



2018 IEEE Smart World Congress
October 7-11, 2018
Guangzhou, China

The 4th IEEE Smart World Congress (SmartWorld 2018)

The 15th IEEE Int'l Conf. on Ubiquitous Intelligence & Computing (UIC 2018)

The 15th IEEE Int'l Conf. on Advanced & Trusted Computing (ATC 2018)

The 18th IEEE Int'l Conf. on Scalable Computing & Communications (ScalCom 2018)

The 4th IEEE Int'l Conf. on Big Data & Cloud Computing (CBDCom 2018)

The 4th IEEE Int'l Conf. on Internet of People (IoP 2018)

The 2nd IEEE Int'l Conf. on Smart City Innovations (SCI 2018)

and

Symposia, Workshops, Special Sessions and Panels



Final Program

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IEEE SmartWorld/UIC/ATC/ScalCom/CBDCom/IoP/SCI 2018

Program at a Glance (Day 1-3)

October 7 (Sunday)	
15:00-20:00	On-Site Registration
18:00-20:00	Dinner @Guangdong Hotel

October 8 (Monday)										
Time	Room 3	Room 4	Room 8	Room 9						
08:30-10:00	iSCI-1	AISE-1	C4W-1	BlockChain-1						
10:00-10:20	Coffee/Tea Break									
10:20-12:30	iSCI-2	AISE-2	C4W-2 & SRTS-1	NOPE-1						
12:30-13:30	Lunch @ Guangdong Hotel									
13:30-15:30	iSCI-3	AISE-3	AEIT-1	ECIA-1						
15:30-15:50	Coffee/Tea Break									
15:50-18:30	ADSN-1	AISE-4 & IWCSS-1	AEIT-2	IPBMM-1						
18:30-20:30	Reception @Guangdong Hotel									

October 9 (Tuesday)										
Time	International Conference Hall (Room 1)									
08:30-09:10	Opening Ceremony									
09:10-09:50	Keynote 1: Smart Things Know Where They Are Speaker: Roy Want, Google Inc, USA Chair: Guanling Chen, University of Massachusetts Lowell, USA									
09:50-10:10	Coffee/Tea Break									
10:10-10:50	Keynote 2: The Pulse of the City: Computable Urban Fabrics, Information Networks, & Transport Flow Systems Speaker: Michael Batty, University College London, UK Chair: Zhong Fan, Keele University, UK									
10:50-11:30	Keynote 3: Research on the Development Status of China Transport Infrastructure and Intelligent Road Network Package Speaker: Yanliang Du, Shijiazhuang Tiedao University, China Chair: Stephen S. Yau, Arizona State University, USA									
11:30-12:10	Keynote 4: Radio Frequency Device and Performance Test for Smart World Speaker: Yihong Qi, General Test Systems Chair: Jianhua Ma, Hosei University, Japan									
12:10-13:30	Lunch @ Guangdong Hotel									
	Room 3	Room 4	Room 12	Room 10	Room 13	Room 7	Room 8	Room 9	Room 6	Room 11
13:30-15:30	UIC ISSS-1	UIC ISSS-3	UIC ISOI-1	UIC ISEA-1	UIC P&SA-1	UIC P&SA-5	iSCI-4	ATC-1	CBDCCom-1	IoP-1
15:30-15:50	Coffee/Tea Break									
15:50-18:30	Panel-1	UIC ISSS-4	UIC ISOI-2	UIC ISEA-2	UIC P&SA-2	UIC P&SA-6	SCI-1	ATC-2	CBDCCom-2	IoP-2
18:30-20:30	Dinner @Guangdong Hotel									

IEEE SmartWorld/UIC/ATC/ScalCom/CBDCom/IoP/SCI 2018

Program at a Glance (Day 4-5)

October 10 (Wednesday)										
Time	International Conference Hall (Room 1)									
08:30-09:10	Keynote 5: AI Through The Looking Glass Speaker: Wendy Hall , University of Southampton, UK Chair: Liming Chen, De Montfort University, UK									
09:10-10:30	Panel 2: Future Computing in Smart World Chair: Stephen S. Yau , Arizona State University, USA Panelists: Xin Yao, Mazin Yousif, W. Hall, Zhi Jin									
10:30-10:50	Coffee/Tea Break									
10:50-11:30	Keynote 6: Smart Communication with Space: Protocols and Mobility Management Speaker: Mohammed Atiquzzaman , University of Oklahoma, USA Chair: Raymond Choo, The University of Texas at San Antonio, USA									
11:30-12:10	Keynote 7: User-centric Privacy & Security in the Ubiquitous World Speaker: Silvia Giordano , University of Applied Science - SUPSI, Switzerland Chair: Qi Han, Colorado School of Mines, USA									
12:10-13:30	Lunch @ Guangdong Hotel									
	Room 5	Room 4	Room 12	Room 3	Room 13	Room 7	Room 8	Room 9	Room 6	Room 14
13:30-15:30	UIC ISSS-2	UIC ISSS-5	UIC ISOI-3	UIC ISEA-3	UIC P&SA-3	UIC-2	SmartWorld-1 & SWTM	ScalCom-1	CBDCom-3	IoP-3
15:30-15:50	Coffee/Tea Break									
15:50-18:30	Panel-3	UIC ISSS-6	UIC ISOI-4	UIC-1	UIC P&SA-4	UIC-3	SmartWorld-2 & SWT	ScalCom-2	CBDCom-4	IoP-4
18:30-20:30	Banquet @Guangdong Hotel									

October 11 (Thursday)										
Time	Wenhua Hall (Room 2)									
08:30-09:10	Keynote 8: Digital Twin: The Convergence of Multimedia Technologies Speaker: Abdulmotaleb El Saddik , University of Ottawa, Canada Chair: Kouichi Sakurai, Kyushu University, Japan									
09:10-09:50	Keynote 9: Multi-Agent Systems with Reinforcement Learning Speaker: Fuhua (Oscar) Lin , Athabasca University, Canada Chair: Hao Wang, Norwegian University of Science & Technology, Norway									
09:50-10:30	Keynote 10: Privacy-preserving in Crowdsensing Systems Speaker: Wanlei Zhou , University of Technology Sydney, Australia Chair: Kevin I-Kai Wang, The University of Auckland, New Zealand									
10:30-10:50	Coffee/Tea Break									
10:50-11:30	Keynote 11: BACH: Path-oriented Reachability Checker of Linear Hybrid Automata Speaker: Xuandong Li , Nanjing University, China Chair: Saqib Ali, Guangzhou University, China									
11:30-12:10	Keynote 12: Machine Intelligence in Geo-Distributed Systems: From Cloud to Edge Speaker: Song Guo , The Hong Kong Polytechnic University, China Chair: Md. Zakirul Alam Bhuiyan, Fordham University, USA									
12:10-13:30	Lunch @ Guangdong Hotel									
	Conference Closing									

Quick Guide to Meeting Rooms

Room Number	Room Name	Floor
Room 1	International Conference Hall (国际会议厅)	3F
Room 2	Wenhua Hall (文华厅)	2F
Room 3	Zhujiang Hall (珠江厅)	3F
Room 4	Dongjiang Hall (东江厅)	3F
Room 5	Qiutang Hall (秋棠厅)	2F
Room 6	Yingchun Hall (迎春厅)	2F
Room 7	Yuexiu Hall (越秀厅)	3F
Room 8	Xijiang Hall (西江厅)	3F
Room 9	Beijiang Hall (北江厅)	3F
Room 10	Dinghu Hall (鼎湖厅)	3F
Room 11	Xiqiao Hall (西樵厅)	3F
Room 12	Danxia Hall (丹霞厅)	3F
Room 13	Luofu Hall (罗浮厅)	3F
Room 14	Youyi Hall (友谊厅)	2F

IEEE SmartWorld/UIC/ATC/ScalCom/CBDCom/IoP/SCI 2018

Program Preview

Keynotes

Keynote 1: Roy Want, Research Scientist, Android Location & Context Team, Google Inc, USA
Smart Things Know Where They Are

Keynote 2: Michael Batty, University College London, UK
The Pulse of the City: Computable Urban Fabrics, Information Networks, & Transport Flow Systems

Keynote 3: Yanliang Du, Shijiazhuang Tiedao University, China
Research on the Development Status of China Transport Infrastructure and Intelligent Road Network Package

Keynote 4: Yihong Qi, General Test Systems
Radio Frequency Device and Performance Test for Smart World

Keynote 5: Dame Wendy Hall, University of Southampton, UK
AI Through the Looking Glass

Keynote 6: Mohammed Atiquzzaman, University of Oklahoma, USA
Smart Communication with Space: Protocols and Mobility Management

Keynote 7: Silvia Giordano, University of Applied Science - SUPSI, Switzerland
User-centric Privacy & Security in the Ubiquitous World

Keynote 8: Abdulmotaleb El Saddik, University of Ottawa, Canada
Digital Twin: The convergence of Multimedia Technologies

Keynote 9: Fuhua (Oscar) Lin, Athabasca University, Canada
Multi-Agent Systems with Reinforcement Learning

Keynote 10: Wanlei Zhou, University of Technology Sydney, Australia
Privacy-preserving in Crowdsensing Systems

Keynote 11: Xuandong Li, Nanjing University, China
BACH: Path-oriented Reachability Checker of Linear Hybrid Automata

Keynote 12: Song Guo, The Hong Kong Polytechnic University
Machine Intelligence in Geo-Distributed Systems: From Cloud to Edge

Panels

Panel-1: Big Data, AI and Applications

Chairs: Jianhong Cao, The Hong Kong Polytechnic University, Hong Kong
Jie Li, Shanghai Jiaotong University, China

Panelists: Weijia Jia, Xiaohua Jia, Qun Jin, Qing Li, Junzhou Luo, Geong Min, Chengzhong Xu

Panel-2: Future Computing in Smart World

Chair: Stephen S. Yau, Arizona State University, USA

Panelists: Xin Yao, Mazin Yousif, Zhi Jin, Dame Wendy Hall

Panel-3: Cyber-Physical-Social Sensing for the Future Smart World

Chair: Kevin I-Kai Wang, The University of Auckland, New Zealand

Panelists: Liming Chen, Paolo Nesi, Kim-Kwang Raymond Choo, Richard Hill,
Md Zakirul Alam Bhuiyan, Hao Wang

Paper Sessions

A. iSCI-1 ~ iSCI-4

The 2018 International Symposium on Smart City and Informatization (iSCI 2018)

B. ADSN-1

The 17th International Workshop on Assurance in Distributed Systems and Networks (ADSN 2018)

C. AISE-1 ~ AISE-4

The 2018 Special Session on Advanced Information Systems Engineering (AISE 2018)

D. IWCSS-1

The 2nd International Workshop on Cyberspace Security (IWCSS 2018)

E. C4W-1 ~ C4W-2

The 2018 Special Session on Collaborative Computing with Cloud and Client Workshop (C4W 2018)

F. SRTS-1

The 2018 International Workshop on Smart and Resilient Transportation System (SRTS 2018)

G. AEIT-1 ~ AEIT-2

The 2018 International Workshop on Assistive Engineering and Information Technology (AEIT 2018)

H. BlockChain-1

The 2018 Special Session on BlockChain and its Applications (BlockChain 2018)

I. NOPE-1

The 6th International Workshop on Network Optimization and Performance Evaluation (NOPE 2018)

J. ECIA-1

The 2018 International Workshop on Evolutionary Computation and Its Applications (ECIA 2018)

K. IPBMM-1

The 2018 Special Session on IoP Basic Models and Methods (IPBMM 2018)

L. UIC-1 ~ UIC-3, ISSS-1~ ISSS-6, ISOI-1 ~ ISOI-4, ISEA-1 ~ ISEA-3, P&SA -1 ~ P&SA-6

The 15th IEEE International Conference on Ubiquitous Intelligence and Computing (UIC 2018)

M. SCI-1

The 2nd IEEE International Conference on Smart City Innovations (SCI 2018)

N. Smart World-1 (SWTM) ~ Smart World-2 (SWT)

The 4th IEEE Smart World Congress (SmartWorld 2018)

O. ATC-1 ~ ATC-2

The 15th IEEE International Conference on Advanced and Trusted Computing (ATC 2018)

P. ScalCom-1 ~ ScalCom-2

The 18th IEEE International Conf. on Scalable Computing and Communications (ScalCom 2018)

Q. CBDCCom-1 ~ CBDCCom-4

The 4th IEEE International Conference on Cloud and Big Data Computing (CBDCCom 2018)

R. IoP-1 ~ IoP-4

The 4th IEEE International Conference on Internet of People (IoP 2018)

Welcome Message from IEEE SmartWorld 2018 Steering Chairs

Our world is changing swiftly, and has been becoming smarter and smarter. Smart world is composed of numerous “smart things” at different levels and scales, starting from smart objects, smart machines, smart buildings, smart transportations, smart manufactures, smart agricultures, smart cities, to smart anything. We are stepping into such a smart world, in which almost everything is able to sense, communicate, compute, think, and take actions smartly, as stated in the congress theme “Smart Things Everywhere”.

Smart world, as we first envisioned in 2004, is a natural result of the fundamental trend where communications, computations and artificial intelligence are distributed ubiquitously in various physical environments that change these environments and further the whole world. While exciting, as researchers we must examine and study a series of challenging issues in achieving a truly smart world to benefit the mankind and at the same time safeguarding the natural environment to ensure sustainable development.

Smart World Congress originates from the Workshop on Ubiquitous Smart Worlds (USW 2005) in Taipei on March, and the Symposium on Ubiquitous Intelligence and Smart Worlds (UISW 2005) in Nagasaki on December. It is a flagship congress of our IEEE Smart World TC, sponsored financially by IEEE Computational Intelligence Society and technically by IEEE Computer Society. We are very delighted to have the IEEE SmartWorld 2018 in Guangzhou. We cordially welcome all of you.

SmartWorld 2018 gathers us here, which is mainly because of one special person – Prof. Guojun Wang in Guangzhou University. We highly appreciate his excellence in leading SmartWorld 2018 as the general chair and coordinating the IEEE UIC/ATC/ScalCom/CBDCCom/IoP/SCI as the executive general chairs. He has worked wholeheartedly to this large event for fifteen months since August 2017. How many emails were written by him in organizing the congress and the six co-located conferences? Over 10,000! Many thanks, Guojun.

The great success of SmartWorld 2018 is also contributed by the awesome organizing works done by all the congress/conference chairs, professional paper reviews from program committee members, and high-quality research papers from authors. Apart from the main conferences, there are three panels and eleven workshops/special sessions, which are focused on important aspects in smart world study. We are grateful for all organizers and authors of the congress, conferences, panels and workshops/special sessions.

Our sincere gratitude also goes to all distinguished keynote speakers, invited talk speakers and panelists, whose sharp insights can surely stimulate and inspire us to foresee the smart world and make it smarter. We express our great appreciations to local team members who have done a tremendous work to offer us wonderful services. Wish you an enjoyable participation in SmartWorld 2018 and a nice stay in Guangzhou, one of the major cities in China, with delicious foods and ubiquitous flowers in all seasons.



Jianhua Ma
Professor, Hosei University, Japan
Chair, IEEE CIS Smart World TC
Chair, IEEE SMC Cybermatics TC
Chair, Smart World Congress Steering Committee



Laurence T. Yang
Professor, St. Francis Xavier University, Canada
Chair, IEEE CS Scalable Computing TC
Chair, IEEE SMC Cybermatics TC
Chair, Smart World Congress Steering Committee

Welcome Message from IEEE SmartWorld 2018 General Chairs

Welcome to the 4th 2018 IEEE Smart World Congress (SmartWorld 2018), which is organized by Guangzhou University.

It is our great pleasure to organize the IEEE Smart World Congress 2018 in Guangzhou, China, 7-11 October 2018. On behalf of the organizing committee of the Congress, we would like to express to all participants who will attend the Congress, our cordial welcome and great gratitude.

