2020 ICDS Virtual Conference

International Conference On Data Science
ICDS 2020
Chengdu, China in Dec 26-27 - A Fully Virtual Conference

Welcome Message from the Conference Organizers

"Data Security and Intelligent Applications"

The explosion of digital data created by mobile sensors, social media, surveillance, medical imaging, smart grids and the like-combined with new tools for analyzing it all-has brought us a Big Data era. We are facing the great challenges: how to deal with data which is more than we could actually understand and absorb and how to make efficient use of the huge volume of data? From both scientific and practical perspectives, research on "Data Science" goes beyond the contents of Big Data. Data Science can be generally regarded as an interdisciplinary field of using mathematics, statistics, databases, data mining, high-performance computing, knowledge management and virtualization to discover knowledge from data. It should have its own scientific contents, such as axioms, laws and rules, which are fundamentally important for experts in different fields to explore their own interests from data. A Blockchain is a secured, shared and distributed ledger that facilitates the process of recording and tracking resources without the need of a centralized trusted authority. The technology is scalable and robust and all participant nodes provide resources in a fair manner, which alleviates many-to-one traffic flow bottlenecks.

The "International symposium/workshop on Dataology and Data Science" has been a platform for researchers from data and some practitioners from industry and government to share their ideas, research results and experiences on studying of data. From 2010 to 2013, it has been annually held in China where more than 300 scholars and industrial professionals from Australia, Canada, China, Japan, UK and USA attended.

Started from 2014, this platform has been transferred as the annual International Conference on Data Science (ICDS) in order to further expand the preliminary findings and exchanges on Data Science. The last ICDS series were held at Beijing, China (ICDS 2014), Sydney, Australia (ICDS 2015), Xian, China (ICDS 2016), Shanghai, China (ICDS 2017), Beijing, China (ICDS 2018), Ningbo, China (ICDS 2019). ICDS 2020 will be held at Chengdu, China in Dec 26-27, 2020. Its theme will be: "Advancement of Data Science and Blockchain". The main topics, but not limited to, are as follows:

- Theory of Data Science
- Data Science of People
- Web of Data
- Data Science of Trust
- Data Science of Health
- Internet of Things
- Blockchain theories and algorithms for Data Science
- Blockchain architectures, protocols and algorithms
- Blockchain based security, privacy, and trust

- Network and computing optimization in blockchains
- Decentralization optimization in blockchain
- Scalable consensus algorithms
- Lightweight blockchain designs
- Innovative applications and research in blockchain
- Blockchain in information-centric networking
- Blockchain in smart grid
- Blockchain in artificial intelligence
- Blockchain in networking and edge/fog/cloud technologies
- Blockchain in e-health
- Blockchain in 5G technologies
- Blockchain in 5G technologies
- Blockchain in decentralized financing and payments
- Blockchain in social networking
- Blockchain in agriculture
- Blockchain in autonomous vehicles
- Blockchain in mobile cellular networks
- Blockchain standardization
- Blockchain tools, simulators and test-bed
- Private blockchain systems
- Decentralized storage in blockchain
- Security, privacy, and trust of blockchain and distributed ledger technologies
- Secure smart contracts
- Consensus mechanisms

We will invite well-known international scholars and professionals in various related fields, both natural and social sciences, to join us for the development of Data Science at this conference and so on to fully explore methodologies on Data Science from different research aspects.

KEYNOTES

Philip S. Yu
Professor and the Wexler Chair in Information Technology at the Department of Computer Science
University of Illinois at Chicago

Title: Broad Learning: A New Perspective on Mining Big Data

Abstract: In the era of big data, there are abundant of data available across many different data sources in various formats. “Broad Learning” is a new type of learning task, which focuses on fusing multiple large-scale information sources of diverse varieties together and carrying out synergistic data mining tasks across these fused sources in one unified analytic. Great challenges exist on “Broad Learning” for the effective fusion of relevant knowledge across different data sources, which depend upon not only the relatedness of these data sources, but also the target application problem. In this talk we examine how to fuse heterogeneous information to improve mining effectiveness over various applications, including social network, recommendation, malware detection, etc.

