Faculty Award in 2014/15. Her main interests are evaluating quality of retrieval systems, modelling user behaviour, learning to rank, and inferring user needs while using search engines. She has published research papers extensively at major information retrieval venues such as SIGIR, CIKM, WWW and WSDM. She has previously given keynote talks at various conferences & workshops including at ECIR 2016 along with several tutorials on various Information Retrieval topics at the CHIIR 2016, SIGIR 2015, SIGIR 2012 and SIGIR 2010 Conferences and at the RuSSIR/EDBT Summer School in 2011. She has also organized several workshops on Crowdsourcing (WSDM2011, SIGIR 2011 and SIGIR 2010) and User Modelling for Retrieval Evaluation (SIGIR 2013). She has served as one of the organizers of the ICTIR Conference in 2009, as the demo chair for the ECIR Conference in 2013, and as the PC chair for the SPIRE 2015 conference. She is also a co-coordinator of the Tasks Track in TREC 2015 and 2016.

Ahmed Hassan Awadallah

Ahmed leads a team of scientists/engineers in Microsoft Research Technologies; a new R&D organization created to focus on large-scale company technology initiatives. His work is focused on creating new technologies and experiences with end-to-end integration with current and future products in the areas of intelligence assistance, search and productivity improvement.

His research interests are at the intersection of Machine Learning, Text Mining and Information Retrieval and has extensively published on the topic of task understanding and user satisfaction. A key part of his work involves using Machine Learning to model large scale text data and user behavior data with applications to user modeling, quality evaluation, ranking, recommendation, personalization and intelligent task completion assistance. In the past, Ahmed has organized a number of workshops including ACL workshop on Graph based methods (TexGraphs-7).



Rishabh Mehrotra

Rishabh Mehrotra is a final year PhD student at University College London partially supported by a Google Faculty Research Award. His PhD research focuses on inference of search tasks from query logs and their applications. Beyond tasks, his research focuses on user modelling & personalization, counterfactual analysis and deep learning for modelling user satisfaction.

Some of his recent work has been published at top conferences including WWW, SIGIR, NAA-CL, CIKM, RecSys and WSDM. He has given many guest and invited talks at various conferences, Machine Learning meetups, research group seminars and industrial research events. Over the past few years, Rishabh has been working closely with leading industrial researchers at Microsoft Research, LinkedIn & NICTA on interesting machine learning & data science projects. He has supervised over 7 Masters thesis and has served as a reviewer for top tier conferences and workshops. He is also a co-coordinator of the Tasks Track in TREC 2015, 2016 and 2017.

10 NOVEMBER (FRIDAY) | 8.30AM – 12.00PM | OCEAN 3

Commonsense for Machine Intelligence: Text to Knowledge and Knowledge to Text

ABSTRACT

There is growing conviction that the future of computing depends on our ability to exploit Big Data on the Web to enhance intelligent systems. This includes encyclopedic knowledge, commonsense knowledge (for human-like reasoning) and natural language generation (for smarter communication). With recent chatbots almost passing Turing Tests, there are calls for more commonsense-oriented alternatives, e.g., Winograd Schema Challenge. The Aristo QA system demonstrates the lack of commonsense in current systems in answering fourth-grade science exam questions. On the language generation front, despite the progress in deep learning, we are far from distinguishing subtle linguistic structures that are considered common sense, e.g. quick cars vs. fast cars. These issues occur in machine translation and must be addressed using common knowledge mined from text. Mining commonsense knowledge using the Web and applying in intelligent systems (this tutorial), in several respects, is the next frontier in computer science.



Gerard de Melo

Gerard de Melo is an Assistant Professor of Computer Science at Rutgers University, heading a team of researchers working on NLP, Big Data analytics, and web mining. Over the years, he has published over 80 papers on these topics, with Best Paper/Demo awards at WWW2011, CIKM 2010, ICGL 2008, the NAACL 2015 Workshop on Vector Space Modeling, as well as an ACL 2014 Best Paper Honorable Mention, a Best Student Paper Award nomination at ESWC 2015, and a thesis award for his work on graph algorithms for knowledge modeling. Notable research projects include UWN/MENTA, the first massively multilingual version of WordNet, and Lexvo.org, an important hub in the Web of Data. Prior to joining Rutgers, he had been a faculty member at Tsinghua University, often considered China's most prestigious university, where he headed the Web Mining and Language Technology group. Previously, he had been a Visiting Scholar at UC Berkeley, working in the ICSI AI group. He received his doctoral degree in computer science at the Max Planck Institute for Informatics. Gerard de Melo serves as an Editorial Board Member for Computational Intelligence, for the Journal of Web Semantics, for the Springer Language Resources and Evaluation journal, and for the Language Science Press TMNLP book series.

Niket Tandon

Niket Tandon is a Research Scientist at the Allen Institute for Artificial Intelligence, Seattle. He received his doctoral degree in 2016 at the Max Planck Institute for Informatics in Germany. While at MPI, he worked on automated acquisition and semantic organization of commonsense knowledge from textual contents, resulting in one of the largest commonsense knowledge bases, WebChild. During graduate studies, he spent two summers at Microsoft Research Redmond in 2011 and 2015. He served as PC members at conferences (AAAI, WWW, ACL, etc.). He founded an online project mentorship organization, PQRS Research, and supervised several undergraduate theses, and organized tutorial workshops under this ambit.