The Smart World Congress is set to enhance everyday things with abilities of sensation, communication, computation and intelligence so that many tasks and processes could be simplified, more efficient, and enjoyable. It consists of numerous "smart things" that can be endowed with different levels/forms of intelligence and even capable of thinking. This smart world is set to be the next important stage in human history. Research on smart world is an emerging research field covering many areas, essential problems and crucial issues in truly building a smart world that benefits humanity, and simultaneously safeguards the natural environment for sustainable development and evolution.

The Smart World Congress aims to provide a high-profile, leading-edge platform for researchers and engineers to exchange and explore state-of-the-art advances and innovations in graceful integration of Cyber, Physical and Social Worlds with Ubiquitous Intelligence.

The Smart World Congress consists of three tracks: Smart World Theories and Models, Smart World Technologies, and Smart World Systems. Many individuals have contributed to the success of the Congress. We would like to express our special appreciation to Prof. Jianhua Ma, Prof. Laurence T. Yang, the Steering Committee Chairs, for giving us the opportunity to host this prestigious Congress and for their guidance on the congress organization. Special thanks to the Program Chairs, Dr. Md Zakirul Alam Bhuiyan, Prof. Frode Eika Sandnes and Prof. Ruixuan Li, for their outstanding work on the technical program. Thanks also to Publicity Chairs, Dr. Carlos Becker Westphall, Dr. Anna Kobusinska, and Dr. Chunsheng Zhu for their great job in publicizing this event widely. We would also like to give our thanks to all the members of the Organizing Committee and Program Committee members and External Reviewers for their efforts and support. We would also like to give our thanks to Keynote Speakers, Prof. Wendy Hall, Prof. Yanliang Du, Prof. Abdulmotaleb El Saddik, Prof. Mohammed Atiqzaman, Prof. Wanlei Zhou, Dr. Yihong Qi, for offering insightful and enlightening talks. Last but not least, we would like to thank all the authors who submitted their papers to the conference, and we hope that you will be able to attend this wonderful event!

General Chairs



Guojun Wang
Professor, Guangzhou University, China



Yew Soon Ong
Professor, Nanyang Technological University,
Singapore

Welcome Message from IEEE UIC 2018 General Chairs

On behalf of IEEE UIC 2018 Chairs and Committees, we are very pleased to welcome you to the 15th IEEE International Conference on Ubiquitous Intelligence and Computing. UIC is a forum for presenting leading work on ubiquitous intelligence including 4 tracks, Intelligent/Smart Object & Interaction, Intelligent/Smart Systems & Services, Intelligent/Smart Environment & Applications, and Personalization and Social Aspects. During the conference, scientists and engineers in both academia and industry are invited to present their high-quality work in these tracks to push beyond the limits of existing technologies.

The Steering Committee and Advisory Board members have provided excellent guidance to our Organizing Committee and PC Committee. The PC Chairs, Professor Qi Han, Professor Feng Chen, Professor Nirmalya Roy, Professor Tian Wang, and Professor Hui Yu, and the PC committee members have attracted, reviewed, and selected quality papers. The successful conference program preparation and quality proceeding publication the IEEE Ubiquitous Intelligence and Computing have been due to the incredible efforts of the PC committee members, conference organization chairs, including the Workshop Chairs, Professor Wan Du and Professor Ryan Ko and Professor Xuansong Li, the Industry Special Session Chair, Dr. Na Yu, the Poster and Demo Chairs, Professor Hassan Zadeh and Sisi Duan, the Video Contest Chairs, Professor Wei Wang and Professor Jianwu Wang, the Award Chairs, Professor Frode Eika Sandnes and Professor Laurence T. Yang, the Publicity Chairs, Professor Fl ávia C. Delicato, Professor Alan Marchiori and Professor Weigang Wu, the Journal Special Issue Chairs, Professor Bin Guo, Professor Seng Loke and Professor Haoyi Xiong, the Web Publication Chair, Qifan Wang, the Registration Chairs, Xiaofei Xing and Pin Liu, and the Local Organization Chair, Jianer Chen. They have worked very hard to ensure the successful call for papers, review and quality production of the conference proceedings. We would also like to give our thanks to Keynote Speakers, Prof. Roy Want and Prof. Silvia Giordano, for offering insightful and enlightening talks. Last but not least, we would like to thank all the authors who submitted their papers to the conference, and we hope that you will be able to attend this wonderful event!

Executive General Chair

Guojun Wang, Guangzhou University, China

General Chairs

Guanling Chen, University of Massachusetts Lowell, USA

Paul Castro, IBM Research, USA

Jun Zhang, South China University of Technology, China

Welcome Message from IEEE ATC 2018 General Chairs

Welcome to the 15th IEEE International Conference on Advanced and Trusted Computing (ATC 2018), which is organized by Guangzhou University.

It is our great pleasure to organize the ATC 2018 Conference in Guangzhou, China, 7-11 October 2018. On behalf of the organizing committee of the conference, we would like to express to all participants who will attend the conference, our cordial welcome and great gratitude.

Nowadays, various kinds of novel computing concepts are emerging to enhancing our real and virtual worlds towards smart worlds as well as cyber-physical-social-thinking integrated hyper worlds. Accordingly, computing systems are growing in capability and complexity including hardware, software, communications, networks, platforms, services, etc. Advanced computing (AC) aims to discover, develop, and deploy novel computing and networking systems. At the same time, computing must be trustworthy to engender confidence that systems will remain secure and available. Trust/distrust relationships embedded in computing systems and networks are key factors to enable dynamic interactions and cooperation of various users and services. Trusted computing (TC) aims at making computing and communication systems and services available, predictable, accountable, controllable, assessable, sustainable, dependable, persistent, and secure.

ATC conferences have taken a leading role in addressing these challenges and achieving practical advanced computing systems with truly trustworthy services. Started in 2005, the series of ATC conferences have been held at Nagasaki (Japan), Vienna (Austria), Three Gorges (China), Hong Kong (China), Oslo (Norway), Brisbane (Australia), Xi'An (China), Banff (Canada), Fukuoka (Japan), Vietri sul Mare (Italy), Bali (Indonesia), Beijing (China), Toulouse (France), and San Francisco Bay Area (USA).

Many individuals have contributed to the success of the conference. We would like to express our special appreciation to Prof. Jianhua Ma, Prof. Laurence T. Yang, the Steering Committee Chairs, for giving us the opportunity to host this prestigious conference and for their guidance on the conference organization. Special thanks to the Program Chairs, Prof. Xiaoxing Ma, Prof. Indrakshi Ray and Prof. Sebastien Faye, for their outstanding work on the technical program. Thanks also to Publicity Chairs, Dr. Yue Yu, Dr. Gregorio Martinez, Dr. Walid Bechkit and Dr. Junichi Funasaka for their great job in publicizing this event widely. We would like to give our thanks to all the members of the Organizing Committee and Program Committee members and External Reviewers for their efforts and support. We would also like to give our thanks to Keynote Speaker, Prof. Xuandong Li, for offering insightful and enlightening talk. Last but not least, we would like to thank all the authors who submitted their papers to the conference, and we hope that you will be able to attend this wonderful event!

Executive General Chairs

Guojun Wang, Guangzhou University, China

Jian Weng, Jinan University, China

Saad Harous, United Arab Emirates University, U.A.E.

General Chairs

Zhi Jin, Peking University, China

Yoshiaki Kakuda, Hiroshima City University, Japan

Hicham Lakhlef, University of Tech of Compiègne, France

Welcome Message from IEEE ScalCom 2018 General Chairs

Welcome to the 18th IEEE International Conference on Scalable Computing and Communications (ScalCom 2018), which is organized by Guangzhou University.

It is our great pleasure to organize the ScalCom 2018 Conference in Guangzhou, China, 7-11 October 2018. On behalf of the organizing committee of the conference, we would like to express to all participants who will attend the conference, our cordial welcome and great gratitude.

Scalability is one of the key evaluation criteria of computing systems. In particular, scalability is essential in HPC systems. High scalability represents a kind of elasticity, which can guarantee high throughput, small delay and high performance. Additionally, with the need to process data deluge and to solve difficult or large scale problems, new architectures like computing accelerator, e.g., GPU and MIC have appeared. Improvements to these architectures are still needed in order to use them in large scale heterogeneous systems. Similarly, new parallel algorithms, software, and tools are needed to improve scalability.

The 18th IEEE International Conference on Scalable Computing and Communications (ScalCom 2018) provides a high-profile, leading-edge forum for researchers, engineers, and practitioners to present state-of-the-art advances and innovations in theoretical foundations, systems, algorithms, infrastructure, tools, testbeds, and applications for scalable computing and communications, as well as to identify emerging research topics and define the future. ScalCom 2018 is the next edition of the successful series, previously held as ScalCom 2017 San Francisco, ScalCom 2016 Toulouse France, ScalCom 2015 Beijing China, ScalCom 2014 Bali Indonesia, ScalCom 2013 Chengdu China, ScalCom 2012 Changzhou China, ScalCom 2011 Paphos Cyprus, ScalCom 2010 Bradford UK, and ScalCom 2009 Dalian China.

Many individuals have contributed to the success of the conference. We would like to express our special appreciation to Prof. Laurence T. Yang, Prof. Albert Y. Zomaya, the Steering Committee Chairs, for giving us the opportunity to host this prestigious conference and for their guidance on the conference organization. Special thanks to the Program Chairs, Prof. Frederic Loulergue, Prof. Yuhui Deng, Prof. Burak Kantarci, for their outstanding work on the technical program. Thanks also to Publicity Chairs, Dr. Scott Fowler, Dr. Wenbin Jiang, Dr. Xiaokang Wang, for their great job in publicizing this event widely. We would like to give our thanks to all the members of the Organizing Committee and Program Committee members and External Reviewers for their efforts and support. Last but not least, we would like to thank all the authors who submitted their papers to the conference, and we hope that you will be able to attend this wonderful event!

Executive General Chair

Guojun Wang, Guangzhou University, China

General Chairs

Nong Xiao, Sun Yat-Sen University, China

Massimo Villari, University of Messina, Italy

Nikos Tziritas, Chinese Academy of Sciences, China

Welcome Message from IEEE CBDCOM 2018 General Chairs

Welcome to the 4th IEEE International Conference on Cloud and Big Data Computing (CBDCOM 2018), which is organized by Guangzhou University.

It is our great pleasure to organize the CBDCOM 2018 Conference in Guangzhou, China, 7-11 October 2018. On behalf of the organizing committee of the conference, we would like to express to all participants who will attend the conference, our cordial welcome and great gratitude.

The CBDCOM 2018 Conference is a premier forum for researchers, practitioners, developers and users who are interested in cloud computing and big data to explore new ideas, techniques and tools, as well as to exchange experience. Besides the latest research achievements. This conference also covers innovative commercial data management systems, innovative commercial applications of cloud computing and big data technology, and experience in applying recent research advances to real-world problems.

The CBDCOM 2018 Conference has attracted high-quality research papers which highlight the foundational work that strives to push beyond the limits of existing technologies, including experimental efforts, innovative systems, and investigations that identify weaknesses in existing cloud and big data computing technology.

Many individuals have contributed to the success of the conference. We would like to express our special appreciation to Prof. Jianhua Ma, Prof. Huansheng Ning, the Steering Committee Chairs, for giving us the opportunity to host this prestigious conference and for their guidance on the conference organization. Special thanks to the Program Chairs, Prof. Peng Li, Prof. Tom Guerout and Prof. Wenjun Jiang, for their outstanding work on the technical program. Thanks also to Publicity Chairs, Dr. Mir Sajjad Hussain Talpur, Dr. Zhi Liu, Dr. Feng Ye, Dr. Heng Qi, Dr. Entao Luo and Dr. Tuan Anh Trinh for their great job in publicizing this event widely. We would like to give our thanks to all the members of the Organizing Committee and Program Committee members and External Reviewers for their efforts and support. We would also like to give our thanks to Keynote Speaker, Prof. Song Guo, for offering insightful and enlightening talk. Last but not least, we would like to thank all the authors who submitted their papers to the conference, and we hope that you will be able to attend this wonderful event!

Executive General Chairs

Guojun Wang, Guangzhou University, China

Weishan Zhang, China University of Petroleum, China

General Chairs

Georges Da Costa, IRIT, France

Jin Li, Guangzhou University, China

Yinglong Xia, Huawei Research America, USA

Welcome Message from IEEE IoP 2018 General Chairs

Welcome to the 4th IEEE International Conference on Internet of People (IoP 2018), Guangzhou, China, October 7-11, 2018. As the general chairs for IEEE IoP 2018, we sincerely extend our warm welcome to all of the participants.

IEEE IoP 2018 is the next expectant event in a series of conferences successfully held in the previous years, namely, IoP 2015 at Beijing, China, IoP 2016 at Toulouse, France, and IoP 2017 at San Francisco Bay Area, USA. The main theme for IoP 2018 focuses on the power of social networking and crowd computing, and the hyper-connected human, society and intelligence as well. Topics broadly cover emerging issues and promising solutions related to a wide range of Internet of People and social computing and networking, from fundamental models and methodologies to frontier applications, across the various disciplines.

IEEE IoP 2018 serves as a premier forum for scientists, researchers, and practitioners from both academies and industries to interact across disciplines and exchange the latest advances in the state of the art and practice of Internet of People, social computing and networking, and other related fields. It is co-located with the 4th IEEE Smart World Congress 2018 (SmartWorld 2018), the 15th IEEE International Conference on Ubiquitous Intelligence and Computing (UIC 2018), the 15th IEEE International Conference on Advanced and Trusted Computing (ATC 2018), the 18th IEEE International Conference on Scalable Computing and Communications (ScalCom 2018), the 4th IEEE International Conference on Cloud and Big Data Computing (CBDCOM 2018), and the 2nd IEEE International Conference on Smart City Innovations (SCI 2018).

We would like to take the opportunity to thank all the members of the organizing committees, especially the Program Chairs, Prof. Yufeng Wang, Nanjing University of Posts and Telecommunications, China, Prof. Manuel Roveri, Politecnico di Milano, Italy, and Prof. Shuhong Chen, Guangzhou University, China, for their effective work in organizing the review of all submissions, the Executive General Chairs, Prof. Guojun Wang, Guangzhou University, China, and Prof. Hakim Mabed, UBFC/FEMTO-ST, France, for their great effort in organizing the conference, and the Steering Committee Chairs, Prof. Jianhua Ma, Hosei University, Japan, and Prof. Huansheng Ning, University of Science and Technology Beijing, China, for their helpful advice and cooperation. Last but certainly not least, we thank all of the authors and others who contribute to IEEE IoP 2018 in different ways.

We sincerely hope you find IEEE IoP 2018 helpful to your future research work and research network building, and enjoy your staying in this historical and beautiful city of Guangzhou, China.

Executive General Chairs

Guojun Wang, Guangzhou University, China

Hakim Mabed, UBFC/FEMTO-ST, France

2018 IEEE IoP General Chairs

Qun Jin, Waseda University, Japan

Bin Guo, Northwestern Polytechnical University, China

Fuhua Oscar Lin, Athabasca University, Canada

Welcome Message from IEEE SCI 2018 General Chairs

The rapid growth of cities is one of the most striking features of recent urbanization. For the first time in human history, more than half of the world's population lives in cities. Contemporary cities require creativity and innovations to tackle some of our deepest challenges. To address these challenges, attention has focused on developing modern cities with smart city services and infrastructures. The belief is that the application of advanced and the state-of-the-art information and communication technologies will lead to the more efficient and effective planning and operation of city services. The 2nd IEEE International Conference on Smart City Innovations seeks to explore and understand the innovations necessary to build and evolve smart cities. It explores innovations across the myriad of services cities provide, including transportation, utilities, public health, public safety and social services.