Peizhuang Wang
Full professor
Liaoning Technical University

Title: Highest algorithm for linear program

Abstract: The idea of the talk is based on Wang/s Cone cutting theory, which yields a group of special techniques. Combining the highest principle with those algorithms, we are expected to build the strong polynomial algorithms.

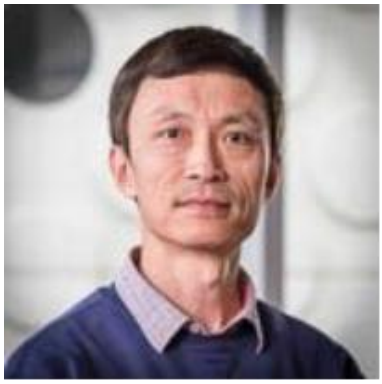
Yong Shi
Key Lab of Big Data Mining and Knowledge Management
University of Chinese Academy of Sciences

Title: How to deal with COVID-19 by using Data Analysis

Abstract: To determine the right timing for resuming work and life, the talk first provides a retrospective analysis of COVID-19 to gain an in-depth understanding of age-specific contact-based disease transmission. This is followed then by a promising analysis of different work resumption plans to assess not only the respective economic implications of the plans, but most importantly, the associated disease transmission risks. The key to the method of COVID-19 transmission pattern characterization lies in modeling the interactions among people. Specifically, this talk considers four representative settings of social contacts that may cause the disease spread: (1) households; (2) schools; (3) workplaces; and (4) public places. It develops a computational method to measure the contact intensity between different age groups in those social settings. With such an in-depth characterization of social contact-based transmission, it is possible to analyze and explain the ins and outs of the COVID-19 outbreak, including the past and future risks, intervention effectiveness, and corresponding risks of restoring social activities.

Speaker Biography:

Yong Shi, serves as the Director, Chinese Academy of Sciences Research Center on Fictitious Economy & Data Science and the Director of the Key Lab of Big Data Mining and Knowledge Management, Chinese Academy of Sciences. He is the counselor of the State Council of PRC (2016), the elected member of the International Eurasian Academy of Science (2017), and elected fellow of the World Academy of Sciences for Advancement of Science in Developing Countries (2015). His research interests include business intelligence, data mining, and multiple criteria decision making. He has published more than 32 books, over 350 papers in various journals and numerous conferences/proceedings papers. He is the Editor-in-Chief of International Journal of Information Technology and Decision Making (SCI), Editor-in-Chief of Annals of Data Science (Springer) and a member of Editorial Board for a number of academic journals.



Yun Yang
Full professor at School of Software and Electrical Engineering
Swinburne University of Technology

Title: Cost Effective Data Placement in the Cloud for Efficient Data Access of Online Social Networks

Abstract: Online social networks are organised around users who have certain expectations from their network provider, such as low latency access to both their own data and their friends' data, often very large, e.g. videos, pictures etc. Replication of data can be used to meet these requirements and geo-distributed cloud services with virtually unlimited capabilities are suitable for large scale data storage. However, social network service providers often have a limited monetary capital to store every piece of data everywhere to minimise users' data access latency. Therefore, it is crucial to have optimised data placement to fulfil the users' acceptable latency requirement while having the minimum cost for social network providers. In this seminar, we address key problems including how to find the optimal number of replicas, how to optimally place the datasets and how to distribute the requests to different datacentres.

Speaker Biography:

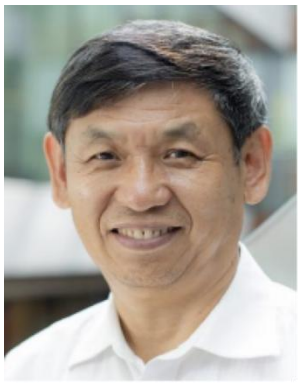
Yun Yang is a full professor at School of Software and Electrical Engineering, Swinburne University of Technology. He received his PhD degree in computer science from the University of Queensland in 1992. He then worked at CRC for Distributed Systems Technology (DSTC) and Deakin University. His current research interests include cloud and edge computing, service-oriented computing, software development technologies, and workflow systems. He is on the editorial board of IEEE Transactions on Parallel and Distributed Systems.