Aparna S. Varde

Aparna Varde is a tenured Associate Professor of Computer Science at Montclair State University, NJ; and Doctoral Faculty in their Environmental Management PhD Program. She obtained her PhD and MS in Computer Science from Worcester Polytechnic Institute, MA; and BE in Computer Engineering from University of Bombay, India. Her research spans Data Analytics and Artificial Intelligence with interests in multidisciplinary work. She has 2 software trademarks, 1 book chapter and around 80 publications including conferences (and/or workshops) of AAAI, CIKM, EDBT, SIGMOD, ICDE, KDD, ICDM; and journals TKDD, AIEDAM, MTAP, IJCAC, SIGKDD Explorations, SIGMOD Record. She is the founder of PIKM (CIKM PhD workshop) and has successfully co-chaired it 5 times since 2007. She was invited to co-chair the ICDM PhD Forum 2013. She served as PC member at conferences (KDD, CIKM, EDBT, ICDM, ER, DEXA etc.); reviewer for journals (TKDD, TKDE, VLDBJ, DMKD, KAIS, AIEDAM, DKE etc.) and panelist for NSF (Intelligent and Information Systems). She has been a visiting researcher at Max Planck Institute for Informatics, Saarbruecken, Germany, and continues collaborating with colleagues from there. Her research is funded by grants from NSF, PSEG and private corporations.

10 NOVEMBER (FRIDAY) | 8.30AM – 12.00PM | OCEAN 9

Network Analysis in the Age of Large Network Dataset Collections - Challenges, Solutions and Applications

ABSTRACT

We present an overview of methods and techniques for working with collections of network datasets. While the fact that many datasets used in data mining are networks has been observed for a long time, the easy availability of these via repositories such as SNAP, KONECT and ICON has only recently become possible. These collections are now allowing new types of analyses, studies and evaluations that were not possible before. In this tutorial, we present the state of the art in the area of such methods as well as practical skills needed to work with them, including choosing datasets, acquiring them, implementing the large number of experiments, as well as the statistical machine-learning issues related to their use. The teachers of this tutorial are affiliated with the KONECT project, one such repository, but the skills learned in the tutorial are not exclusive to it.



Jérôme Kunegis

Dr. Jérôme Kunegis is postdoctoral researcher at the Namur Center for Complex Systems (naXys) at the University of Namur, Belgium. Dr. Kunegis leads the KONECT project, which represents one of the network dataset repositories covered by the tutorial. Dr. Kunegis graduated at the Technical University of Berlin in the field of computer science in 2006, and received his PhD in 2011 at the University of Koblenz--Landau, Germany, on the spectral analysis of evolving networks.

Dr. Kunegis has been teaching in the fields of network science and database systems since 2012.

Renaud Lambiotte

Prof. Renaud Lambiotte has a PhD in physics from the Université libre de Bruxelles. After postdocs at ENS Lyon, University of Liège, Université Catholique de Louvain, and Imperial College London, he is currently associate professor at the Mathematical Institute of the University of Oxford and professor at the University of Namur. His main research interests are the modelling and analysis of processes taking place on large networks, with a particular focus on social and brain networks, its impact on dynamical processes, the modelling of non-Markovian processes and the analysis of temporal networks.



10 NOVEMBER (FRIDAY) | 1.30PM – 5.00PM | OCEAN 1

Towards Space and Time Coupled Social Media Analysis

ABSTRACT

With the prevalence of versatile mobile devices, people's offline activities are being increasingly captured and shared via online social media. Every day, billions of people probe different places in the physical world and broadcast their activities on various platforms (e.g., Facebook, Twitter, Instagram, Yelp) in the form of geo-tagged social media posts. The confluence of multimodal information (location, time, and text) in such data offers new opportunities for extracting valuable knowledge about people's activities, but meanwhile also introduces unique challenges to conventional data mining techniques. In the past few years, a large body of space and time coupled social media analysis methods have emerged to model people's activities in rich contexts and have been shown to be powerful in improving downstream tasks. In this tutorial, we present an organized picture of existing techniques for space and time coupled social media analysis, covering topics including spatio-temporal activity mining, event detection and forecasting, mobility modeling, and location recommendation and prediction. We also discuss about the limitations of existing research as well as important future directions. We believe this tutorial will be of interest to both researchers and practitioners in this field.



Chao Zhang

Chao Zhang is a Ph.D. candidate at the Department of Computer Science, University of Illinois at Urbana-Champaign. His research focuses on knowledge discovery from social media data and multimodal data mining. He has won the 2015 ECML/PKDD Best Student Paper Runner-up Award, the Microsoft Star of Tomorrow Excellence Award, and the Chiang Chen Overseas Graduate Fellowship.

Quan Yuan

Quan Yuan is a postdoctoral research associate of the Department of Computer Science at University of Illinois at Urbana-Champaign. He received his Ph.D. degree from the School of Computer Engineering, Nanyang Technological University, Singapore in 2015. His research interests include spatio-temporal data mining, recommender systems, and text mining.



Jiawei Han

Jiawei Han is an Abel Bliss Professor at the Department of Computer Science, UIUC. His research areas encompass data mining, data warehousing, database systems, and information networks, with over 700 publications. He is Fellow of ACM, Fellow of IEEE, Director of IPAN (2009-2016), supported by Network Science Collaborative Technology Alliance program of the U.S. Army Research Lab, and the coDirector of KnowEnG: a Knowledge Engine for Genomics, one of the NIH supported Big Data to Knowledge (BD2K) Centers.

10 NOVEMBER (FRIDAY) | 1.30PM – 5.00PM | OCEAN 2

Construction and Querying of Large-scale Knowledge Bases

ABSTRACT

In today's computerized and information-based society, people are inundated with vast amounts of text data, ranging from news articles, social media post, scientific publications, to a wide range of textual information from various domains (corporate reports, advertisements, legal acts, medical reports). How to turn such massive unstructured text data into structured, actionable knowledge, and how to enable effective and user-friendly access to such knowledge is a grand challenge to the research community.

In the first half of the tutorial, we introduce data-driven methods on mining structured facts (i.e., entities and their relations for types of interest) from massive text corpora to construct knowledge bases, with a focus on methods that are minimally-supervised, domain-independent, and language-independent for timely knowledge base construction across various application domains (news, social media, biomedical, business). In the second half of the tutorial, we discuss the challenges of querying large-scale knowledge bases, and give a systematic discussion on several emerging schema-agnostic querying paradigms for knowledge bases, including keyword query, graph query, natural language query (i.e., question answering), and query by example, which allows users to easily query knowledge bases without writing complex structured queries like SPARQL.