On behalf of the 2nd IEEE International Conference on Smart City Innovations (SCI 2018) Chairs and Committees, we are very pleased to welcome you to the IEEE SCI 2018. We thank the IEEE Computational Intelligence Society (CIS) for full sponsorship and the CIS Technical Committee on Smart World led by Professor Jianhua Ma, Hosei University in Japan for strong support and advices. We also thank the IEEE Computer Society (CS) for technical co-sponsorship. The Honorary Chair Mark S. Fox, the Advisory Chair Jerry Gao, and the Steering Committee led by Jianhua Ma and Jerry Gao, have provided excellent guidance to our Organizing Committee and PC Committee. The Executive General Chair, Guojun Wang, provided enormous guidance and support in the gestation of the conference. The PC Chairs, Lei Chen, Wanjing Ma, and Cristina Olaverri-Monreal, and the PC committee members have attracted, reviewed, and selected 5 quality papers from 15 paper submissions. The successful conference program preparation and quality proceeding publication of the IEEE International Conference on Smart City Innovations have been due to the incredible efforts of the PC committee members, conference organization chairs, including the Web Chair Tianji Xu, Registration Chairs, Xiaofei Xing and Pin Liu, Journal Special Issue Chair Pengcheng Zhang, Poster and Demo Chair Ming Shao, and Publicity Chairs, Maoyuan Sun, Laura Petersen, Sabu M. Thampi, Shaobo Zhang and Toshiyuki Amagasa. In addition, the Local Organization Chair Jianer Chen and other co-workers have made all the arrangements for ensuring quality logistics. We are also very grateful to the Workshop Chairs, Yong Qin, Zhong Fan and Weitian Tong. Without their dedicated effort, it is impossible to have the workshop program and workshop paper publications.

In addition, we would like to express our thanks to Kenita Hidalgo at IEEE Conference Planning Department, Lisa O'Conner at IEEE CPS, MomokoVanna and Stacy Negron-Sheckells at IEEE Finance Service Department for their great support. We hope that this conference will be intellectually helpful for your current and future research and professional activities. We wish you a productive and truly enjoyable environment for developing novel ideas and visions in this area.

Our special thanks are given to our keynote speaker, Dr. Michael Batty, Bartlett Professor of Planning at University College London and Chair of the Centre for Advanced Spatial Analysis. We are excited and enthusiastic that Dr. Batty will give his talk on the arrays of flows, in regards of relationships, movements, and links between locations, in city planning and development. We believe this is essential and critical to the advancement and deployment of smart city research and technologies, and therefore well fits in SCI 2018.

Executive General Chair

Guojun Wang, Guangzhou University, China

General Chairs

Haiping Xu, University of Massachusetts Dartmouth, USA

Paolo Nesi, University of Florence, Italy

Welcome Message from IEEE SmartWorld 2018 Program Chairs

On behalf of the Program Committee of the IEEE Smart World Congress (SmartWorld 2018), we would like to welcome you to join the congress in Guangzhou, China, 7-11 October 2018.

The smart world is set to enhance everyday things with abilities of sensation, communication, computation and intelligence so that many tasks and processes could be simplified, more efficient, and enjoyable. It consists of numerous "smart things" that can be endowed with different levels/forms of intelligence and even capable of thinking. This smart world is set to be the next important stage in human history. Research on smart world is an emerging research field covering many areas, essential problems and crucial issues in truly building the smart world that benefits humanity, and simultaneously safeguards the natural environment for sustainable development and evolution.

The IEEE Smart World Congress originated from the 2005 Workshop on Ubiquitous Smart Worlds (USW, Taipei) and the 2005 Symposium on Ubiquitous Intelligence and Smart World (UISW, Nagasaki). The SmartWorld 2018 in Guangzhou China is the next edition after the successful SmartWorld 2017 in San Francisco, SmartWorld 2016 in Toulouse France and SmartWorld 2015 in Beijing China. IEEE SmartWorld 2018 aims to provide a high-profile, leading-edge platform for researchers and engineers to exchange and explore state-of-art advances and innovations in graceful integration of Cyber, Physical and Social Worlds with Ubiquitous Intelligence. Particularly, the IEEE SmartWorld 2018 covers leading work on smart industry and manufacture, smart home and furniture, smart agriculture and aquaculture, smart medicine and healthcare, smart elderly/kiddy care, smart grid and energy, smart building and structure, smart roads and transportation, smart internet of things, smart vehicles and networks, smart sensing, system and service, and smart computing and communication. The SmartWorld 2018 congress collected research papers on the above research issues from all around the world. All submissions received at least three reviews from a high-quality review process and a set of high-quality papers were accepted.

We would like to offer our gratitude to the Technical Program Committee and the external reviewers that contributed their valuable time and expertise to provide professional reviews working under a very tight schedule. In addition, we would like to give our thanks to all researchers and practitioners who submitted their manuscripts. Moreover, we are very grateful to our keynote speakers who have kindly accepted our invitation to give insightful and prospective talks in SmartWorld and its co-located events.

Finally, we sincerely hope that the congress will provide a very good opportunity for you to learn from each other. Enjoy the congress, both technically and socially!

Program Chairs

Md Zakirul Alam Bhuiyan, Fordham University, USA

Frode Eika Sandnes, Oslo Metropolitan University, Norway

Ruixuan Li, Huazhong University of Science and Technology, China

Welcome Message from IEEE UIC 2018 Program Chairs

On behalf of the Program Committee of the 15th IEEE International Conference on Ubiquitous Intelligence and Computing (UIC), we would like to welcome you to join the conference in Guangzhou, China, October 7-11, 2018.

As the computational intelligence is significantly transforming our society, The IEEE UIC 2018 Conference has become a forum for both researchers and practitioners to present leading work on ubiquitous intelligence and computing. The UIC 2018 conference has attracted research papers on the related research issues from all around the world. This year we received 297 submissions. All submissions received at least three reviews from a high-quality review process. According to the review results, 101 regular papers are selected for oral presentation at the conference, giving an acceptance rate of 34%.

The success of UIC is due to the efforts of many people. We would like to use this opportunity to thank the program committee members and the referees for their time and efforts, and for their well-constructed reviews given such a compressed schedule. We would also like to express our gratitude to Guanling Chen, Paul Castro, and Jun Zhang, our General Chairs, and Guojun Wang, Executive General Chair, Jianhua Ma and Laurance T. Yang, the Chairs of the Steering Committee, for their guidance and dedication to this conference. We are deeply in debt to their untiring efforts and assistance, without which it would be close to impossible to pull together this program at all.

Last but not the least, we would like to thank all the authors of submitted papers and the attendees for their contribution and participation. Without their strong support, we could not have a successful conference.

We sincerely hope that the conference will provide an excellent opportunity for you to learn from each other. Enjoy the conference, both technically and socially!

Program Chair

Qi Han, Colorado School of Mines, USA

Program Co-Chairs

Feng Chen, De Montfort University, UK

Nirmalya Roy, University of Maryland, Baltimore County, USA

Tian Wang, Huaqiao University, China

Hui Yu, Portsmouth University, UK

Welcome Message from IEEE ATC 2018 Program Chairs

It is our great pleasure to welcome you to the 15th IEEE International Conference on Advanced and Trusted Computing (ATC 2018), Guangzhou, China, October 7-11, 2018.

IEEE ATC 2018 will offer a vibrant forum for researchers to exchange ideas and experiences in the most innovative research, development and applications related to Advanced Computing (AC) and Trusted Computing (TC). The conference is the newest edition of a series of successful ATC conferences started in 2005, which have been held at Nagasaki (Japan), Vienna (Austria), Three Gorges (China), Hong Kong (China), Oslo (Norway), Brisbane (Australia), Xi'An (China), Banff (Canada), Fukuoka (Japan), Vietrisul Mare (Italy), Bali (Indonesia), Beijing (China), Toulouse (France), and San Francisco (USA).

We would like to thank all authors who submitted their manuscripts, and the Program Committee for their esteemed expertise, valuable time, and cooperative spirit in providing professional reviews and comments in time. We would like to offer our gratitude to the Honorary Chairs, Prof. Stephen S. Yau, Prof. Julien Bourgeois, and Prof. Hong Mei, the Advisory Chairs, Prof. Tadashi Dohi and Prof. Jiwu Huang, the Steering Committee Members, Prof. Jianhua Ma and Prof. Laurence T. Yang, the Executive General Chairs, Prof. Guojun Wang, Prof. Jian Weng and Prof. Saad Harous, and the General Chairs, Prof. Zhi Jin, Prof. Yoshiaki Kakuda, and Prof. Hicham Lakhlef, for their strong support and suggestions to make the final program a success.

On behalf of the Program Committee, we would like to thank you for your support and attendance, and wish you a pleasant experience in attending this conference.

Program Chairs

Xiaoxing Ma, Nanjing University, China

Indrakshi Ray, Colorado State University, USA

Sébastien Faye, Luxembourg Institute of Science and Technology (LIST), Luxembourg

Welcome Message from IEEE ScalCom 2018 Program Chairs

On behalf of the Program Committee of the The 18th IEEE International Conference on Scalable Computing and Communications (ScalCom 2018), we would like to welcome you to join the conference in Guangzhou, China, October 7-11, 2018.

The 18th IEEE International Conference on Scalable Computing and Communications (ScalCom 2018) provides a high-profile, leading-edge forum for researchers, engineers, and practitioners to present state-of-the-art advances and innovations in theoretical foundations, systems, algorithms, infrastructure, tools, testbeds, and applications for scalable computing and communications, as well as to identify emerging research topics and define the future.

The IEEE ScalCom 2018 Conference is the next edition of the successful series, previously held as ScalCom 2017 San Francisco, ScalCom 2016 Toulouse France, ScalCom 2015 Beijing China, ScalCom 2014 Bali Indonesia, ScalCom 2013 Chengdu China, ScalCom 2012 Changzhou China, ScalCom 2011 Paphos Cyprus, ScalCom 2010 Bradford UK, and ScalCom 2009 Dalian China.

We would like to offer our gratitude to Laurence T. Yang from St. Francis Xavier University, Canada and Albert Y. Zomaya from University of Sydney, Australia, the Steering Committee Chairs. Our warm thanks to the Executive General Chairs, Guojun Wang from Guangzhou University, China, for his great support to make the final program successful. We would like also to give our thanks to all researchers and practitioners who submitted their manuscripts, and to the Program Committee members who contributed their valuable time and expertise to provide professional reviews. Moreover, we are very grateful to our keynote speakers who have kindly accepted our invitation to give insightful talks.

We cordially invite all of you to join us and interact with experts in the field of scalable computing and communications. We hope you will find the technical program informative, inspiring, and stimulating. Enjoy the conference, both technically and socially!

Program Chairs

Frédéric Loulergue, Northern Arizona University, USA

Yuhui Deng, Jinan University, China

Burak Kantarci, University of Ottawa, Canada

Welcome Message from IEEE CBDCom 2018 Program Chairs

On behalf of the Program Committee of The 4th IEEE International Conference on Cloud and Big Data Computing (CBDCom 2018), we would like to welcome you to join the conference in Guangzhou, China, October 7-11, 2018.

The IEEE CBDCom 2018 conference is a premier forum for researchers, practitioners, developers and users who are interested in cloud computing and big data to explore new ideas, techniques and tools, as well as to exchange experience. Besides the latest research achievements, this conference also covers innovative commercial data management systems, innovative commercial applications of cloud computing and big data technology, and experience in applying recent research advances to real-world problems.

We are very grateful to the organizing and steering committee for their great support in the preparation of the conference. We thank all of the authors for their creative and worthwhile contributions which make the high quality of IEEE CBDCom 2018. We hope you will enjoy the conference, and we wish you a pleasant stay in Guangzhou.

Finally, we sincerely hope that the conference will provide a very good opportunity for you to learn from each other. Enjoy the conference, both technically and socially!

Program Chairs

Peng Li, The University of Aizu, Japan

Tom Guerout, LAAS-CNRS, France

Wenjun Jiang, Hunan University, China

Welcome Message from IEEE IoP 2018 Program Chairs

On behalf of the Program Committee of the 4th IEEE International Conference on Internet of People (IoP 2018), we would like to welcome you to join the conference in Guangzhou, China, 7-11 October, 2018.

IoP represents the mapping of social individuals that refer to people as cyber entities. It focuses on data collection, modeling, and ubiquitous intelligence for a wide range of applications of crowd sourced, Internet-based personal information. The IEEE IoP 2018 is a premier forum for sharing theoretical, experimental and operational results on physical space, cyber world, social computing, human behaviors, brain science, wearable/implant technologies, etc.

The first IoP was held in 2015 in Beijing, China, and was a great success. The subsequent IoP 2016 and IoP 2017 were also successfully held in Toulouse, France, and San Francisco Bay Area, USA.

We would like to offer our gratitude to Prof. Jianhua Ma from Hosei University, Japan, and Prof. Huansheng Ning from University of Science & Technology Beijing, China, the Steering Committee Chairs. Our thanks also to the General Chairs, Prof. Qun Jin from Waseda University, Japan, Bin Guo from Northwestern Polytechnical University, China, and Prof. Fuhua Oscar Lin from Athabasca University, Canada, for their great support and good suggestions to make the success of the final program. In particular, we would like to give our thanks to all researchers and practitioners who submitted their manuscripts, and to the Program Committee and the external reviewers that contributed their valuable time and expertise to provide professional reviews working under a very tight schedule. Moreover, we are very grateful to our keynote speakers who have kindly accepted our invitation to give insightful and prospective talks.

Finally, we sincerely hope that the conference will provide a very good opportunity for you to learn from each other. Enjoy the conference, both technically and socially!

Program Chairs

Yufeng Wang, Nanjing University of Posts and Telecommunications, China

Manuel Roveri, Politecnico di Milano, Italy

Shuhong Chen, Guangzhou University, China

Welcome Message from IEEE SCI 2018 Program Chairs

On behalf of the Program Committee of the 2nd IEEE International Conference on Smart City Innovations (SCI 2018), we would like to welcome you to join the conference in Guangzhou, China, 7-11 October, 2018.

Smart City is one of the most important aspects of Smart World. Building smart cities requires close collaborations among multi-disciplinary teams composed of researchers and practitioners to solve urban computing and smart city service problems. To cope with emerging challenges in engineering diverse complex cyber systems for smart cities, it is critical to adopt state-of-the-art technologies and solutions to build innovative smart city services and application systems. Such advanced technologies include smart sensing/devices/materials, IoT, networking, cloud computing, big data, machine learning, and mobile cloud services. Typical research areas cover smart city transportation, clean environment, city utilities, public health, safety and security, smart government, community, social services, community connectivity, and so on. The 2nd IEEE International Conference on Smart City Innovations (SCI 2018) aims to provide a unique platform for multi-disciplinary researchers and teams, industry solution vendors, and government agencies to exchange innovative ideas, challenges, research results and solutions, as well as project experience reports and stories.

The IEEE SCI 2018 will include a highly selective program of technical papers, accompanied by workshops, demos, panel discussions and keynote speeches. We welcome high-quality papers that describe original and unpublished research addressing theory, modeling and methodologies for building smart cities, as well as case studies, challenges and needs in building smart cities. Valuable research advancements to share include both theory, modeling and methodologies as well as applications and industry practice.

We would like to present our gratitude to Dr. Haiping Xu and Dr. Paolo Nesi for serving as the General Chairs providing helpful advises and guidelines. Our thanks and appreciation are also conveyed to Dr. Guojun Wang, who has served as the Executive General Chair and put in tremendous effort and time for the success of SCI 2018. We would also like to give our thanks to all the other organizers of SCI 2018 for their continuous contribution. In particular, we would like to give our thanks to all researchers and practitioners who submitted their manuscripts, and to the Program Committee and the external reviewers that contributed their valuable time and expertise to provide professional reviews working under a very tight schedule. Moreover, we are very grateful to our keynote speakers who have kindly accepted our invitation to give insightful and prospective talks.