Wanlei Zhou
Vice Rector (Academic Affairs), Dean of Institute of Data Science
City University of Macau

Title: Threats and Defenses in Data Security Games

Abstract: One of the main threats to data security is the Advanced Persistent Threat (APT) attack. An APT attacker is a stealthy threat actor which gains unauthorized access to a computer network and remains undetected for an extended period, so as to gain unauthorized data access and data corruption throughout the data lifecycle. It has five stages: reconnaissance, establish foothold, lateral movement, exfiltration, and post-exfiltration. In this talk, we discuss the use of game theory-based deception technology to defend against APT attacks. After some introduction of data security and major threats, we focus on the following two case studies: The first case study is a countermeasure against reconnaissance, where we introduce differential privacy into a deception game. By using differential privacy, the attacker cannot deduce the real configuration of each system. The second case study is a countermeasure against lateral movement, where we develop an effective repair strategy for an organization using differential game theory. Our findings help to better understand and effectively defend against APT. The talk is based on the following two recently published papers in our group:

- Dayong Ye, Tianqing Zhu, Sheng Shen, Wanlei Zhou: "A Differentially Private Game Theoretic Approach for Deceiving Cyber Adversaries". IEEE Transactions on Information Forensics and Security. 16: 569-584 (2021).
- Lu-Xing Yang, Pengdeng Li, Yushu Zhang, Xiaofan Yang, Yong Xiang, Wanlei Zhou: "Effective Repair Strategy Against Advanced Persistent Threat: A Differential Game Approach". IEEE Transactions on Information Forensics and Security. 14(7): 1713-1728 (2019).



Chengqi Zhang
Associate Vice President
University of Technology Sydney (UTS)

Title: Interactive Deep Metric Learning

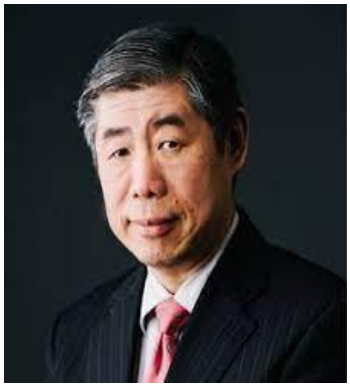
Abstract: The embedding-based data mining is to transform the raw data into useful information that is easy to consume by the downstream tasks, such as classification, predictive analysis, and clustering. The embedding function is traditionally dominated by various pattern mining algorithms and is recently driven by the deep learning-based embedding technique. In this talk, I will briefly introduce our recent data mining practices on the application domain of big healthcare data, specifically Interactive Deep Metric Learning.

Yixian Yang
President of college of Electronical and Information Engineering
Beijing University of Posts and Telecommunications

本报告将以风趣幽默的语言，把高深莫测的《博弈系统论》浅显易懂地介绍出来，至少让每位大学生都能明白，并对自己今后的学习和工作产生正面促进作用。实际上，在现行的系统科学中，各种“系统论”都主要建立在各方相互协调和配合的基础之上。而本报告则基于维纳的“反馈、微调、迭代”赛博思想，在黑客和红客彼此对抗（或管理者和被管理者彼此勾心斗角）的基础上，创立了一套新型的系统论，称之为“博弈系统论”，它至少能够比较准确地预测黑客的攻击行为；当然，它也可用于对抗性管理，与之相应的管理学，也可称为赛博管理学。特别是，该理论揭示了在各种情况下，如何对黑客的攻击行为和效果进行量化预测，以便为随后的管理和防范提供依据。