Xiang Ren

Xiang Ren, Assistant Professor, Department of Computer Science, University of Southern California. His research focuses on creating computational tools for better understanding and exploring massive text data. He has published over 25 papers in major conferences. He received Google PhD Fellowship, KDD Rising Star by Microsoft, Yahoo! DAIS Research Excellence Award, C. W. Gear Outstanding Graduate Student Award by UIUC and Yelp Dataset Challenge Award. Mr. Ren has rich experiences in delivering tutorials in major conferences, including SIGKDD 2015, SIGMOD 2016 and WWW 2017.



Yu Su

Yu Su, Ph.D. candidate, Department of Computer Science, University of California, Santa Barbara. His research interests lie in data mining and natural language processing, with a focus on understanding the interplay of natural and formal languages to increase the accessibility of structured data (e.g., knowledge bases, web tables, and relational databases) and services (e.g., web APIs). He has published over 10 papers on question answering, graph mining and querying, and crowdsourcing at major conferences including SIGKDD, WWW, EMNLP, and CIKM. He has interned in IBM T.J. Watson Research Center, Microsoft Research Redmond, and U.S. Army Research Laboratory.

Xifeng Yan

Xifeng Yan, Venkatesh Narayanamurti Chair Professor, Department of Computer Science, University of California, Santa Barbara. His research focuses on modeling, managing, and mining graphs in information networks, computer systems, social media and bioinformatics. His works were extensively referenced, with over 15,000 citations per Google Scholar and thousands of software downloads. He received NSF CAREER Award, IBM Invention Achievement Award, ACM-SIGMOD Dissertation Runner-Up Award, and IEEE ICDM 10-year Highest Impact Paper Award.



10 NOVEMBER (FRIDAY) | 1.30PM – 5.00PM | OCEAN 3

Knowledge Graphs: In Theory and Practice

ABSTRACT

Through the proposed tutorial, we aim to cover the state-of-the-art approaches in Knowledge Graph Construction from various types of data (i.e. unstructured, semi structured and structured data) and using both manual as well as automated methods. We also wish to review applications from various disciplines that benefit from the structure and semantics offered by knowledge graphs. Lastly, we will present case studies describing our experiences in construction of IBM Watson's Knowledge Graph and its applications in life sciences and intelligence domains.

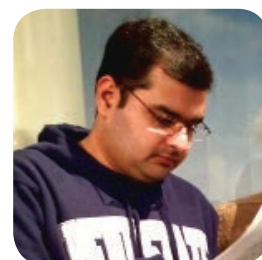


Nitish Aggarwal

Nitish Aggarwal is a Research Scientist in Watson Knowledge Graph Department at IBM Watson, Almaden Research Centre, USA, where he is leading the research effort in building intelligent industrial applications using knowledge graph. He received his PhD from Insight Centre for Data Analytics, National University of Ireland. His research interests revolve around Semantic Web, Knowledge Discovery, Information Retrieval and Natural Language Processing. He was the organizing chair of Proactive Information Retrieval workshop, collocated with ECIR 2016, and has served in program committee of multiple conferences and journals including ISWC, ESWC, AAAI, ACL, JASIST, IP&M, and JWS.

Sumit Bhatia

Sumit Bhatia is a Research Scientist in Knowledge Engineering Department at IBM India Research Laboratory where he is working on developing a shared knowledge infrastructure for different client engagements. Previously, as a Researcher in IBM Watson, he led the development of cognitive analytic algorithms build on top of Watson's Knowledge Graph. He was a Post-doctoral Researcher at Xerox PARC and as a part of CiteSeerX project at Penn State, Sumit developed a search engine that searches for algorithms and pseudo-codes in academic documents. Sumit's primary research interests are in the fields of Knowledge Management, Information Retrieval and Text Analytics, and he has published 25+ papers in top journals and conferences. He was the organizing chair of Proactive Information Retrieval workshop, collocated with ECIR 2016 and Social Multimedia Data Mining Workshop, collocated with ICDM 2014. He has served as a reviewer for multiple conferences and journals including WWW, CIKM, ACL, TKDE, TOIS, WebDB, JASIST, IJCAI, and AAAI.



Saeedeh Shekarpour

Saeedeh Shekarpour accomplished her PhD research in Germany at the University of Bonn. She spent one year as a postdoctoral researcher in the EIS research group at the Bonn University and 1+ year as a postdoctoral researcher at Knoesis research center. Her research interests are question answering, Semantic Web, NLP, statistical classifiers and social network mining. She successfully published her research results in the top-tier and prestigious conferences and journals of her field including WWW, AAI, Web Intelligence conference, IEEE Confs, Journal of Web Semantics, Semantic Web Journal.



Amit P. Sheth

Prof. Dr. Amit Sheth is a computer scientist at Wright State University in Dayton, Ohio. His work has been cited by 36,355+ publications with an h-index of 94 which puts him among the top 100 computer scientists with the highest h-index.

10 NOVEMBER (FRIDAY) | 1.30PM – 5.00PM | OCEAN 9

Malware Analysis for Data Scientists

ABSTRACT

An overview of the field of malware analysis with emphasis on issues related to data science. We discuss the various types of malware, including executable binaries, malicious PDFs, and exploit kits. The most popular tools used for analyzing malicious binaries will be presented and demonstrated, including IDA, Binary Ninja, and x64dbg. Concepts and tools from static and binary analysis will be discussed. We will discuss cluster analysis, malware attribution, and the problems caused by polymorphic malware. We will conclude with our view of important research questions in the field.