We sincerely hope that SCI 2018 will provide an excellent opportunity and forum for research exchanges and on-going as well as new collaborations. Enjoy the conference, both technically and socially!

Program Chairs

Lei Chen, Georgia Southern University, USA

Wanjing Ma, Tongji University, China

Cristina Olaverri-Monreal, UAS Technikum Wien, Austria

Keynote 1: Smart Things Know Where They Are

*Speaker: Dr. Roy Want, Research Scientist, Android Location & Context Team, Google Inc, USA
ACM and IEEE Fellow*

*Chair: Guanling Chen, University of Massachusetts Lowell, USA
09:10-09:50, October 9 (Tuesday)
International Conference Hall (Room 1)*

About the Keynote Speaker



Dr. Roy Want received his doctorate from Cambridge University, England in 1988, and is currently a Research Scientist at Google. Previous positions include Sr. Principal Engineer at Intel Corporation, and a Principal Scientist at Xerox PARC. He holds the grade of ACM and IEEE Fellow. His research interests include mobile and ubiquitous computing, distributed systems, context-aware applications, and electronic identification. He has more than 30 years' experience working in the field of mobile computing. He served as the Editor-in-chief for IEEE Pervasive Computing from 2006-2009, Chair of the ACM SIGMOBILE Executive Committee from 2009-12 and is currently the Secretary for task group IEEE

802.11az (Next Generation Positioning). He has authored or co-authored more than 85 publications, with 100+ issued patents in this area. For more information about Dr. Want's academic and industrial achievements see <http://www.roywant.com/cs/>.

Abstract:

Accurate indoor positioning technology is coming of age at a time when IoT technologies are proliferating. The combination will enable a wide range of novel context-aware services to automate tasks and support everyday work practice. This presentation will describe the latest location standards, how they work, and their applicability to the Internet of things.

Keynote 2: The Pulse of the City: Computable Urban Fabrics, Information Networks, & Transport Flow Systems

*Speaker: Prof. Michael Batty, University College London, UK
Fellow of the British Academy (FBA) and the Royal Society (FRS)*

Chair: Zhong Fan, Keele University, UK

10:10-10:50, October 9 (Tuesday)

International Conference Hall (Room 1)

About the Keynote Speaker



Michael Batty is Bartlett Professor of Planning at University College London where he is Chair of the Centre for Advanced Spatial Analysis (CASA). He has worked on computer models of cities and their visualisation since the 1970s and has published several books, such as *Cities and Complexity* (MIT Press, 2005) and *The New Science of Cities* (MIT Press, 2013). His most recent book *Inventing Future Cities* will be published by MIT Press in late 2018. His blogs www.complexcity.info cover the science underpinning the technology of cities and his posts and lectures on big data and smart cities are at www.spatialcomplexity.info.

Prior to his current position, he was Professor of City Planning and Dean at the University of Wales at Cardiff from 1979 to 1990 and then Director of the National Center for Geographic Information and Analysis at the State University of New York at Buffalo (1990-1995). He is a Fellow of the British Academy (FBA) and the Royal Society (FRS), was awarded the CBE in the Queen's Birthday Honours in 2004 and the 2013 recipient of the Lauréat Prix International de Géographie Vautrin Lud. In 2015 he received the Gold Medal of the Royal Geographical Society for his work on the science of cities. In 2016, he received the Senior Scholar Award of the Complex Systems Society and the Gold Medal of the Royal Town Planning Institute.

Abstract:

In this talk, I will sketch the development of the idea that cities should not be examined first and foremost as sets of locations, sets of places, but as arrays of flows – of relationships, movements, and links between locations. Locations cannot be understood without recourse to interactions and flows. In this sense, locations should always be unpacked and explored as flows and until we adopt this idea, our study of locations is only half complete. I will introduce a number of flow systems and then indicate how past efforts at thinking about cities in these terms is being enriched by data from the high frequency city. Much of this thinking revolves around the emergence of new data sets streamed in real time and is a consequence of the continuing computer revolution. I will show some of our work on building a model of flows for the UK, on defining communities using network science, and on flow systems such as automated transit using the ways in which we now access such systems using smart cards.

Keynote 3: Research on the Development Status of China Transport Infrastructure and Intelligent Road Network Package

*Speaker: Prof. Yanliang Du, Shijiazhuang Tiedao University, China
The Chinese Academy of Engineering*

*Chair: Stephen S. Yau, Arizona State University, USA
10:50-11:30, October 9, 2018 (Tuesday)*

International Conference Hall (Room 1)

About the Keynote Speaker



Prof. Yanliang Du is a professor in the Structural Health Monitoring and Control Institute at the Shijiazhuang Tiedao University, Hebei province, China. He received his Bachelor and Master Degree in engineering from PLA Railway Corps Engineering College and Beijing Jiaotong University in 1980 and 1989, respectively. In 1993, he obtained his Ph.D. in engineering from Beihang University, China.

His research interests are in large engineering structure state monitoring and safety control, especially the railway safety monitoring and reliability evaluation. He has successfully integrated the intelligent structure theory and incorporated it into the civil engineering safety assurance technology. Besides, he proposed a new structure state monitoring and safety control theory, namely monitoring - evaluation - early warning – repair theory, and applied it in many China rail transit projects such as the national high-speed railway, the heavy haul railway, the railway in cold and plateau area, the sped-up existing railway and the urban railway.

Dr. Yanliang Du received many awards, such as the First Prize (once) and the Second Prize (twice) of National Science and Technology Progress Awards, the First Prize of Ministerial and Provincial-Level Science and Technology Awards (six times), the First Prize (once) and the Second Prize (twice) of National Teaching Achievement Awards, Science and Technology Awards of the Ho Leung Ho Lee Foundation (once). He also obtained the honorary titles of National Outstanding Professional and Technical Personnel and National Outstanding Teacher. He has been authorized 12 invention patents, and published more than 180 papers and 9 Monograph / textbooks. He was elected as the Chinese Academy of Engineering in 2013.

Abstract:

“The achievements and challenges during the development of China Transport Infrastructure?”

The construction of transportation infrastructure has been making great progress, which is unprecedented in the amount of investment and the speed of growth. Meanwhile, rapid development of traffic construction has also laid a solid foundation for supporting rapid and sound development of economy and played an enormous role in boosting economic development, social progress, stability in border areas and national unity. However, for the transportation infrastructure, which its life cycle reached end of life and still has a certain function, demolition and re-building using large sums of money, not only cause a lot of waste resource but also will be difficult to realize because of the restriction of the busy traffic, environment protection, geographic space requirement, etc.

“The characteristics of the intelligent road network?”

With the development of smart city and intelligent transportation systems (ITS), numerous sensing devices are developed in traffic network. It can utilize various kinds of data sources such as vehicle sensors and traffic cameras and hold the potential to alleviate the phenomenon. Significant increasing number of available sensing devices, mobile devices, and real-time monitors, and advanced sustainable transport infrastructure generate a huge amount of city transportation data. Currently, this city transportation big data is unfortunately not fully analyzed and utilized in city traffic data services.

“What should we do for the Future Intelligent Road Network?”

Based on the technology of seamless perception, using the Internet of Things (IoT), Big data, Cloud Computing and so on, research the comprehensive information integration technology and innovate the new operation and management modes of Intelligent Transport Network, to optimize the operational procedures and improve the control ability and maintenance decision level of the government, and to build new regulatory means and coordination and linkage mechanism between government departments. The Development and advancement of the intelligence road network research has a great scientific significance and application value for security the safety traffic infrastructure, the long-term service performance, smooth and efficiency in transport traffic.

Keynote 4: Radio Frequency Device and Performance Test for Smart World

*Speaker: Dr. Yihong Qi, CEO of General Test Systems
Fellow of Canadian Academy of Engineering
Chair: Jianhua Ma, Hosei University, Japan
11:30-12:10, October 9, 2018 (Tuesday)
International Conference Hall (Room 1)*

About the Keynote Speaker



Dr. Yihong Qi is president of General Test Systems. He is adjunct professor in Missouri University of Science and Technology and Hunan University. Dr. Qi is an engineer and inventor, who has been merging the fundamental research breakthroughs of noise theory and electromagnetics with the applications in wireless communications. With more than 250 invention patents, he was the hardware technology driving force for the success of Blackberry. He is founder and partner of four technology companies, employing more than 4000 people globally. He developed multi-resonance antenna theory, which has led to the invention of a new generation of antenna for mobile phones which is used by all the smart phones today.

Dr. Qi is fellow of Canadian academy of engineering. He is chairman of IEEE emerging wireless communication technical committee of EMC society, Chairman of IEEE passive intermodulation working group. Dr. Qi is contributor for the CTIA and 3GPP standards. He is an advisory board of directors and associate editor of IEEE transaction on EMC, associate editor of IEEE internet of things journal. Dr. Qi is the distinguished lecturer of EMC society. He received the IEEE technical achievement awards in the IEEE EMC society, outstanding reviewer of IEEE transaction on instrumentation and measurement, top 10 entrepreneur award in the Pearl Delta all in 2017.

Abstract:

Sensors are the fundamental units that connect the smart world. How can we make sure they are going to function properly and meet our performance requirement? The answer could be the right way of measurement! It is estimated that the deployed sensors can reach 50 billion by year 2020, and large percentage of the sensors being wireless enabled. To ensure the cost effective, reliable and maintenance efficient deployment of the wireless sensor networks, new accurate, fast, compact size and network-base radio frequency (RF) device performance test need to be investigated. This talk is highlighting internet of measurement concept and key building blocks for RF over the air test. The smart world's massive sensor applications will reshape the measurement industry.

Keynote 5: AI Through The Looking Glass

*Speaker: Prof. Dame Wendy Hall, University of Southampton, UK
Senior Vice President of the Royal Academy of Engineering
Chair: Liming Chen, De Montfort University, UK
08:30-9:10, October 10 (Wednesday)
International Conference Hall (Room 1)*

About the Keynote Speaker



Dame Wendy Hall, DBE, FRS, FREng is Regius Professor of Computer Science, Pro Vice-Chancellor (International Engagement) at the University of Southampton, and is the Executive Director of the Web Science Institute. With Sir Tim Berners-Lee and Sir Nigel Shadbolt, she co-founded the Web Science Research Initiative in 2006 and is the Managing Director of the Web Science Trust, which has a global mission to support the development of research, education and thought leadership in Web Science. She became a Dame Commander of the British Empire in the 2009 UK New Year's Honours list, and is a Fellow of the Royal Society.

She has previously been President of the ACM, Senior Vice President of the Royal Academy of Engineering, a member of the UK Prime Minister's Council for Science and Technology, was a founding member of the European Research Council and Chair of the European Commission's ISTAG 2010-2012, was a member of the Global Commission on Internet Governance, and until June 2018, was a member of the World Economic Forum's Global Futures Council on the Digital Economy. Dame Wendy was co-Chair of the UK government's AI Review, which was published in October 2017, and has recently been announced by the UK government as the first Skills Champion for AI in the UK.

Abstract:

Artificial Intelligence is set to transform society in the coming decades in ways that have long been predicted by science fiction writers but are only now becoming feasible because of recent developments in computing technology, machine learning and the availability of massive amounts of data on which to train the algorithms. We are still a long way from AI being as powerful as the human brain but many applications can now outperform human beings, particularly when it comes to analysing large amounts of data to predict results. This will lead to many jobs being replaced by automated processes and machines, but as with all major technological revolutions there are also amazing opportunities for the development of new companies and the growth of jobs to help us take advantage of everything that the development of AI might bring to society. In this talk we will talk about how the UK is positioning itself in this brave new smart world in the light of the recent AI Review that has been undertaken as part of the UK government's industrial strategy. But we must also be very aware of the potential threats to society that such developments might bring and the ethical, accountability and diversity issues we need to address. As Alice found when she went through the looking glass, everything is not always what is first appears to be. If we don't lay the groundwork well now, there is huge potential for chaos and confusion in the future as AI starts to become more dominant in all our lives, which is why we need to take a socio-technical approach to every aspect of the evolution of AI in society.

Keynote 6: Smart Communication with Space: Protocols and Mobility

Speaker: Prof. Mohammed Atiquzzaman University of Oklahoma, USA

Chair: Raymond Choo, The University of Texas at San Antonio, USA

10:50-11:30, October 10 (Wednesday)

International Conference Hall (Room 1)

About the Keynote Speaker



Mohammed Atiquzzaman (Senior Member, IEEE) obtained his M.S. and Ph.D. in Electrical Engineering and Electronics from the University of Manchester (UK) in 1984 and 1987, respectively. He currently holds the Edith J Kinney Gaylord Presidential professorship in the School of Computer Science at the University of Oklahoma. Dr. Atiquzzaman is the Editor-in-Chief of Journal of Networks and Computer Applications, the founding Editor-in-Chief of Vehicular Communications, and serves/served on the editorial boards of many journals including IEEE Communications Magazine, Real Time Imaging Journal, International Journal of Communication Networks and Distributed Systems and

Journal of Sensor Networks and International Journal of Communication Systems. He co-chaired the IEEE High Performance Switching and Routing Symposium (2003, 2011), IEEE Globecom and ICC (2014, 2012, 2010, 2009, 2007, 2006), IEEE VTC (2013) and the SPIE Quality of Service over Next Generation Data Networks conferences (2001, 2002, 2003). He was the panels co-chair of INFOCOM'05, and is/has been in the program committee of many conferences such as INFOCOM, Globecom, ICCCN, ICCIT, Local Computer Networks, and serves on the review panels at the National Science Foundation. He is the current Chair of IEEE Communication Society Technical Committee on Communications Switching and Routing.

Dr. Atiquzzaman received IEEE Communication Society's Fred W. Ellersick Prize, and NASA Group Achievement Award for "outstanding work to further NASA Glenn Research Center's effort in the area of Advanced Communications/Air Traffic Management's Fiber Optic Signal Distribution for Aeronautical Communications" project. He is the co-author of the book "Performance of TCP/IP over ATM networks" and has over 270 refereed publications, available at www.cs.ou.edu/~atiq. His current research interests are in areas of transport protocols, wireless and mobile networks, ad hoc networks, satellite networks, power-aware networking, and optical communications. His research has been funded by National Science Foundation (NSF), National Aeronautics and Space Administration (NASA), and U.S. Air Force, Cisco and Honeywell.

Abstract:

Data communications between Earth and spacecrafts, such as satellites, have traditionally been carried out through dedicated links. Smart communication using shared Internet Protocol-based communication offers a number of advantages over dedicated links. The movement of spacecrafts however gives rise to mobility management issues. This talk will discuss various mobility management solutions for extending the Internet connection to smart spacecrafts. The talk will provide an overview of the network layer based solution being developed by the Internet Engineering Task Force and compare with the transport layer based solution that have been developed at University of Oklahoma in conjunction with the National Aeronautics and Space Administration. Network in motion is an extension of the host mobility protocols for managing the mobility of networks which are in motion, such as those in airplanes and trains. The application of networks in motion will be illustrated for both terrestrial and space environment along with security issues related to mobility management schemes.