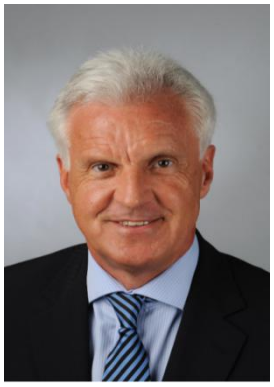
Speaker Biography：

杨义先，《安全通论》《安全简史》《黑客心理学》《博弈系统论》《密码简史》《通信简史》《科学家列传》《中国古代科学家列传》作者，北京邮电大学教授、博士导师、首届长江学者特聘教授、首届国家杰出青年基金获得者、国家级教学名师、国家级教学团队（“信息安全”）带头人、全国百篇优秀博士学位论文导师、国家精品课程负责人。现任北京邮电大学信息安全中心主任、灾备技术国家工程实验室主任。



Stanley Chiang

Dr Stanley Chiang arrived in Australia in 1980 to study at Adelaide's Flinders University. He received his degrees in Biological Sciences (BSc Hon) and Medicine (MBBS) before moving to Melbourne in 1992 to begin a general practice. He later specialised in medical acupuncture and WorkCover rehabilitation and obtained further postgraduate degrees including FRACGP (specialist in General Practice) and FAMAC. In 2002 Dr Chiang became an elected Councillor for Darebin Council in the La Trobe Ward and in 2005 he was elected as Mayor of the City of Darebin in Melbourne's inner north. After more than 10 years of service and two further elections he finished his term as Councillor, making him one of Darebin's longest serving members. He also served as a Commissioner for the Victorian Multicultural Commission (VMC) from 2001 until 2011. Currently Dr Chiang operates a number of medical clinics with his business partner and is engaged in teaching and mentoring for a number of special areas, including medical acupuncture. Dr Chiang is a strong campaigner for multiculturalism in Australia, particularly in Victoria. He also works tirelessly to support new migrants. Stanley is a member of Austin Health's Community Advisory Committee and the Primary Care & Population Health Advisory Committee.



Andre Van Zundert
Professor & Chairman Discipline of Anesthesiology
The University of Queensland

Title: COVID-19 – Lessons learnt from COVID-19 and the new normal as I see it

Abstract: Indeed, pandemics are silent killers. As one author described it, these viruses are the tiniest and primitive creatures, invisible to the naked eye form of life, which have the world under his control. Humans no longer are the masters of the world. The virus has the world in his grip and we all struggle to survive. However, plagues, major outbreaks and pandemics are of all times and probably have killed more people than all previous wars together. We often remember wars, not pandemics. Hence, we have forgotten to be prepared for pandemics; governments lack to have a plan ready to be prepared for the next epidemic. We now see that the US, India, Brazil, Russia and Argentina have topped the 1 million mark of positive cases, with many other countries following soon in their steps. And these figures are for sure an underreporting of the reality, with second waves showing we're far from controlling the virus.

Jing He
Full professor at School of Software and Electrical Engineering
Swinburne University of Technology

Title: Is NP=P? A Polynomial-time solution for finite graph isomorphism

Abstract: This talk will introduce a polynomial-time solution for finite graph isomorphism. It targets to provide a solution for one of the seven-millennium problems: NP versus P. Three new representation methods of a graph as vertex/edge adjacency matrix and triple tuple are proposed. A duality of edge and vertex and a reflexivity between vertex adjacency matrix and edge adjacency matrix were first introduced to present the core idea. Beyond this, the mathematical approval is based on an equivalence between permutation and bijection. Because only addition and multiplication operations satisfy the commutative law, we proposed a permutation theorem to check fast whether one of two sets of arrays is a permutation of another or not. The permutation theorem was mathematically approved by Integer Factorization Theory, Pythagorean Triples Theorem and Fundamental Theorem of Arithmetic. For each of two n-ary arrays, the linear and squared sums of elements were respectively calculated to produce the results.

Speaker Biography:

Dr. Jing He is currently a Professor in the School of Software and Electrical Engineering at Swinburne University of Technology, Australia. She has been awarded a PhD degree from Academy of Mathematics and System Science, Chinese Academy of Sciences in 2006. Prior to joining Swinburne University of Technology in 2018, She was a Professor at Victoria University, Melbourne, Australia from 2008 to 2018 and used to work in University of Chinese Academy of Sciences, China from 2006-2008.