Charles Nicholas

Charles Nicholas is a Professor of Computer Science at UMBC. He has been involved in the CIKM conference for many years, and has recently turned his attention to the problems of malware analysis “in the large”. His recent work has considered questions related to storing, searching, and finding patterns in large collections of malware. He has taught a combined graduate-undergraduate course in malware analysis at UMBC for each of the last four years.

Directions to Conference Venue



WALKMAP

TO MRT STATIONS

1 ESPLANADE MRT

Exit through **Pacific Marketplace** and take the escalator up to level 2. Turn right at the top of escalator and walk towards the link bridge to Suntec City Convention & Exhibition Centre. At the circular atrium, take the escalator down to level 1 and follow the mall walkway with H&M on the left and Sephora on the right landmarks to exit the building. The MRT entrance will be on the left.

2 PROMENADE MRT

Exit through the hotel level 2 entrance and turn left to reach the Millenia Walk. Turn right again for the mall entrance via the Nihon Food Street. Take the escalator down to level 1 and turn back, proceed straight and pass through the central atrium towards the mall entrance. The MRT entrance will be on the right.

TO SHOPPING MALLS

3 SUNTEC CITY MALL

Exit through **Pacific Marketplace** and take the escalator up to level 2. Turn right at the top of escalator and walk towards the link bridge to Suntec City Convention & Exhibition Centre. Proceed straight to Suntec City Mall.

4 MARINA SQUARE

Exit through **Pacific Marketplace** and take the escalator up to level 2.

5 MILLENIA WALK

Exit through the hotel level 2 entrance and turn left to reach the Millenia Walk. Turn right again for the mall entrance via the Nihon Food Street.

TO ESPLANADE

6 Exit through **Pacific Marketplace** and take the escalator up to level 2. Proceed straight and pass through the Marina Square Central Atrium towards Raffles Ave entrance. Look out for the sign "ESPLANADE" and Pororo Park Singapore landmark on the right side of entrance. Exit the mall and take the staircase down and proceed across Raffles Ave to the destination in front.

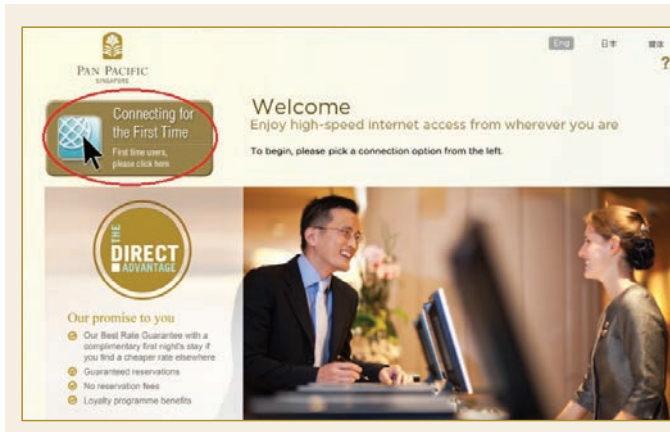


General Information

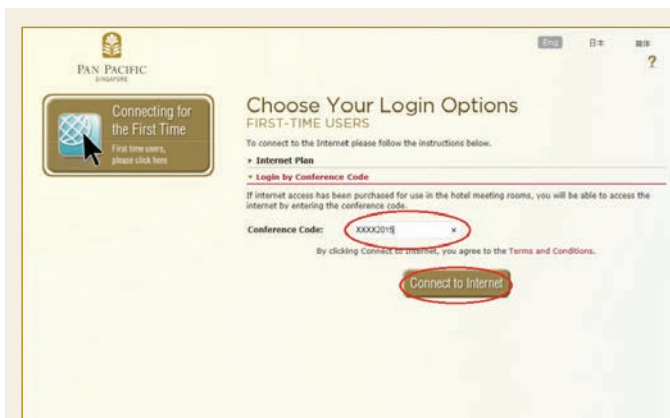
Driving Distance	30 to 40 mins from Singapore Changi Airport (SIN) to Pan Pacific Singapore	
Nearest Train Stations	Promenade Station, Esplanade Station & City Hall Station	
Nearest Convenience Store	7-Eleven at Marina Square, Level 1 (24hr)	
Nearest Medical Clinic	Raffles Medical at Marina Square (Level 1/ Tel: +65 63396644 Opening Hours (Closed on Sundays): Monday to Friday: 8.30am to 1:00pm & 2:00pm to 5:30pm / Saturday: 8:30 am to 1:00pm	
Nearest Shopping Malls	Marina Square, Millennia Walk and Suntec City shopping malls are accessible via level 1, 2 and 3 from the hotel	
Restaurants & Bars	<p>Atrium Lounge (Level 1) / +65 6826 8240 Cocktails, craft beers, wines, spirits and afternoon tea Sunday - Thursday: 10:00am to 1:00am Friday and Saturday: 10:00am to 2:00am</p> <p>Pacific Market Place (Level 1) / +65 6826 8240 Asian delights, homemade sausages and hams, sandwiches and pastries Daily: 8.00am to 10:00pm</p> <p>Edge (Level 3) / +65 6826 8240 International buffet with interactive dining experience Breakfast: 6:00am to 10:30am (Daily) Lunch: 12:00pm to 2:30pm (Monday to Saturday) Sunday Champagne Brunch: 12:00pm to 4:00pm (Sunday) Dinner: 6:30pm to 10:30pm (Daily)</p>	<p>Hai Tien Lo (Level 3) / +65 6826 8240 Traditional Cantonese dining with a contemporary twist Lunch: 11:30am to 2:30pm (Daily) Dinner: 6:30pm to 10:30pm (Daily)</p> <p>Keyaki (Level 4) / +65 6826 8240 Authentic Japanese cuisine Lunch: 11:30am to 2:30pm (Daily) Dinner: 6:30pm to 10:30pm (Daily)</p> <p>Poolside Bar (Level 4) / +65 6826 8240 Al fresco restaurant and bar Monday - Friday: 11:00am to 10:00pm Saturday and Sunday: 10:00am to 10:00pm</p> <p>Rang Mahal (Level 3) / +65 6333 1788 Fine Northern Indian cuisine Lunch: 12:00pm to 2:30pm (Sunday to Friday/ Closed on Saturdays) Dinner: 6:30pm to 10:30pm (Daily)</p>

WiFi CONNECTION

Kindly follow the steps below to log in.