Keynote 7: User-centric Privacy & Security in the Ubiquitous World

Speaker: Prof. Silvia Giordano, University of Applied Science - SUPSI, Switzerland

Chair: Qi Han, Colorado School of Mines, USA

11:30-12:10, October 10 (Wednesday)

International Conference Hall (Room 1)

About the Keynote Speaker



Prof. Silvia Giordano holds a PhD from EPFL, Switzerland. She is currently the head of the Networking Lab (NetLab) in the Institute of System for Informatics and Networking (ISIN), co-responsible for the Social application area and direction member of ISIN, at the University of Applied Science and Arts - SUPSI in Ticino, Switzerland. Since October 2001, she is an associate researcher at CNR, Pisa. Since 2018 she is ACM Distinguished Members Committee. In 2017 she received the Stars in Computer Networking and Communications of ACM. In 2015, she received the 1000 Talents of Tianjin Municipality. In 2014 she was awarded ACM Distinguished Scientist and became Distinguished professor of the University of Tianjin. In 2013, she became ACM Distinguished Speaker. She is co-editor of the book (IEEE-Wiley 2004), and a new edition, with title (IEEE-Wiley 2013). Her main research interests are Complex and Social Networking, Wireless and Mobile Ad Hoc Networks, Opportunistic Computing and Networking, Human Mobility, Pervasive Computing and Networking, Quality of Service and Traffic Control. She has published extensively on journals, magazines and conferences in the areas of quality of services, traffic control, wireless and mobile ad hoc networks, and her H-Index is 36.

She is series editor of several important publications in her areas of interest. She is in the organization of the major conferences in her areas of interest and is co-founder/steering committee member of several important international events and is/was on the executive committee and TCP of the most relevant international conferences. She is a senior member of ACM, IEEE Computer Society, and IFIP WG 6.8. She is in the Board of the ACM N2Women.

Abstract:

Ubiquitous Intelligence and Computing is creating a new service-rich world. However, it is also opening new paths for data leakage, data breach, and data phishing. We need to take a fresh look at the data privacy space by considering a user-centric approach. It has to be user-centric by considering user behaviours and the user context in order to teach them to improve security and privacy, and realize so privacy preserving data collection and processing. It has also to increase users awareness, data transparency and control. Users need to be informed about the data that are being collected in a user-friendly manner, and must have the option to oppose to them. This further generate a problem of Quality-of-Service, as in many scenarios there is a trade-off between guaranteeing privacy and performance. We are going to analyze some scenarios and possible solutions, and discuss how this can impact on our society.

Keynote 8: Digital Twin: The Convergence of Multimedia Technologies

Speaker: Prof. Abdulmotaleb El Saddik, University of Ottawa, Canada

Chair: Kouichi Sakurai, Kyushu University, Japan

08:30-09:10, October 11, 2018 (Thursday)

Wenhua Hall (Room 2)

About the Keynote Speaker



Abdulmotaleb El Saddik (M01 SM04 F09), is Distinguished Professor and University Research Chair in the School of Electrical Engineering and Computer Science at the University of Ottawa. He completed his Dipl.-Ing. and Dr.-Ing. from the Technische Universität Darmstadt, Germany. He is the director of the Multimedia Communications research Laboratory and the Medical Devices Innovation Institute. Dr. El Saddik is an internationally-recognized scholar who has made strong contributions to the knowledge and understanding of multimedia computing, communications and applications. He is a leading haptics expert, with global recognition for his development of new technologies for real-time multisensory-based identification of humans (biometrics), synchronization of

haptics, audio and visual data, Quality of Experience models for multisensory environments, and methods that dynamically compute the confidence levels of sensory data in a collaborative environment. His work looks toward the establishment of Digital Twins using AI, AR/VR and Tactile Internet that allow people to interact in real-time with one another as well as with their digital representation. He has been extremely productive of high-quality research and impact. He is the author of more than 500 peer-reviewed articles and five patents. He is the author of the book *Haptics Technologies: Bringing Touch to Multimedia*. Dr. El Saddik is a Fellow of the IEEE, the Canadian Academy of Engineering and the Engineering Institute of Canada. He received several awards, including the Friedrich Wilhelm Bessel Award from the German Humboldt Foundation and the IEEE Instrumentation and Measurement Society Technical Achievement Award. He also received IEEE Canada C.C. Gotlieb (Computer) Medal and A.G.L. McNaughton Gold Medal for important contributions to the field of computer engineering and science.

Abstract:

A digital twin is a digital replication of a living or non-living physical entity. By bridging the physical and the virtual worlds, data is transmitted seamlessly allowing the virtual entity to exist simultaneously with the physical entity. A digital twin facilitates the means to monitor, understand, and optimize the functions of the physical entity and provides continuous feedback to improve quality of life and wellbeing. In this talk, we will discuss the convergence of multimedia technologies (AR/VR, AI, IoT, Wearables, BigMM Data and 5G-Tactile Internet) towards the digital twin. We will conclude by describing the challenges and the open research questions.

Keynote 9: Multi-Agent Systems with Reinforcement Learning

Speaker: Prof. Fuhua (Oscar) Lin, Athabasca University, Canada
Chair: Hao Wang, Norwegian University of Science & Technology, Norway
09:10-09:50, October 11, 2018 (Thursday)
Wenhua Hall (Room 2)

About the Keynote Speaker



Fuhua Lin is a professor in computing and information systems, Faculty of Science and Technology at Athabasca University, Canada.

His main research interests are: intelligent systems, multiagent systems, game theory, virtual reality, machine learning, online learning technologies and online scheduling. He has published more than 100 papers in international journals, proceedings of international conferences, books, and book chapters.

Dr. Lin obtained his PhD in Virtual Reality from the Hong Kong University of Science and Technology in 1998. Prior to working in Athabasca University, Dr. Lin was a Research Officer of Institute for Information Technology of National Research Council (NRC) of Canada. Dr. Lin did post-doc research at University of Calgary during 1998-1999.

Dr. Lin has acted as Principal and co-Principal Investigator on two NSERC Discovery Grants, two NSERC Engage grants, one Canada Foundation for Innovation (CFI) fund of Canada. He served as the Co-Editor-In-Chief and Editor-In-Chief of International Journal of Distance Education Technologies (IJDET) during 2009-2013. Dr. Lin got Leaders Opportunity Fund Award from CFI in 2009, Craig Cunningham Mentoring and Teaching Excellence (CCMATE) Award, from Athabasca University in 2012, and a best paper award at IEEE Computer Science and Engineering (CSE) 2014. Dr. Lin is a member of AAI, ACM, IEEE, AIED, and CAIAC.

Abstract:

Distributed competitive decision making, as opposed to centralized planning, is emerging as the norm in networked systems which involve repeatedly making decisions in an uncertain environment.

In this keynote presentation I will present Multi-Agent Systems with Reinforcement Learning for decision-making for such systems, taking into account rationally selfish behavior of the connected agents/minds. In such environments, agents need to consider how to compete for scarce resources, trade, negotiate automatically, learn from each other, and form social organizations. In particular, I will discuss multi-armed bandit (MAB) learning algorithms. Unlike standard black-box and big-data based machine learning tools, MAB algorithms are active learning, which refers to algorithms that actively select data they should receive, and online learning, which refers to algorithms that analyze data in real-time and provide results on the fly. I will present MAB two real-world applications: Online Scheduling in Oil and Gas Industry and Vehicle Routing for Driverless Cars in Smart City.

Keynote 10: Privacy-preserving in Crowdsensing Systems

Speaker: Prof. Wanlei Zhou University of Technology Sydney, Australia

Chair: Kevin I-Kai Wang, The University of Auckland, New Zealand

09:50-10:30, October 11, 2018 (Thursday)

Wenhua Hall (Room 2)

About the Keynote Speaker



Professor Wanlei Zhou received the B.Eng and M.Eng degrees from Harbin Institute of Technology, Harbin, China in 1982 and 1984, respectively, and the PhD degree from The Australian National University, Canberra, Australia, in 1991, all in Computer Science and Engineering. He also received a DSc degree (a higher Doctorate degree) from Deakin University in 2002. He is currently the Head of School of Software in University of Technology Sydney (UTS). Before joining UTS, Professor Zhou held the positions of Alfred Deakin Professor, Chair of Information Technology, and Associate Dean (International Research Engagement) of Faculty of Science, Engineering and Built Environment, Deakin University. Professor Zhou has been the Head of School of Information Technology twice (Jan 2002-Apr 2006 and Jan 2009-Jan 2015) and Associate Dean of Faculty of Science and Technology in Deakin University (May 2006-Dec 2008). Professor Zhou also served as a lecturer in University of Electronic Science and Technology of China, a system programmer in HP at Massachusetts, USA; a lecturer in Monash University, Melbourne, Australia; and a lecturer in National University of Singapore, Singapore. His research interests include security and privacy, bioinformatics, and e-learning. Professor Zhou has published more than 400 papers in refereed international journals and refereed international conferences proceedings, including many articles in IEEE transactions and journals.

Abstract:

In recent years, the widespread prevalence of smart devices has created a new class of mobile and Internet of Thing applications. Called mobile crowdsensing, these techniques use workers with mobile devices to collect data and send it to task requester for rewards. However, to ensure the optimal allocation of tasks, a centralized server needs to know the precise location of each user, but exposing the workers' exact locations raises privacy concerns. In this presentation, we propose two solutions for privacy-preserving in crowdsensing systems. We first propose a privately data release mechanism for crowdsensing techniques that satisfies differential privacy, providing rigorous protection of worker locations. The partitioning method is based on worker density and considers non-uniform worker distribution. We then propose a private Blockchain based method for task payment that effectively preserves individual privacy in the entire crowdsensing system.

Keynote 11: Path-oriented Reachability Checker of Linear Hybrid Automata

Speaker: Prof. Xuandong Li, Nanjing University, China

Chair: Saqib Ali, Guangzhou University, China

10:50-11:30, October 11, 2018 (Thursday)

Wenhua Hall (Room 2)

About the Keynote Speaker



Xuandong Li received the BS, MS and PhD degrees from Nanjing University, China, in 1985, 1991 and 1994, respectively. He is a full professor in Department of Computer Science and Technology, Nanjing University.

His research interests include formal support for design and analysis of reactive, distributed, real-time, hybrid, and cyber-physical systems, and software testing and verification.

Abstract:

Hybrid system is a class of systems containing both discrete and continuous components. It has several discrete working modes and in each mode the physical parameters will change continuously according to time. There are many practical examples, for example Embedded System Controller, VLSI circuits and even System Biology. Most of the systems appear in Safety Critical Area. Therefore, it is crucial to conduct formal verification of such system to prove the correctness of such system.

The model checking problem for hybrid systems is very difficult. Even for a relatively simple class of hybrid systems, linear hybrid automata (denoted as LHA), the reachability analysis problem is undecidable. Bounded model checking (BMC) is a feasible way for the reachability verification of LHA, but it is difficult too. Typically, the BMC problem is solved by SMT technique. It encodes the bounded state space of the LHA into a set of SMT formulas at first. When the system size is large, the object problem will become huge, which greatly restricts the size of problem that can be solved.

In this talk, we review our LHA checker: BACH, which handles the BMC problem of LHA in a specific path-oriented way. Instead of encoding the bounded state space into one problem, BACH checks the reachability specification along one abstract path in the LHA at a time efficiently. As the number of paths under given bound is finite, all candidate paths can be enumerated and checked one by one to answer the BMC problem. In order to increase the efficiency, BACH supports an infeasible path segment analysis and pruning procedure to shrink the state space that is needed to check. Furthermore, if the collected infeasible path segments can block the target location from the initial one, the bounded argument can be even extended to the complete unbounded state space. Such method is also extended to the area of compositional LHA network, and nonlinear HA. All these techniques are implemented in BACH. Experiments show that by this path-oriented approach, the memory usage of the BMC of LHA is well-controlled.

Keynote 12: Machine Intelligence in Geo-Distributed Systems: From Cloud to Edge

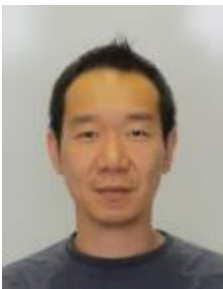
Speaker: Prof. Song Guo, The Hong Kong Polytechnic University

Chair: Md. Zakirul Alam Bhuiyan, Fordham University, USA

11:30-12:10, October 11, 2018 (Thursday)

Wenhua Hall (Room 2)

About the Keynote Speaker



Song Guo is a Full Professor at Department of Computing, The Hong Kong Polytechnic University. His research interests are mainly in the areas of big data, cloud computing and networking, and distributed systems. His work was recognized by the 2016 Annual Best of Computing in ACM Computing Reviews. He is the recipient of the 2017 IEEE Systems Journal Annual Best Paper Award and other five Best Paper Awards from IEEE/ACM conferences. Prof. Guo was an Associate Editor of IEEE TPDS and an IEEE ComSoc Distinguished Lecturer. He is now on the editorial board of IEEE TCC, IEEE TETC, IEEE TSUSC, IEEE TGCN, IEEE Network, etc. Prof. Guo also served as General and TPC Chair for numerous IEEE conferences. He currently serves as a Director and Member of the Board of Governors of ComSoc.

Abstract:

When accessing cloud-hosted modern applications, users often suffer a significant latency due to the long geo-distance to the central cloud. Edge computing thus emerges as an alternative paradigm that can reduce this latency by deploying services close to users. In this talk, we will analyze the methodology and limitations of popular approaches for supporting AI services on geo-distributed systems along the evolution from cloud computing to edge computing. In particular, we shall discuss how to deal with different sets of challenges in training and inference, the two phases of machine learning based applications, over heterogeneous geo-distributed systems. We shall also present our recent studies on data driven resource management among networked collaborative edges.

Panel-1: Big Data, AI and Applications

Zhujiang Hall (Room 3), 3:50 p.m. – 6:30 p.m. October 9, 2018

Big data is a term used to refer to the study and applications of data sets that are so big and complex that traditional data-processing application software are inadequate to deal with them. AI plays key role in the big data processing, transmission, and applications. Big data and AI are also big challenges in computer sciences. In this panel, we are delighted to have distinguished panelists share their versions on the research directions and challenges in big data, AI, and applications followed by open discussions.

Chairs: Jiannong Cao, The Hong Kong Polytechnic University, Hong Kong
Jie Li, Shanghai Jiaotong University, China

Panelists: Weijia Jia, University of Macau, Macau
Xiaohua Jia, City University of Hong Kong, Hong Kong
Qun Jin, Waseda University, Japan
Qing Li, City University of Hong Kong, Hong Kong
Junzhou Luo, Southeast University, China
Geyong Min, University of Exeter, UK
Chengzhong Xu, Shenzhen Inst. of Advanced Tech. of Chinese Academy of Sciences

Statements:

Cross-Domain Big Data Fusion and Analytics (Jiannong Cao)

Big data analytics using cross-domain multi-source datasets allow us to study the phenomena of our interest by fusing views from multiple angles, facilitating us to identify meaningful problems and discover new insights. However, we need methods and techniques to solve the challenges like heterogeneity, uncertainty and high dimensionality in analyzing cross-domain datasets. In this talk, I will describe a general framework of cross-domain big data analytics and share our work of fusing and analyzing datasets from multiple domains to uncover the underlying patterns, correlations and interactions. Example applications include human and urban dynamics like predicting traffic congestions, optimize demand dispatching in emerging on-demand services, and designing wireless networks.

Smart City Research at the University of Macau (Weijia Jia)

We would like to introduce the research status on smart city at the University of Macau. Especially the newly set up of state key lab and their research activity.

Privacy-Preserving Service Matching Platforms on Public Clouds (Xiaohua Jia)

As smart phones and other mobile devices are popularly used nowadays, users can use mobile phone to subscribe services, as well as publish services they would like to offer. There are many platforms to facilitate users to publish or subscribe their services over the Internet. Most of such platforms are hosted on public clouds where security and privacy is a major concern of users. It's essential to make the trading platforms secure and privacy-preserving for users. In this talk, we first present pMatch: a privacy-preserving task matching scheme for crowdsourcing systems. With pMatch, task requesters encrypt the information of tasks and publish the encrypted task to the platform, and workers encrypt their interests and submit them to the platform for task subscription. The platform can match the tasks to the most suitable workers over the encrypted data. Thus, no private information about either the

tasks or the workers is leaked to the cloud server. Then, we present pRide: a privacy-preserving ride-hailing system. With pRide, both riders and drivers submit their encrypted location information to the platform, and the platform is able to match a rider with its closest driver without learning any location information of either the rider or the drivers.