She has been active in areas of Blockchain, Cybersecurity, Algorithm and Chips, Robotics Programming, Virtual Reality, Big Data Analytics, Sensor Networks, Web Service and some industry field such as E-Health, Petroleum Exploration and Development, Water Recourse Management and Unmanned Aerial Vehicle.

She has published over 170 research papers in refereed international journals and conference proceedings including Information System, Information Sciences, ACM transaction on Internet Technology (TOIT), IEEE Transaction on Knowledge and Data Engineering (TKDE), Plos One, The Computer Journal, Computers and Mathematics with Applications, Concurrency and Computation: Practice and Experience. Dr. Jing He is a IEEE senior member and her H-index is 21.

Yiu-ming Cheung
Professor of Department of Computer Science and an Associate Director of Institute of Computational and Theoretical Studies
Hong Kong Baptist University

Title: Objective-Domain Dual Decomposition: An Effective Approach to Optimizing Partially Differentiable Objective Functions

Abstract: This paper addresses a class of optimization problems in which either part of the objective function is differentiable while the rest is nondifferentiable or the objective function is differentiable in only part of the domain. Accordingly, we propose a dual-decomposition-based approach that includes both objective decomposition and domain decomposition. In the former, the original objective function is decomposed into several relatively simple subobjectives to isolate the nondifferentiable part of the objective function, and the problem is consequently formulated as a multiobjective optimization problem (MOP). In the latter decomposition, we decompose the domain into two subdomains, that is, the differentiable and nondifferentiable domains, to isolate the nondifferentiable domain of the nondifferentiable subobjective. Subsequently, the problem can be optimized with different schemes in the different subdomains. We propose a population-based optimization algorithm, called the simulated water-stream algorithm (SWA), for solving this MOP. The SWA is inspired by the natural phenomenon of water streams moving toward a basin, which is analogous to the process of searching for the minimal solutions of an optimization problem. The proposed SWA combines the deterministic search and heuristic search in a single framework. Experiments show that the SWA yields promising results compared with its existing counterparts.

Speaker Biography:

张晓明(CHEUNG, Yiu-ming)为香港浸会大学教授，是 IEEE Fellow，IET Fellow,英国计算机学会 Fellow， 皇家文艺制造商业学会 Fellow 以及香港国际工程技术协会杰出 Fellow，IEEE 计算智能学会香港分会始创者及前任主席, IEEE 计算机学会智能信息学委员（TCII）现任主席，而且也是香港浸会大学计算和理论科学研究所的副所长。张晓明教授长期从事人工智能、模式识别、图像及视频处理, 函数优化等研究, 在相关国际著名期刊及学术会议上, 如 IEEE Transactions on Pattern Analysis and Machine Intelligence， IEEE Transactions on Information Forensics and Security, IEEE Transactions on Image Processing， IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Neural Networks, IEEE Transactions on Circuits and Systems for Video Technology， CVPR, IJCAI, AAAI 等已发 表论文逾 250 篇，曾获 IWDVT'2005、ICNC-FSKD'2014、SEAL'2017 以及 ISICA'2017 国际会议最佳论 文奖，并且在 CEC'2015 计

算智能旗舰国际会议上荣获多模态优化竞赛第一名。此外，张教授于 2011 年获得香港浸会大学计算机科学系最佳研究奖，于 2020 年获选为 IEEE Distinguished Lecturer。 他已负责主持及承担包括香港研究资助局、国家自然科学基金等科研项目廿余项。张教授作为第 一发明人现拥有三项发明专利。曾于 2017 年在瑞士日内瓦举行的第 45 届日内瓦国际发明展上（是次发明展吸引了超过 700 个来自 40 个国家的参展商，合共展出超过 1000 件创新发明及产品） 荣获计算机科学组别优异金奖（即金奖中的最高级别）及瑞士汽车会大奖二项国际大奖，并获 2017 年第七届香港创新科技成就大奖香港创新发明奖金牌。此外，于 2018 年再次荣获第 46 届日 内瓦国际发明展评判嘉许特别金奖（即金奖中的最高级别）以及罗马尼亚优异奖。他曾担任包括 IJCAI, ACML, ICIP, ICDM, WI 在内的多个国际著名会议的程序委员会主席，组织委员会主席，分会主席等。张教授是香港研究资助局优配研究金工程学学科小组委员及优质教育基金评审专家，是深圳市科技创新委员会以及香港学术及职业资历评审局评委。目前他担任若干国际期刊的副主编，如: IEEE Transactions on Neural Networks and Learning Systems, IEEE Transactions on Cybernetics, Pattern Recognition, Knowledge and Information Systems, Neurocomputing 及 International Journal of Pattern Recognition and Artificial Intelligence 等。