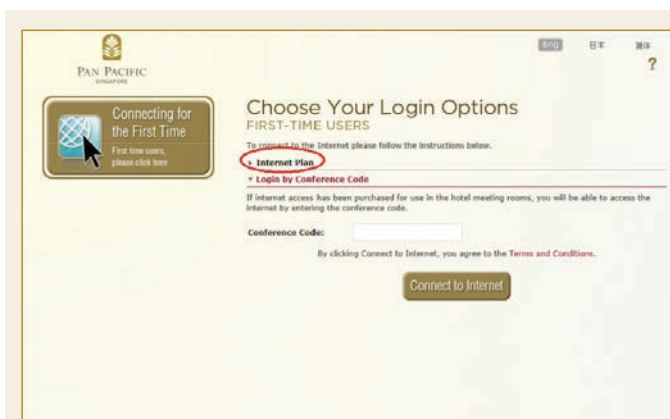


1. For business Laptop, ensure **INTERNET BROWSER** is turned off.
2. From WiFi connection page, select **“Meet@panpacific”** and tick on **“Connect Automatically”** option, and click **“Connect”**.
3. Launch Internet Browser, it should lead you to Hotel Welcome page. Click: **“Connecting for the First Time”**.



*** Not applicable for CIKM2017**

4. Key in Conference Code (available from your organiser) and select **“Connect to Internet”**.



5. If there is no conference code distributed, click on **“Internet Plan”**, choose **“Enjoy Complimentary Internet Access in Conference Room”**, and click on **“Connect to Internet”**.



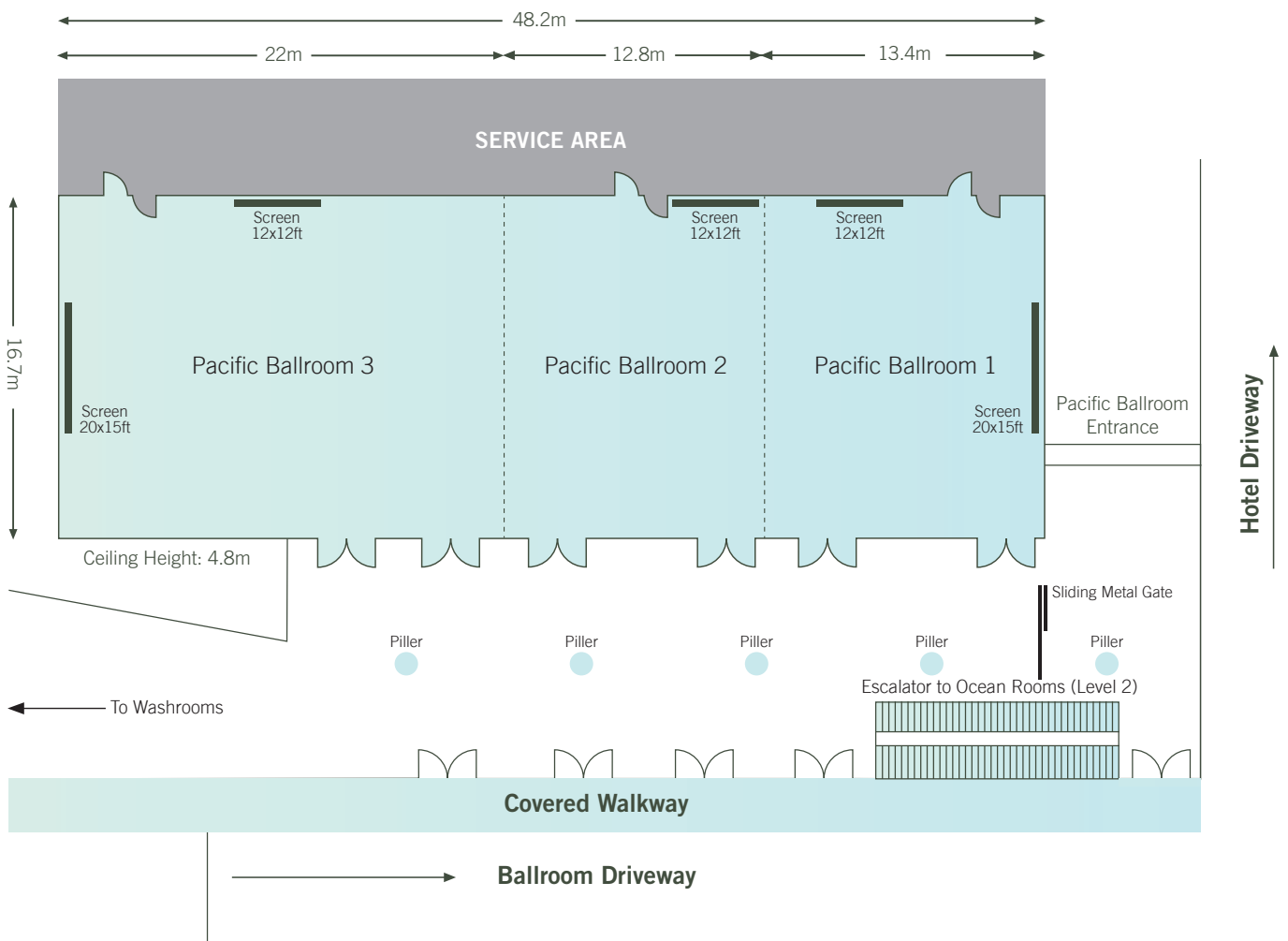
*Please speak with our hotel associate should you require further assistance. Thank you.