Personal analytics and individual modeling for data-driven & AI-enhanced healthcare (Qun Jin)

In this talk, after briefly introducing the basic concept of data-driven and AI-enhanced healthcare, our vision and work on personal analytics and individual modeling for smart health to enhance quality of life (QoL) and promote well-being for all of the people will be described and explained. Furthermore, quality control and sustainable use of health data as well as opportunities and issues of data-driven smart health will be addressed and discussed.

Event Management and Multi-dimensional Analysis through EC Mechanism (Qing Li)

The last 3 decades have witnessed the big changes of data types, scales, and links with neighboring areas, from simple data with closed-world assumption to more complex objects with semi-closed/open assumption, from MB/GB/PB scale to PB/TB/EB/ZB scale, and from loose coupling to tight coupling with areas like Programming, Cloud Computing, IoT, and AI (machine learning in particular). In this talk, I will discuss several aspects of data management from a historical perspective, and through a joint collaboration we initiated, elaborate on the recent and complex types of data like (multi-modal) events for management. In particular, I will start with overviewing techniques of discovering events from multi-modal big data, and elaborate on building an event cube (EC) model to support event queries and analysis. Based on the essential event elements of 5W1H, the discovered events can be organized w.r.t. the dimensions and operated at various levels of granularity through the EC model. In addition, this model greatly facilitates analyzing and mining hidden/inherent relationships among the events, thereby enabling the system to answer the challenging questions of "how" and "why", thereby facilitating the analysis and mining of hidden/inherent relationships among the events effectively.

Industrial Transparent Computing: Architecture and Key Technologies (Junzhou Luo)

The industrial internet is a highly cooperative global network, which connects machines and humans together for smart manufacturing. While smart manufacturing heavily relies on intelligent, speedy and secure control, novel computing paradigms that support real-time decision with secure execution have garnered much attention from the industrial internet research community. This talk introduces industrial transparent computing (ITC), a promising paradigm for the industrial internet. With ITC, industrial control programs are stored by ITC servers but executed by industrial terminals, hence it can be viewed as a special application scenario of transparent computing. ITC offers a high level of security and reduces complexity and cost of terminals. Moreover, ITC smoothly coordinates the computation and communications between ITC servers and industrial terminals through intelligent optimization, in order to achieve real-time decision and control. In this talk, I will introduce ITC's architecture, elaborate the opportunities and challenges of transparent computing in the industrial environments, and at last, identify future research directions.

Network Big Data Analysis for Future Intelligent Internet (Geyong Min)

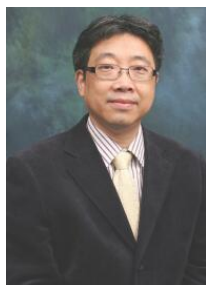
Research and development of Next-Generation Internet (NGI) have become a global endeavour. With an overwhelming amount of data pouring into the Internet, network domains are embracing an unprecedented wave of traffic flows and are stepping into the era of network big data. To achieve high performance and high availability of NGI, our vision is to conduct efficient data analysis in order to dig valuable insights and knowledge hidden in network big data for improving the design, operation, and management of NGI. We will present the innovative big data processing technologies, real-time incremental data analysis tools, and cost-effective distributed platform we have recently developed to

support better decision-making for network design, anomaly detection, fault localization, resource management and optimization.

Intelligent Scheduling and QoS-aware Resource Management based on Machine Learning (Chengzhong Xu)

Scheduling and resource management is a key to success of cloud datacenter. Today's cloud DC is characteristic of deep heterogeneity in nodal architecture and group dynamics in workloads. Applications tend to be deployed in a mixed way between online and offline jobs. Traditional scheduling and resource management become hard to meet the requirements for efficiency, job completion time, and fairness in a fine-grained manner. Machine learning is by nature able to deal with uncertainty. The non-deterministic setting of Cloud DCs renders ML plausible. The vast log data accumulated in the management of cloud DCs paves a way for deep learning approaches. This talk will discuss the opportunities and challenges of ML for the management of cloud DCs. Our past experience will be presented as well.

Biographies:



Jiannong Cao

The Hong Kong Polytechnic University, Hong Kong

Dr. Cao is currently a Chair Professor of Department of Computing at The Hong Kong Polytechnic University, Hong Kong. He is also the director of the Internet and Mobile Computing Lab in the department and the director of University's Research Facility in Big Data Analytics.

Dr. Cao served the Chair of the Technical Committee on Distributed Computing of IEEE Computer Society 2012-2014, a member of IEEE Fellows Evaluation Committee of the Computer Society and the Reliability Society, a member of IEEE Computer Society Education Awards Selection Committee, a member of IEEE Communications Society Awards Committee, and a member of Steering Committee of IEEE Transactions on Mobile Computing. Dr. Cao has served as chairs and members of organizing and technical committees of many international conferences, and as associate editor and member of the editorial boards of many international journals, including IEEE TPDS, IEEE TCC, IEEE TC, IEEE Network, ACM TOSN, Elsevier Pervasive and Mobile Computing Journal. Dr. Cao is a fellow of IEEE and ACM distinguished member. In 2017, he received the Overseas Outstanding Contribution Award from China Computer Federation.

Jie Li

Shanghai Jiaotong University, China



Jie Li is a Chair Professor of Department of Computer Science and Engineering, Shanghai Jiaotong University, Shanghai, China. His current research interests are in big data, cloud computing, mobile distributed computing and networking, network security, OS, modeling and performance evaluation of information systems. He was a full professor in Department of Computer Science, University of Tsukuba, Japan. He was a visiting Professor in Yale University, USA, Inria Sophia Antipolis and Inria Grenoble-Rhone-Aples, France. He is the co-chair of IEEE Big Data Technical Community and the founding Chair of IEEE ComSoc Technical Committee on Big Data and the Co-Chair of IEEE Big Data Community. He serves as an associated editor for many IEEE journals and transactions. He received

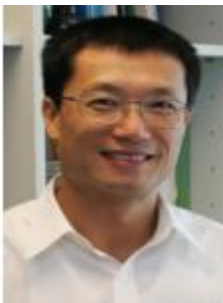
the B.E. degree in computer science from Zhejiang University, Hangzhou, China, the M.E. degree in electronic engineering and communication systems from China Academy of Posts and Telecommunications, Beijing, China. He received the Dr. Eng. degree from the University of Electro-Communications, Tokyo, Japan.



Weijia Jia

University of Macau, Macau

Weijia Jia is currently a Chair Professor at University of Macau while he is taking no-pay leave from the position of Zhiyuan Chair Prof from Shanghai Jiaotong University, China (he received 2013 China 1000 Talent Award). He received BSc/MSc from Center South University, China in 82/84 and Master of Applied Sci./PhD from Polytechnic Faculty of Mons, Belgium in 92/93, respectively, all in computer science. For 93-95, he joined German National Research Center for Information Science (GMD) in Bonn (St. Augustine) as research fellow. From 95-13, he worked in City University of Hong Kong as a full professor in Computer Science Dept. His research interests include smart city; next generation IoT, knowledge graph constructions; multicast and anycast QoS routing protocols, wireless sensor networks and distributed systems. He has over 400 publications in the prestige international journals/conferences and research books and book chapters (H-index 46 as at 2018). He received Best Product Awards from the International Science&Technology Expos (Shenzhen) in 2011/2012 and 1st- Prize of Scientific Research Awards from Ministry of Education of PR China in 2017 (list 2). He has served as area editor for various prestige international journals, chair and PC member/keynote speaker for many prestige international conferences.



Xiaohua Jia

City University of Hong Kong, Hong Kong

Xiaohua Jia received his BSc (1984) and MEng (1987) from University of Science and Technology of China, and DSc (1991) in Information Science from University of Tokyo. He is currently Chair Professor with Dept of Computer Science at City University of Hong Kong. His research interests include cloud computing and distributed systems, data security and privacy, computer networks and mobile computing. Prof. Jia is an editor of IEEE Internet of Things, IEEE Trans. on Parallel and Distributed Systems (2006-2009), Wireless Networks, Journal of World Wide Web, Journal of Combinatorial Optimization, etc. He is the General Chair of ACM MobiHoc 2008, TPC Co-Chair of IEEE GlobeCom 2010 – Ad Hoc and Sensor Networking Symp, Area-Chair of IEEE INFOCOM 2010, 2015-2017. He is Fellow of IEEE.



Qun Jin

Waseda University, Japan

Qun Jin is a professor at the Networked Information Systems Laboratory, Department of Human Informatics and Cognitive Sciences, Faculty of Human Sciences, Waseda University, Japan. Dr. Jin has been extensively engaged in research works in the fields of computer science, information systems, and social and human informatics. He seeks to exploit the rich interdependence between theory and practice in his

work with interdisciplinary and integrated approaches. His recent research interests cover human-centric ubiquitous computing, behavior and cognitive informatics, big data, data quality assurance and sustainable use, personal analytics and individual modeling, intelligence computing, blockchain, cyber security, cyber-enabled applications in healthcare, and computing for well-being. Dr. Jin is a senior member of Association of Computing Machinery (ACM), Institute of Electrical and Electronics Engineers (IEEE), and Information Processing Society of Japan (IPSJ).



Qing Li
City University of Hong Kong, Hong Kong

Qing Li is a Professor at the Department of Computer Science, and the Director of the Engineering Research Centre on Multimedia Software at the City University of Hong Kong, where he joined as a faculty member since Sept 1998. He received his B.Eng. from Hunan University (Changsha), and M.Sc. and Ph.D. degrees from the University of Southern California (Los Angeles), all in computer science. His research interests include multi-modal data management, conceptual data modeling, social media and Web services, and e-learning systems. He has authored/co-authored over 300 publications in these areas. He is actively involved in the research community and has served as an associate editor of a number of major technical journals including IEEE Transactions on Knowledge and Data Engineering (TKDE), ACM Transactions on Internet Technology (TOIT), Data and Knowledge Engineering (DKE), World Wide Web (WWW), and Journal of Web Engineering, in addition to being a Conference and Program Chair/Co-Chair of numerous major international conferences. He also sits in the Steering Committees of DASFAA, ACM RecSys, IEEE U-MEDIA, ER, and ICWL. Prof. Li is a Fellow of IET (UK), a senior member of IEEE (US) and a distinguished member of CCF (China).



Prof. Junzhou Luo
Southeast University, China

Dr. Junzhou Luo received his B.S. degree in applied mathematics from Southeast University in 1982, and then got his M.S. and Ph.D. degree in computer networks from Southeast University in 1992 and in 2000 respectively. From 1982 he has been a faculty member at the School of Computer Science and Engineering, Southeast University. His research interests include network architecture, protocol engineering, network security, cloud computing and big data. In the past 30 years, he finished 35 research projects supported by Natural Science Foundation of China and the other China national or Jiangsu Provincial science and technology programs, and published over 450 journal and conference papers on computer networks. He has participated in the AMS physics experiment 14 years led by Professor Samuel C. C. Ting, the Nobel Prize Laureate in physics, and has set up AMS Science Operation Center at Southeast University for the AMS data processing. Now he is a professor and the dean of the School of Computer Science and Engineering, Southeast University. He is IEEE member and ACM member, and he is Co-Chair of IEEE SMC Technical Committee on Computer Supported Cooperative Work in Design and the Chair of ACM SIGCOMM China.



Geyong Min
University of Exeter, UK

Professor Geyong Min is a Chair in High Performance Computing and Networking and the academic lead of Computer Science in the College of Engineering, Mathematics and Physical Sciences at the University of Exeter, UK. His recent research has been supported by European Horizon-2020, FP6/FP7, UK EPSRC, Royal Society, Royal Academy of Engineering, and industrial partners including British Telecom, IBM, Huawei Technologies, INMARSAT, Motorola, and InforSense Ltd. His research interests include Future Internet, Wireless Networks, Mobile and Ubiquitous Computing, Cloud Computing, High Performance Computing, and Big Data. He has published more than 200 research papers in leading international journals including IEEE/ACM Transactions on Networking, IEEE Journal on Selected Areas in Communications, IEEE Transactions on Communications, IEEE Transactions on Wireless Communications, IEEE Transactions on Multimedia, IEEE Transactions on Computers, IEEE Transactions on Parallel and Distributed Systems, and at reputable international conferences, such as SIGCOMM-IMC, ICDCS, IPDPS, GLOBECOM, and ICC. He is an Associated Editor of several international journals, e.g., IEEE Transactions on Computers, and IEEE Transactions on Cloud Computing. He served as the General Chair/Program Chair of a number of international conferences in the area of Information and Communications Technologies.



Chengzhong Xu
Shenzhen Institutes of Advanced Technology of Chinese Academy of Sciences, China

Chengzhong Xu, IEEE Fellow, is the Director and Chief Scientist of the Institute of Advanced Computing and Digital Engineering, Shenzhen Institutes of Advanced Technology of Chinese Academy of Sciences. He is also the Director of Cloud Security Engineering Center of Guangdong Province. He was in the faculty of Wayne State University. His research interest is mainly in distributed and parallel systems, cloud computing and big data applications, and data-driven intelligence, with an emphasis on resource management for performance, availability, reliability, energy efficiency, and security. He published more than 250 papers in journals and conferences in these areas and received more than 8500 citations with H-index of 46. He was the author of book “Scalable and Secure Internet Services and Architecture” (Chapman & Hall/CRC Press, 2005) and the leading co-author of book “Load Balancing in Parallel Computers: Theory and Practice” (Kluwer Academic/Springer, 1997). He received the Best Paper Nominee Award of HPCA’2012, HPDC’2013, Cluster’2016, and ICPP’2015. He served on a number of journal editorial boards, including IEEE Transactions on Computers, IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on Cloud Computing, Journal of Parallel and Distributed Computing, and China Science. He is the Chair of IEEE Technical Committee on Distributed Processing. He was a recipient of Career Development Chair Award, and the President’s Award for Excellence in Teaching of WSU. He was also a recipient of the “National Thousands Talent Program” (千人计划) “Outstanding Young Oversea Chinese Scholar”(海外杰青) award. He received his B.S. and M.S. degrees from Nanjing University in 1986 and 1989, respectively, and his Ph.D. degree from the University of Hong Kong in 1993, all in Computer Science. For more information, visit <http://www.ece.eng.wayne.edu/~czxu>.

Panel-2: Future Computing in Smart World

International Conference Hall (Room 1), 9:10 p.m. – 10:30 p.m. October 10, 2018

Due to the information intensive nature of many services required in the smart world, information technology, especially those aspects heavily relying on computing, will continue to be vital in building the smart world. Recent advances in areas, such as big data, multimedia, machine learning, language processing, as well as powerful and intelligent computing systems, ranging from large-scale cloud systems to mobile intelligent devices, and Internet of Things, have shown significant progress in meeting the challenges of providing the desirable services in the smart world. Furthermore, quality of services, such as security, privacy, dependability and adaptability, need to be incorporated in the services with human-centric characteristics in the smart world environment. In doing so, some existing research areas, such as applications of neuron networks and blockchains, have emerged as promising approaches to addressing certain challenging problems in the smart world due to the recent major progress made in other areas such as big data, algorithms, computing systems, networking, and sensing. In this panel session, we have four distinguished panelists with different research and practical background in computing will discuss the future research directions of computing in the smart world in their opening remarks, followed by open discussions from the floor.