Hong Shen
Foundation Director of Institute for Advanced Computing
Sun Yat-sen University

Title: Workload Scheduling in Data Centers with Performance Guarantee

Abstract: Driven by the booming demands of applications, advanced computing in cloud data centers is evolving to be a major paradigm of high-performance computing for data processing and analysis. A data center is composed of a massive number of servers connected by an interconnection network, and multiple geographically dispersed data centers are connected by a dedicated center network of ultra-high bandwidth. Access to data centers from office and personal computing devices is provided through an edge network in a cloud environment that supports ubiquitous on-demand submission of client jobs in addition to data collection, local processing and outsourcing. Workload scheduling in cloud data centers is critical for improving the service capability of the data centers in terms of reducing operation cost and increasing profit. This talk addresses workload scheduling in cloud data centers for minimizing operation cost and maximizing profit in the levels of data center and server respectively. I will first overview some recent developments in high-performance computing in data centers. Then, I will discuss workload scheduling in the data center level with the focus on minimizing energy cost which is the dominating factor in a data center's operation cost, and show our recent work on workload scheduling with performance guarantee in data centers with multi-source energy supply under the given green degree constraint (carbon emission cap) for environment protection. Next, I will move down to the sever level and present our work on solving the bounded flexible scheduling problem with performance guarantee to schedule workloads with bounded deadlines and parallelism degrees on a given set of data center servers. Finally I will conclude the talk by showing some of our on-going projects and future work in this direction.

Speaker Biography:

Dr. Hong Shen is a specially-appointed Professor in Sun Yat-sen University where he was the foundation Director of Institute for Advanced Computing. With main research interests in parallel and distributed computing, algorithms, data mining, privacy preserving computing, wireless and optical networks, he has led numerous research centers and projects in different countries. He has published 400+ papers including over 100 papers in major international journals such as a variety of IEEE and ACM transactions. Prof. Shen has received many honors and awards including China National Endowed Expert, Chinese Academy of Sciences “Hundred Talents”, Ministry of Education Science and Technology Progress Award, and Chinese Academy of Sciences Natural Sciences Award. He is a member of Executive Board of IEEE Technical Committee for Parallel Processing (TCPP), and has served on the editorial boards of numerous journals and chaired many conferences.

CONFERENCE ORGANIZING COMMITTEES

1. Organizers and Sponsors:

- University of Electronic Science and Technology of China, China
- Research Lab of Algorithm and Chips, Swinburne University of Technology, Australia
- Key Lab of Data Mining and Knowledge Management, the Chinese Academy of Sciences, China
- Shanghai Key Laboratory of Data Science, Fudan University, China
- School of Management, Xi'an Jiaotong University, China
- Jiangsu Provincial Key Laboratory of E-business, Nanjing University of Finance and Economics, China
- Jingqi Network (Stock ID: 837606), China
- PIESAT, China
- Tonghe Cloud Pty Ltd, China
- Springer
- International Soceity of Blockchain
- International Soceity of Algorithms and Chips

2. General Chair:

- Shijie Zhou (University of Electronic Science and Technology of China, China)
- Yong Shi (Chinese Academy of Sciences, China)