Pan Pacific Level 1 Floor Plan



PAN PACIFIC
SINGAPORE

PACIFIC BALLROOM (Level 1)



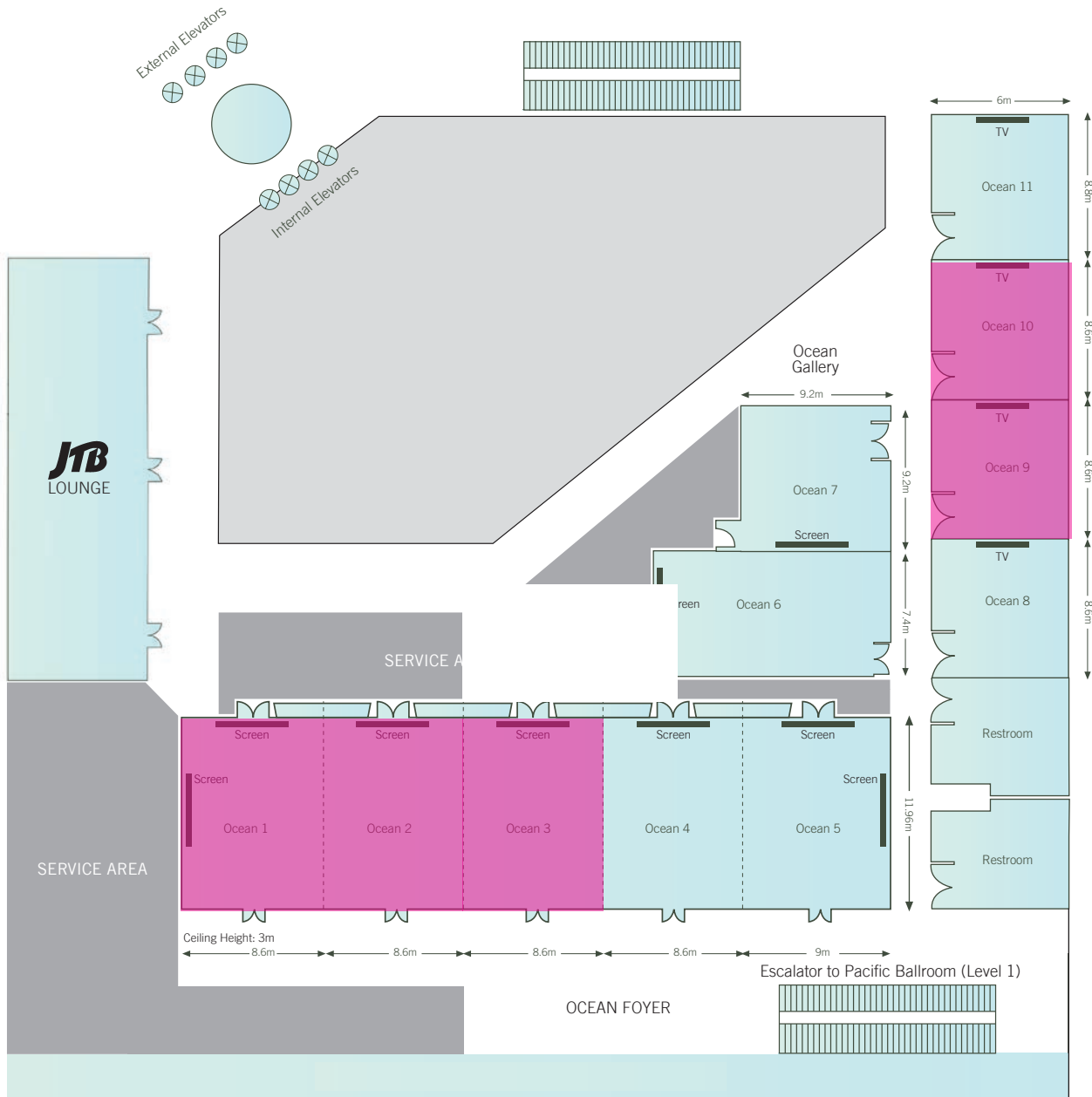
Main Conference
7 - 9 November 2017

Pacific Ballroom/Pacific 1 - 3 (Level 1)
Ocean 1-5

Pan Pacific Level 2 Floor Plan



OCEAN ROOMS (Level 2)