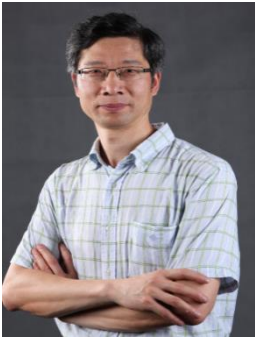
Chair: Stephen S. Yau, Arizona State University, USA

Panelists: Xin Yao, University of Birmingham, UK and
Southern University of Science and Technology, China
Mazin Yousif, Digital Transformation at T-Systems, International, USA
Wendy Hall, University of Southampton, UK
Abdulmotaleb El Saddik, University of Ottawa, Canada



Stephen S. Yau
Arizona State University, USA

Stephen S. Yau is Professor of Computer Science and Engineering at Arizona State University (ASU), Tempe, Arizona, USA. He served as the chair of the Department of Computer Science and Engineering, and later as the director of Information Assurance Center at ASU. Previously, he was on the faculties of Northwestern University, Evanston, Illinois, and University of Florida, Gainesville. He served as the president of the Computer Society of the Institute of Electrical and Electronics Engineers (IEEE) and the editor-in-chief of IEEE COMPUTER magazine. He organized many major conferences, including the 1989 World Computer Congress sponsored by the International Federation for Information Processing (IFIP), and the 2018 IEEE World Congress on Services in July, 2018. His current research includes cloud and services computing, cyber security, software engineering, ubiquitous computing and Internet-of-Things. He has received many awards and recognitions, including the Tsutomu Kanai Award and Richard E. Merwin Award of the IEEE Computer Society, and the Outstanding Contributions Award of the Chinese Computer Federation. He is a Life Fellow of the IEEE and a Fellow of the American Association for the Advancement of Science. He received the Ph.D. degree from the University of Illinois, Urbana in electrical engineering.



Xin Yao

University of Birmingham, UK and Southern University of Science and Technology, China

Xin Yao is a Chair Professor of Computer Science at the Southern University of Science and Technology, Shenzhen, China, and a part-time Chair Professor at School of Computer Science, the University of Birmingham, UK. His major research interests include evolutionary computation, ensemble learning and search-based software engineering. His work won the 2001 IEEE Donald G. Fink Prize Paper Award, 2010, 2016 and 2017 IEEE Transactions on Evolutionary

Computation Outstanding Paper Awards, 2010 BT Gordon Radley Award for Best Author of Innovation (Finalist), 2011 IEEE Transactions on Neural Networks Outstanding Paper Award, and many other best paper awards. He received the prestigious Royal Society Wolfson Research Merit Award in 2012 and the IEEE CIS Evolutionary Computation Pioneer Award in 2013.



Mazin Yousif

Digital Transformation at T-Systems, International, USA

Mazin Yousif is the Vice President of Digital Transformation at T-Systems, International. Before that, he with IBM Canada, Avirtec, Intel and IBM. He is the founding editor-in-chief of the IEEE Cloud Computing Magazine. He chaired the Advisory Board of the European Research Consortium for Informatics and Mathematics (ERCIM), and founded the NSF

Industry/University Cooperative Research Center on Automatic Computing with three Universities (Florida, Arizona & Rutgers). He was an adjunct professor in several universities, including Duke and North Carolina State Universities. He has served as the General Chair or Program Chair for many conferences and serves on the editorial board of many journals.



Dame Wendy Hall

University of Southampton, UK

Dame Wendy Hall, DBE, FRS, FEng is Regius Professor of Computer Science, Pro Vice-Chancellor (International Engagement) at the University of Southampton, and is the Executive Director of the Web Science Institute.

More about her, see page 28.



Zhi Jin

Peking University, China

Dr. Zhi Jin is currently a professor of Computer Science at Peking University. She is deputy director of Key Lab of High Confidence Software Technologies (Ministry of Education) at Peking University. She worked at the Academy of Mathematics and System Sciences, Chinese Academy of Science from 1994 to 2009. Dr. Jin's research interests include software engineering, requirements

Engineering, knowledge engineering, and machine learning. She is/was principle investigator of over 10 national competitive grants, including the chief scientist of a national basic research project (973 project) of the Ministry of Science and Technology of China.

Panel-3: Cyber-Physical-Social Sensing for the Future Smart World

Qiutang Hall (Room 5), 3:50 p.m. – 6:30 p.m. October 10, 2018

Sensing is the ability of any living beings to collect data and perceive the physical world. It is the foundation of knowledge acquisition and formation of intelligence. With the advancement of information and communication technologies, the notion of sensing grows beyond the physical world with data coming from cyber world. Advanced technologies such as social and crowd computing, smart wearables and implants, cognitive computing, and brain informatics, while achieving fruitful results in their own arena, also bring tremendous challenges on the interoperability, scalability, dependability, security and privacy for different Smart World applications. The heterogeneous and transdisciplinary nature of modern Cyber-Physical-Social sensing need to be addressed carefully to facilitate the development of the future Smart World, which aims to provide intelligent, interactive, collaborative and safe services to human beings. In this session, we have six distinguished panellists who will offer their insights on fusing, interpreting, reasoning, security and privacy preservation aspects of the Cyber-Physical-Social sensing for the future Smart World.

Chair: Kevin I-Kai Wang, The University of Auckland, New Zealand

Panelists: Liming Chen, De Montfort University, UK
Paolo Nesi, University of Florence, Italy
Kim-Kwang Raymond Choo, The University of Texas at San Antonio, USA
Richard Hill, University of Huddersfield, UK
Md Zakirul Alam Bhuiyan, Fordham University, USA
Hao Wang, Norwegian University of Science and Technology, Norway

Statements:

Sensing and Sensibility Making Sense of Sensing for Smart World (Liming Chen)

The physical world is increasingly full of the internet of things, objects and devices, embedded systems which are generating various data. The cyber world is increasingly full of powerful algorithms which can consume large-scale data, and yet the social and human world are still searching intelligent systems which can support a disruptive way we live, do business, communicate and recreate. While new approaches and modalities of sensing is emerging, producing ever-growing data in terms of volume, diversity and speed, making sense of sensing to support the higher level of intelligence of a plethora of smart systems within smart world is still a challenge. In this talk the speaker will examine the unique characteristics of smart world and ensuing demand on sensing and sensibility. Then he will present his thinking and directions to the way forward, which are aimed at stimulating and enlightening new ideas and approaches in the follow-up panel discussions.

Complexity of IOT/IOE Architectures for Smart Service Infrastructures (Paolo Nesi)

The complexity of smart and sentient applications in smart cities in progressively increasing. The early smart services are becoming more complex to reach higher precision. The initial approaches based on time series are overcome by artificial intelligent approaches based on big data techniques taking into account of multiple data kind, their heterogeneity, low quality and discontinuity, etc. A new degree of complexity has reached smart cities with IOT/IOE demand and corresponding technologies. The integration of open data, real time data and private personal data has also increased complexity of cyber-physical-social aspects, in which the city users are going to have the full control on the rights associated to their content. In Europe, the new GDPR normative has also contributed to regulate the

access and control. In the panel Paolo Nesi is contributing by bringing the experience of building a number of smart city solution and platform exploiting the new technologies and coping with GDPR challenge in the area.

The Dark Side of Cyber-Physical-Social Sensing (Kim-Kwang Raymond Choo)

With an ever increasing source of data (e.g. from devices around us, devices on us, and devices in us), what are the potential security and privacy risks? For example, can devices on or in us tell on us, and if so, how so? In this panel discussion, I will briefly discuss some of the potential security and privacy risks of cyber-physical-social sensing.

Analytics for Smart Cities: some emerging challenges (Richard Hill)

As the potential for inter-connectedness between things and services becomes better understood, there are an increasing number of use cases being developed. All of these use cases require measurement and monitoring so that resources can be deployed effectively and exploited appropriately. Not only can we see that there are challenges for existing and planned uses of smart city technologies, but researchers are faced with the emerging scenarios that demand not only monitoring, but the use of more sophisticated models that may also incorporate dynamic augmentations to the knowledge bases. This talk examines key challenges for current and future demands of analytics services and proposes some potential research questions for further exploration.

Dependable Privacy Controls in Data Mining in Cyber-Physical-Social Sensing for the Future Smart World (Md Zakirul Alam Bhuiyan)

Cyber-Physical-Social Sensing (CPSS) can easily be a point of attraction for the cyber-attackers. Advanced technologies such as social and crowd computing bring tremendous challenges on the dependability in privacy controls in data mining for different Smart World applications. The data used for data mining may have privacy breached even before the data goes through the data mining process, i.e., data privacy may be compromised at the time of data collection, after the collected data forwarding or before the decision making through the data mining, resulting in decision-making on an event of interest in the CPSS undependable. This leads to a question, in terms privacy preservation, what would be the quality of the data mining in the CPSS and the decision made through it. The heterogeneous and transdisciplinary nature of modern CPSS needs to address this carefully in order to preserve privacy in different stage of data mining process. In the panel, I will highlight a set of observations similar to the situation above and discuss potential solutions to deal with the situations of the CPSS for the future Smart World.

Security in Crowd Sensing and Industrial IoT (Hao Wang)

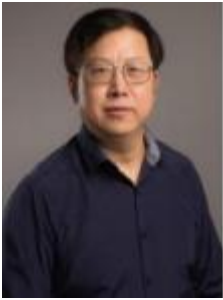
Crowdsensing is a technique leveraging the crowd power to accomplish sensing tasks collaboratively at a low cost. There are a lot of benefits in introducing crowdsensing to Industrial IoT (IIoT). With the proliferation of wireless sensor devices, the security of transmitting data in such IIoT based crowdsensing networks deserves much attention, especially for the confidential data related with commercial interest and privacy concern. In this talk, I will briefly discuss our recent work for the security in IIoT based crowdsensing networks.



Kevin I-Kai Wang
The University of Auckland, New Zealand

Kevin I-Kai Wang received his BE (Hons) and PhD in Computer Systems and Electrical & Electronics Engineering from the University of Auckland in 2004 and 2009, respectively. He worked as a R&D engineer in different industries for designing intelligent sensing and automation systems before re-join the University in

2012. He is currently a Senior Lecturer at the University of Auckland, New Zealand. His current research focuses on power efficient wireless sensor networks for environmental monitoring, industrial automation, and pervasive healthcare applications; statistical learning and context-aware Internet of Things (IoT) systems; middleware and service-oriented architecture. He has served as a reviewer for several reputable journals including IEEE Transactions on Industrial Informatics, Transactions on Industrial Electronics, Transactions on Computers, Transactions on Service Computing, Sensors; and Elsevier PMC, FGCS and JNCA. He is currently an editorial member for the Journal of Ambient Intelligence and Smart Environments, IET Wireless Sensor Systems and Elsevier Ad Hoc Networks.



Liming Chen
De Montfort University, UK

Liming Chen is Professor of Computer Science, Head of the Context, Intelligence and Interaction Research Group and its associated Smart Lab in the School of Computer Science and Informatics, De Montfort University, UK. His current research interests include activity modelling and recognition, computational behaviour analysis, personalisation and adaptation of human-machine systems, decision support, smart environments and their application in smart homes and ambient assisted living. He is currently the coordinator of the EU Horizon2020 ACROSSING project “Advanced Technologies and Platform for Smarter Assisted Living”, and has served as the principal investigator for the EU AAL PIA project, the MobileSage project and FP7 MICHELANGELO project, and a number of projects funded by industry and third countries. Liming has over 170 peer-reviewed publications in internationally recognised high-profile journals and conferences. He is the general chair or program chair for IEEE UIC2017, IEEE HealthCom2017, SAI Computing 2017, and IEEE UIC2016 and an organising chair of many workshops such as Romart-City2016, associate editor of IEEE THMS, assistant EIC for IJPC and guest editors for IEEE THMS, PMC and IJDSN. Liming is a member of IEEE, IEEE SMC and the ETTC Task Force on Smart World.



Paolo Nesi
University of Florence, Italy

Paolo Nesi is a full professor at the University of Florence, Department of Information Engineering, chief of the DISIT lab <https://www.disit.org> and research group. His research interests include massive parallel and distributed systems, physical models, semantic computing, big data, artificial intelligence, smart city, cloud, IOT. He is and has been the coordinator of several R&D multipartner international R&D projects of the European Commission such as Snap4City, RESOLUTE, ECLAP, AXMEDIS, WEDELMUSIC, MUSICNETWORK, MOODS and he has been involved in many other projects. He is the coordinator of Sii-Mobility, Km4City actions, has been AHG chair in MPEG ISO.



Kim-Kwang Raymond Choo
The University of Texas at San Antonio, USA

Kim-Kwang Raymond Choo received the Ph.D. in Information Security in 2006 from Queensland University of Technology, Australia. He currently holds the Cloud Technology Endowed Professorship at The University of Texas at San Antonio (UTSA), and has a courtesy appointment at the University of South Australia. In 2016, he was named the Cybersecurity Educator of the Year - APAC (Cybersecurity Excellence Awards are produced in cooperation with the Information Security Community on LinkedIn), and in 2015 he and his team won the Digital Forensics Research Challenge organized by

Germany's University of Erlangen-Nuremberg. He is the recipient of the 2018 UTSA College of Business Col. Jean Piccione and Lt. Col. Philip Piccione Endowed Research Award for Tenured Faculty, IEEE TrustCom 2018 Best Paper Award, ESORICS 2015 Best Research Paper Award, 2014 Highly Commended Award by the Australia New Zealand Policing Advisory Agency, Fulbright Scholarship in 2009, 2008 Australia Day Achievement Medallion, and British Computer Society's Wilkes Award in 2008. He is also a Fellow of the Australian Computer Society, and an IEEE Senior Member.



Richard Hill
University of Huddersfield, UK

Professor Richard Hill is Head of the Department of Computer Science, and Director of the Centre for Industrial Analytics, at the University of Huddersfield, UK. Professor Hill has published widely in the areas of Big Data, predictive analytics, the Internet of Things, and Industry 4.0, and has specific interests in digital manufacturing and smart cities.



Md Zakirul Alam Bhuiyan
Fordham University, USA

Md Zakirul Alam Bhuiyan, PhD, is currently an Assistant Professor of the Department of Computer and Information Sciences at the Fordham University, NY, USA. He is also a Visiting Professor of Guangzhou University, China. Earlier, he worked as an Assistant Professor at the Temple University. His research focuses on dependability, cyber security, big data, and cyber physical systems. He has over 120 papers published in prestigious venues, including top tier IEEE/ACM transactions/magazines. Two of his papers have been recognized as the ESI Highly Cited Papers in Computer Sciences. He has served as a lead guest/associate editor for IEEE TBD, ACM TCPS, IEEE IoT journal, INS, JNCA, FGCS, and so on. He has also received the IEEE TCSC Early Career Research Award (2016-2017) and the IEEE Outstanding Leadership Awards (2016, 2017, 2018), and so on. He has served as an organizer, general chair, program chair, workshop chair, and TPC member of various international conferences, including IEEE INFOCOM. He is a Senior Member of IEEE and a member of ACM.



Hao Wang
Norwegian University of Science and Technology, Norway

Hao Wang is an associate professor and the head of Big Data Lab at the Department of ICT and Natural Sciences in Norwegian University of Science & Technology, Norway. He has worked as a researcher in IBM Canada, McMaster, and St. Francis Xavier University before he moved to Norway. He received a Ph.D. degree in 2006 and a B.Eng. degree in 2000, both in computer science and engineering. His research interests include big data analytics, industrial internet of things, high performance computing, safety-critical systems, and communication security. He has published 80+ papers in international journals and conferences such as IEEE RBME, TVT, JBHI, Design & Test, Elsevier FGCS and Computer Communications. He served as a TPC co-chair for IEEE DataCom 2015, IEEE CIT 2017, ES 2017 and reviewers for journals such as IEEE TKDE, TII, TBD, TETC, T-IFS, IoTJ, and ACM TOMM. He is a member of IEEE IES TC on Industrial Informatics.