Program At A Glance

China Standard Time (CST), UTC +8

	26th, Dec., 2020	**27th, Dec., 2020**
Morning (9:00 am-12:00 am)	9:00 am-9:15 am Opening ceremony Chair 1: Tang Yu Speaker 2: Yong Zeng Speaker 3: Bing Liang Speaker 4: Yangyong Zhu Chair 2: Jing He	9:00 am – 9:20 am Industry Discussion: Jiangping Wang, Shangcheng Liang Session chair: Guangyan Huang
	9:15 am - 9:40 am Keynote speech: Philip S. Yu Session chair: Jing He	9:20 am – 9:40 am Keynote speech: Stanley Chiang Session chair: Guangyan Huang
	10:00 am - 10:20 am Keynote speech: Peizhuang Wang Session chair: Jing He	9:40 am-10:00 am Keynote speech: Chengqi Zhang Session chair: Guangyan Huang
	9:40 am - 10:00 am Keynote speech: Yong Shi Session chair: Jing He	10:00 am- 10:20 am Keynote speech: Jing He Session chair: Guangyan Huang
	10:20 am - 10:40 am Keynote speech: Yun Yang Session chair: Jing He	10:20 am – 10:40 am Keynote speech: Yiu-ming CHEUNG Session chair: Guangyan Huang
	10:40 am - 11:00 am Keynote speech: Wanlei Zhou Session chair: Jing He	10:40 am – 11:00 am Keynote speech: Hong Shen Session chair: Guangyan Huang
	11:10-11:30 am Keynote speech: Andre Van Zundert Session chair: Jing He	11:00-11:20 am Keynote speech: Yixian Yang Session chair: Guangyan Huang
	Q&A time	Q&A time
Afternoon (13:00 pm-15:30 pm)	Regular Paper Chair: Aihua Li	Regular Paper Chair: Hui Zheng
16:00pm-16:30pm		Closing Ceremony Chair: Yong Shi

Oral presentations

Session 1 (26th, December, afternoon, 13:00-15:05)

Chair: Aihua Li

13:00-15:05 (20 Mins Talk + 5 Mins Q&A for one paper, 5 talks)

13:00-13:25 Bingchan Li, Bo Mao and Peng Jiao
3D cadaster creation with CAD generalization and graph mining

13:25-13:50 Hui Zheng and Peng Li
Optimizing Multi-objective Functions in Fuzzy Association Rule Mining

13:50-14:15 Minghui Zhao and Lingling Zhang
Emergence of Web Collective Intelligence and Its Impact on Technology Foresight

14:15-14:40 Guiping Tao, Hongmei Chen and Wenjun Li
Beijing PM2.5 Influencing Factors Analysis Based on GAM

14:40-15:05 Xingsen Li, Wansheng Wu and Hao Wang
How to solve ill-defined Problems Intelligently in the Big Data Environment

Session 2 (27th, December, afternoon, 13:00-14:40)

Chair: Hui Zheng

13:00-14:40 (20 Mins Talk + 5 Mins Q&A for one paper, 4 talks)

13:00-13:25 Yao Zhang

Invited Talk: SEAL: Learning Heuristics for Community Detection with Generative Adversarial Networks

13:25-13:50 Xie Wang and Bo Mao

Spatio-temporal Semantic Analysis of Safety Production Accidents in Grain Depot based on Natural Language Processing

13:50-14:15 Tong Sun and Bo Mao

3D City Cadaster Data Visualization and Viewer Behavior Analysis in Virtual Reality Environment

14:15-14:40 Aihua Li, Weijia Xu and Yong Shi

A New Data Fusion Framework of Business Intelligence and Analytics in Economy, Finance and Management

Conference Closing

Chair: Yong Shi
16:00-16:30, 27th, Dec., 2020.

Welcome to attend our conference (free of charge):

Please use the following links to join the online meeting (Live-stream Keynotes)

Tencent Meeting (China Standard Time):

2020/12/26

Meeting ID：437 670 532
Passcode：201226

08:30-17:00: https://meeting.tencent.com/l/sYzWoeNYw9ln
Passcode: 202012

2020/12/27

Meeting ID：663 841 239
Passcode：201227

08:30-17:00: https://meeting.tencent.com/l/h4jstsJDE23D
Passcode: 202012