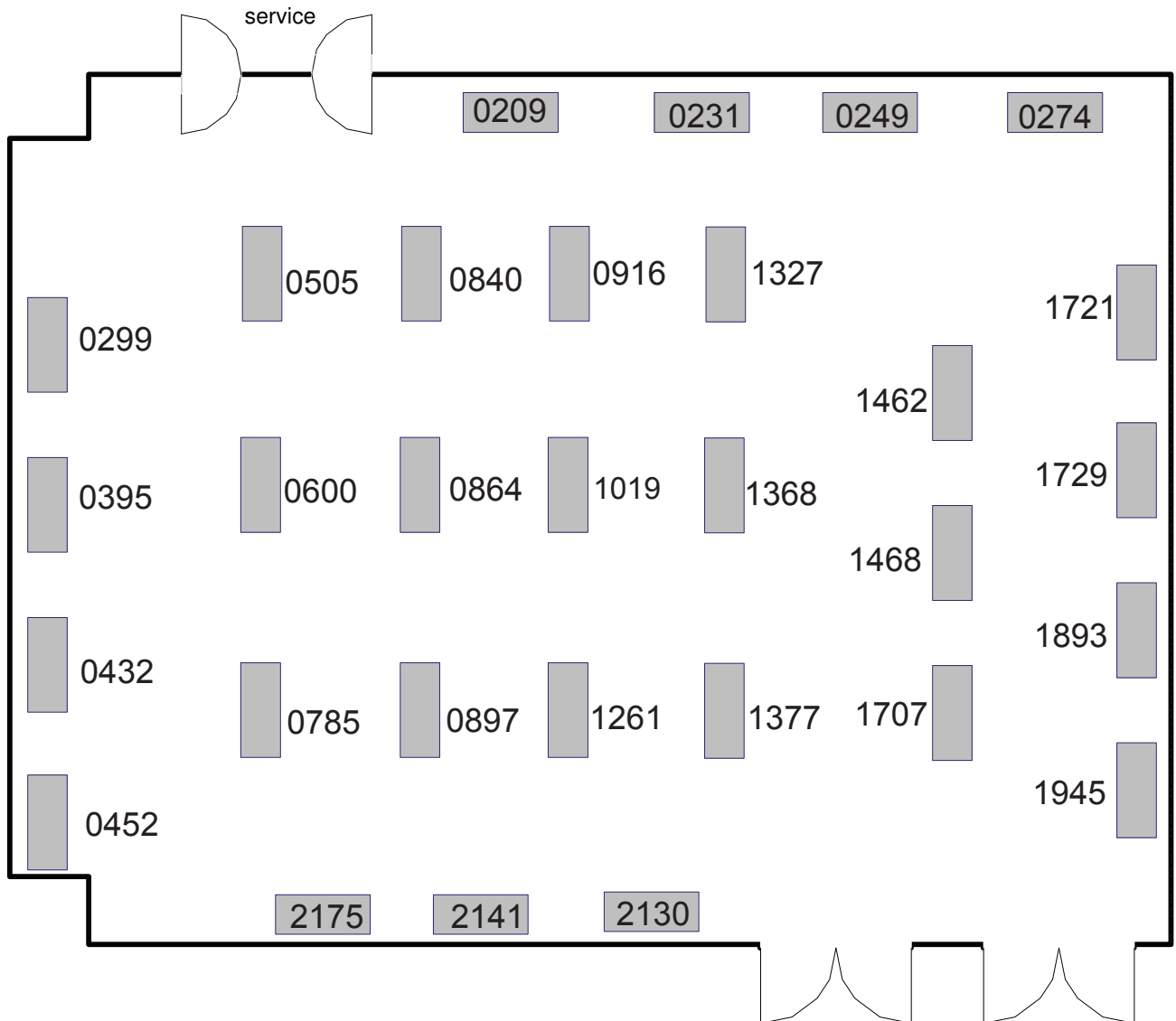
Workshop Day
6 November 2017

Ocean 2,3,9,10

Tutorial Day
10 November 2017

Ocean 1,2,3,9

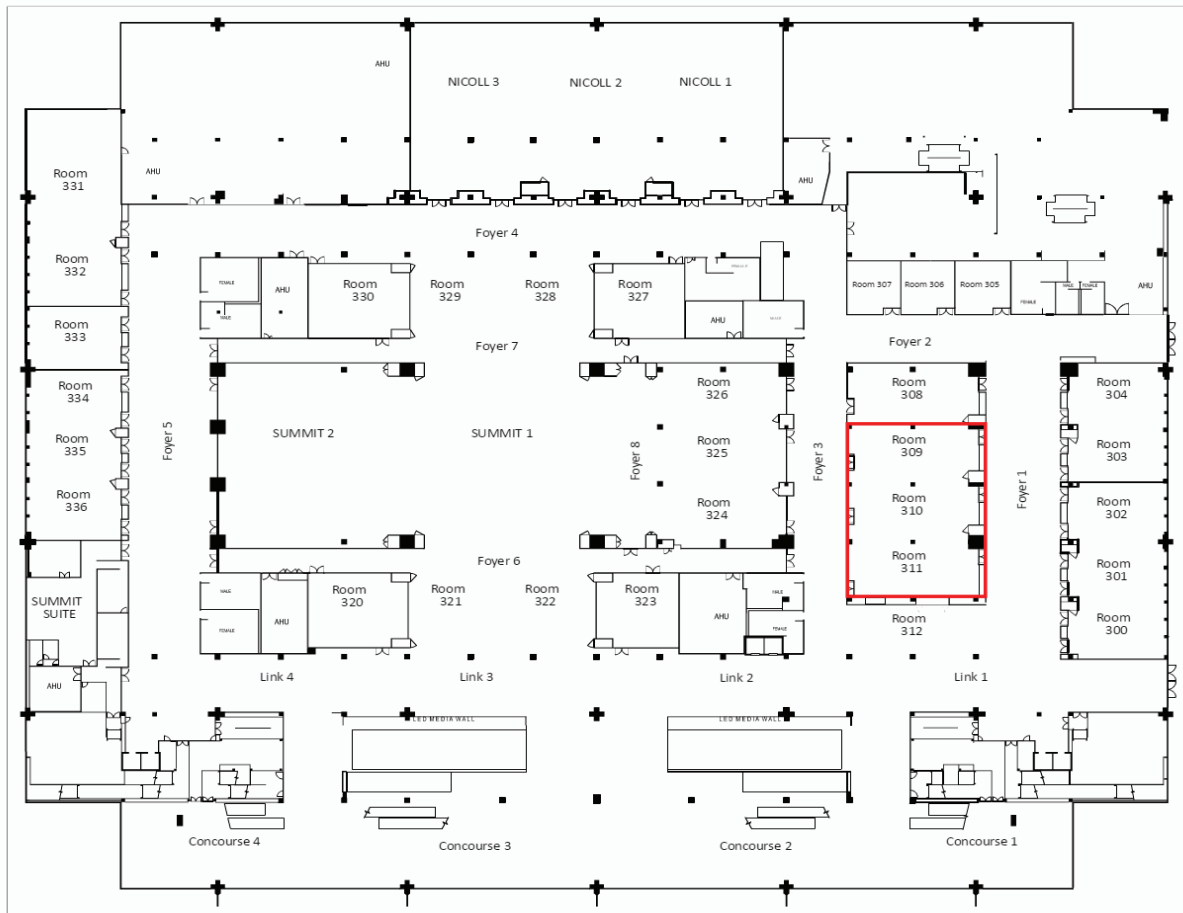
Pan Pacific Ballroom 3



Demonstrations

8 November 2017

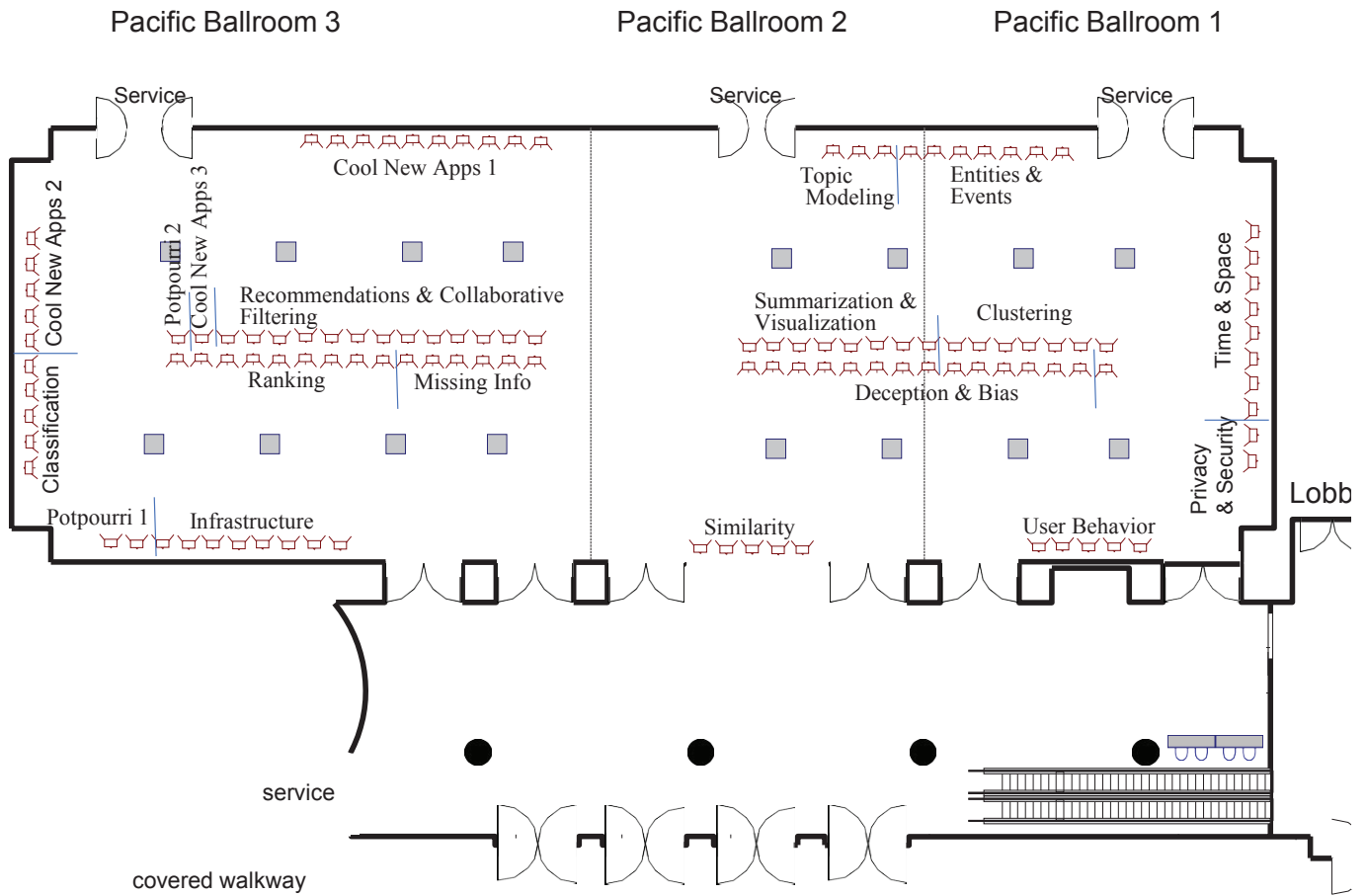
Suntec Floor Plan



AnalytiCup
6 November 2017

Big Transport
7 November 2017

Room 309 - 311



Poster Session

7 November 2017

Poster Clusters:

Classification: 372, 587, 1054, 1231, 1722

Clustering: 371, 526, 696, 1166, 2114, 270, 1476*

Cool new apps1: 241, 324, 430, 576, 815, 1023, 1098, 1570, 1778, 2133

Cool new apps 2: 228, 451, 500, 747, 857

Cool new apps 3: 1859

Deception & bias: 130, 212, 446, 774, 995, 1094, 1151, 1246, 1520, 1531, 1608, 1752, 1813, 1884

Entities & events: 648, 664, 941, 1209, 1646, 1849, 2145

Infrastructure: 48, 523, 588, 634, 1026, 1085, 1162, 702*

Missing Info: 399, 714, 745, 777, 1153, 1727

Potpourri 1: 282, 1566

Potpourri 2: 698

Privacy & security: 1630, 2078

Ranking: 2134, 142, 171, 343, 368, 401, 807, 1293, 1582

Recommendations, collaborative filtering: 305, 364, 555, 590, 612, 779, 952, 1187, 1383, 1903, 2055, 2120, 2174

Similarity: 384, 594, 2016, 2107, 2167

Summarization & visualization: 845, 847, 946, 969, 1029, 1314, 1408, 2025

Time & space: 51, 293, 409, 492, 519, 985, 1382, 1401

Topic modeling: 617, 1375, 1773

User behavior: 261, 480, 488, 520, 651

Social Event



Reception

(7 November 2017)

Time: 6.30pm - 9.30pm

Venue: Pacific Ballroom (Level 1)

Banquet

(8 November 2017)

Time: 6.15pm - 9.15pm

Venue: Pacific Ballroom (Level 1)