A. SESSIONS AND PAPERS IN iSCI 2018

The 2018 International Symposium on Smart City and Informatization (iSCI 2018)

Session iSCI-1: 08:30-10:00, October 8 (Monday), Room 8

Chair: Deze Zeng, China University of Geosciences, Wuhan, China

Modeling Methods for Cloud Based Cyber Physical Systems

Lichen Zhang

A Privacy Preserving Outlier Detection Algorithm Based on Connected Domain

Zhaoyu Shou, Xiawei Cheng and Simin Li

Load Aware Management of Cloudlets for a Wireless Area Metropolitan Network

Xiaolong Xu, Md Zakirul Alam Bhuiyan, Lianyong Qi, Xuyun Zhang, Wanchun Dou

The Performance Evaluation Model of Intel SGX- Based Data Protection

Wei Zheng, Shichao Cao, Zhiqian Gao, Xiaoxue Wu and Qian Ding

Road Speed Fusion Model Based on Wavelet Neural Network Optimized by Genetic Algorithm

Jiguo Liu, Rui Sun and Haitao Yu

Session iSCI-2: 10:20-12:30, October 8 (Monday), Room 3

Chair: Yinglong Dai, Hunan Normal University, China

VJournaling: Improving the Write Performance of a Virtualized Journaling File System

Dingding Li, Wande Chen, Zhengyang Wu, Hai Liu, Yong Tang

Deep Convolutional Mesh RNN for Urban Traffic Passenger Flows Prediction

Md Zakirul Alam Bhuiyan, Hao Peng, Zhene Zou

An Academic Social Network Friend Recommendation Algorithm Based on Decision Tree

Dingding Li, Zuoxi Yang, Ronghua Lin, Yong Tang

Repurchase Prediction for E-Commerce Based on Ensemble Learning

Danqi Xu, Wenyin Yang, Li Ma

Water Level Estimation Based on Image of Staff Gauge in Smart City

Zhikang Xu, Jing Feng, Zhizheng Zhang

A Moko Decision Process Approach to Optimizing Waiting for Taxis

Huigui Rong, Xu Dong Zhang, Qin Liu, Qiaoyue Yang, Jiewei Gu, Hui Zheng

Cost Efficient State-aware Function Placement and Flow Scheduling for NFV Networks

Deze Zeng, Lin Gu, Yunsong Chen, Shengli Pan, Zhuzhong Qian

Session iSCI-3: 13:30-15:30, October 8 (Monday), Room 3

Chair: Debasis Das, BITS Pilani K. K. Birla, Goa Campus, India

A Low-rate DoS Attack Detection Method Based on Hilbert Spectrum and Correlation

Dan Tang, Xiaoxue Wu, Liu Tang, Jianping Man, Sijia Zhan

Speed Regulation of Overhead Catenary System Inspection Robot for High-Speed Railway through Reinforcement Learning

Siqi Li, Cheng Xu, Lipei Chen, Zhenmin Liu

Accelerating a Secure Programmable Edge Network System for Smart Classroom

Watipatsa W. Nsunza, A-Q. Ransford Tetteh, Xiaojun Hei

Ubiquitous Healthcare System Based on the Sensor Network and Android Internet of Things Gateway

Oana Geman, Iuliana Chiuchisan, Ioan Ungurean, Marius Hagan and Muhammad Arif

Using Data till 1996, 2008 and 2017 via Full-Traversal Addition-Subtraction Frequency (ASF) Method with Consistent Analysis to Predict Possible M6.6-or-Above Earthquakes in Sichuan-Yunnan Region of China

Yunong Zhang, Ruifeng Wang, Mengling Xiao, Jinjin Guo and Chengxu Ye

From Historical Data Through ASF Method of Equal-Type Half Traversal to Predict USA Presidential Parties from 2021 to 2041

Yunong Zhang, Jiayu Wu, Ruifeng Wang, Chengxu Ye and Yingbiao Ling

Highway Traffic Volume Prediction via stacking KNN, SVR, MLP, RNN

Zhilong Lu, Weifeng Lv, Zhipu Xie and Tongyu Zhu

Session iSCI-4: 13:30-15:30, October 9 (Tuesday), Room 8

Chair: Weimin Li, Shanghai University, China

Aggregating Author Profiles from Multiple Publisher Networks to Build Author Knowledge Graph

Karim Alinani, Guojun Wang, Annadil Alinani, Dua Hussain Narejo and Mumbere Muyisa Forrest

Personalized App Recommendation Method Based on Hierarchical Embedding

Dong Liu, Wenjun Jiang

Aspect-based Personalized Review Ranking

Wenjun Jiang, Chunli Huang

Understanding the Evolution of Fine-grained User Opinions in Product Reviews

Peike Xia, Wenjun Jiang

Resource Transaction Framework Based on Block Chain in Social Community

Ke Gu, Linyu Wang and Bo Yin

Power Curtailment in Cloud Environment Utilising Load Balancing Machine Allocation

Amir Javadpour, Guojun Wang, Samira Rezaei, Shuhong Chen

Combining Fuzzy Clustering and PSO Algorithms to Optimise Energy Consumption in WSN Networks

Amir Javadpour, Niusha Adelpour, Guojun Wang, Tao Peng

B. SESSIONS AND PAPERS IN ADSN 2018

The 17th International Workshop on Assurance in Distributed Systems and Networks (ADSN 2018)

Session ADSN-1: 15:50-18:30, October 8 (Monday), Room 3

15:50-16:20

Chair: Y. Kakuda, Hiroshima City University, Japan

1. Keynote Speech, T. Tsuchiya, How a classical computer science subject can help systems assurance

16:20-17:00

Chair: E. Kohno, Hiroshima City University, Japan

2. Masahiro Nishi, Haruki Kozato, Yusuka Ota and Koichi Shin, Development of Disaster Monitoring Techniques in the Grass-root Information Distribution System for Detecting Landslide Dangers (20min)
3. Toru Sakon and Yukikazu Nakamoto, Structured Policy based Design Method for Cybersecurity of Automotive E/E System (20min)

17:00-17:05

Break (5min)

Close look at network assurance

17:05-17:30

Chair: J. Funasaka, Hiroshima City University, Japan

4. Invited Talk, T. Otani, T. Kitahara and T. Ogishi, Mobile network role for connected car era

17:30-18:30

Chair: T. Sakon, University of Hyogo, Japan

5. Y. Minami, N. Kajikawa, R. Saka, Y. Nakao, E. Kohno and Y. Kakuda, Arbitration-based Deadlock Mitigation Mechanism for Fast Connection Establishment in Autonomous Self-organized Bluetooth MANETs (20min)
6. H. Toyota, S. Inoue and Y. Kakuda, A proposal and evaluation of mobility model which derives various node mobility scenarios (20min)
7. J. Funasaka, Adaptability Enhancement for Progressive Download Methods Based on Timer-Driven Requesting Schemes Using Multiple TCP Flows on Multiple Paths (20min)

Development of Disaster Monitoring Techniques in the Grass-root Information Distribution System for Detecting Landslide Dangers

Masahiro Nishi, Haruki Kozato, Yusuka Ota and Koichi Shin

Adaptability Enhancement for Progressive Download Methods Based on Timer-Driven Requesting Schemes Using Multiple TCP Flows on Multiple Paths

Junichi Funasaka

Arbitration-based Deadlock Mitigation Mechanism for Fast Connection Establishment in Autonomous Self-organized Bluetooth MANETs

Yuya Minami, Nobuhiro Kajikawa, Ryohei Saka, Yuma Nakao, Eitaro Kohno and Yoshiaki Kakuda

Structured Policy Based Design Method for Cybersecurity of Automotive E/E System

Toru Sakon and Yukikazu Nakamoto

A Proposal and Evaluation of Mobility Model Which Derives Various Node Mobility Scenarios

Hiroaki Toyota, Shinji Inoue and Yoshiaki Kakuda

C. SESSIONS AND PAPERS IN AISE 2018

The 2018 Special Session on Advanced Information Systems Engineering (AISE 2018)

Session AISE-1: 08:30-10:00, October 8 (Monday), Room 4

Chair: Jingde Cheng, Saitama University, Japan

Invited talk 1: Are Deep Learning Systems Reliable?

Prof. Jianjun Zhao, Kyushu University, Japan

A Naïve Construction Model of Membership Function

Zhenzhen Wang

Measuring Interestingness of Theorems in Automated Theorem Finding by Forward Reasoning: A Case Study in Tarski's Geometry

Hongbiao Gao, Jianbin Li and Jingde Cheng

Improvement of Data Portability of ENQUETE-BAISE: a General-Purpose E-Questionnaire Server for Ubiquitous Questionnaire

Yohei Kamata and Yuichi Goto

Session AISE-2: 10:20-12:30, October 8 (Monday), Room 4

Chair: Yuichi Goto, Saitama University, Japan

Invited talk 2: Social Aspects of Software Development and Groupware

Prof. Yoshinari Nomura, Okayama University, Japan

FreeEnCal Web: a Web Service of Automated Forward Reasoning for General-purpose

Takumi Otsuka, Kentaro Fukushi, Yuichi Goto and Jingde Cheng

An Implementation of Theory Grid with Linked Data Technologies

Tomoya Yamazaki, Atomu Sakuma and Yuichi Goto

Primitive Constituent Elements of Cryptographic Protocols

Sho Ishibashi, Jingchen Yan, Yuichi Goto and Jingde Cheng

Evaluation about the Descriptive Power of QSL: A Specification Language for E-Questionnaire, E-Testing, and E-Voting Systems

Yuan Zhou, Daisuke Matsuura, Yuichi Goto and Jingde Cheng

Development of Supporting Environment for IT System Security Evaluation Based on ISO/IEC 15408 and ISO/IEC 18045

Da Bao, Wen Sun, Yuichi Goto and Jingde Cheng

Session AISE-3: 13:30-15:30, October 8 (Monday), Room 4

Chair: Jianjun Zhao, Kyushu University, Japan

Invited talk 3: Research and Development on Advanced Information Systems Engineering at Saitama University

Prof. Yuichi Goto, Saitama University, Japan

Invited Talk 4: The State of the Art of Automated Theorem Finding

Dr. Hongbiao Gao, North China Electric Power University, China

A Study on Fine-Grained Security Properties of Cryptographic Protocols for Formal Analysis with Forward Reasoning

Jingchen Yan, Sho Ishibashi, Yuichi Goto and Jingde Cheng

Deep Learning-Based Online Small Signal Stability Assessment of Power Systems with Renewable generation

Jun Cao and Zhong Fan

An Epistemic Programming Approach for Automated Nonmonotonic Reasoning Based on Default Logic

Yuichi Goto and Takuya Ito

Session AISE-4: 15:50-18:30, October 8 (Monday), Room 4

Chair: Hongbiao Gao, North China Electric Power University, China

Stability Analysis and Hopf Bifurcation Research for DNA Strand Displacement with Time-delay

Yanhong Liu, Hui Lv, Changjun Zhou, Zhixiang Yin, Xianwen Fang, Zhonglong Zheng and Qiang Zhang

An Undergraduate Curriculum Model for Intelligence Science and Technology

Jingde Cheng, Runhe Huang, Qun Jin, Jianhua Ma, Yi Pan

Type Conversion Sequence Recommendation Based on Semantic Web Technology

Haibo Yu, Xi Jia, Tsunenori Mine and Jianjun Zhao

D. SESSIONS AND PAPERS IN IWCSS 2018

The 2nd International Workshop on Cyberspace Security (IWCSS 2018)

Session IWCSS-1: 15:50-18:30, October 8 (Monday), Room 4

Chair: Yang Xu, Central South University, China

A Human Flesh Search Algorithm Based on Information Puzzle

Fuzhong Nian, Yaqiong Zhang and Ximmeng Liu

Credit Card Fraud Detection via Kernel-based Supervised Hashing

Zhenchuan Li, Guanjun Liu, Shuo Wang, Shiyang Xuan and Changjun Jiang

A New Detection Method for Stack Overflow Vulnerability Based on Component Binary Code for Third-Party Component

Wanggen Xie, Jinchang Hu and Patrick Kwaku Kudjo

A New Cryptosystem Based on Positive Braids

Weiqing You

E. SESSIONS AND PAPERS IN C4W 2018

The 2018 Special Session on Collaborative Computing with Cloud and Client Workshop (C4W 2018)

Session C4W-1: 08:30-10:00, October 8 (Monday), Room 8

Chair: Feng Wang, China University of Geosciences, Wuhan, China

Task Scheduling for Cloud Based Cyber-Physical Systems

Dandan Lai, Lichen Zhang, Bingqing Xu and Chunyao Liu

An Optimization Strategy for Improving Security in Steganography

Xiancheng Wu and Shunquan Tan

Leaks or Not: A Framework for Evaluating Cache Timing Side Channel Attacks in SGX

Wei Zheng, Ying Wu, BaoLei Mao, XiaoXue Wu

Calligraphy: A Mobile Device Based Annotation Tool Supporting Learner Crowdsourcing

Qingcheng Li, Heng Cao, Guangming Zheng and Ye Lu

Data Offloading for Deadline-Varying Tasks in Mobile Edge Computing

Zhipeng Gao, Jie Meng, Qian Wang and Yang Yang

Session C4W-2: 10:20-12:30, October 8 (Monday), Room 8

Chair: Yingkai Zhao, Central South University, China

Generalized Nash Equilibrium Model of the Service Provisioning Problem in Multi-cloud Competitions

Peini Liu, Xinjun Mao, Fu Hou and Shuai Zhang

Toward An Efficient Cache Management Framework

Xuwei Niu and Kun Ma

Distributed Data Collection in a Cyclic MobiSpace

Yong-Yan Cui, Sheng Zhang and Zhi Ma

Mal-warehouse: a Data Collection-as-a-service of Mobile Malware Behavioral Patterns

Vasileios Kouliaridis, Konstantia Barmptsalou, Georgios Kambourakis and Guojun Wang

F. SESSIONS AND PAPERS IN SRTS 2018

The 2018 International Workshop on Smart and Resilient Transportation System (SRTS 2018)

Session SRTS-1: 10:20-12:30, October 8 (Monday), Room 8

Chair: Xinyue Xu, Beijing Jiaotong University, China

Evaluation of Operation Status of Urban Rail Transit Stations Based on Historical Data

Jingchao Quan, Haiying Li, Xinyue Xu

A SVR-based Passenger Route Choice Model in Urban Rail Transit Network

Luyao Wang, Xi Jiang, Chunxiao Li

G. SESSIONS AND PAPERS IN AEIT 2018

The 2018 International Workshop on Assistive Engineering and Information Technology (AEIT 2018)

Session AEIT-1: 13:30-15:30, October 8 (Monday), Room 8

Chair: Zhen Liu, Nagasaki Institute of Applied Science, Japan

An Ensemble Learning Framework for Credit Card Fraud Detection Based on Training Set Partitioning and Clustering

Hongyu Wang, Ping Zhu, Xueqiang Zou and Sujuan Qin

An Improved Iterated Hybrid Search for DNA Codes Design

Zhenghui Liu, Bin Wang, Changjun Zhou, Xiaopeng Wei, Qiang Zhang, Zhixiang Yin, Xianwen Feng and Zhonglong Zheng

A Item-diversity-based Collaborative Filtering Algorithm to Improve the Accuracy of Recommendation Systems

Wenjun Yang Yang, Shuzhen Fan and Huaibin Wang

Wearable Ear Blood Oxygen Saturation and Pulse Measurement System Based on PPG

Gang Ma and Lirong Wang

Session AEIT-2: 15:50-18:30, October 8 (Monday), Room 8

Chair: Qiang Zhang, Dalian University of Technology, China

Automated Segmentation of Esophagus Layers from OCT Images Using Fast Marching Method

Miao Zhang and Lirong Wang

A Wearable High-precision Skin Resistance Acquisition System

Kongpeng Xing and Lirong Wang

Design of a Portable Physiological Signal Data Storage System

Jie Zhang and Lirong Wang

Wearable Arteriovenous Fistula Murmur Monitoring System Based on Embedded Wi-Fi Technology

Teng Tong and Lirong Wang

Heartbeat Classification Using Convolution Neural Network and Wavelet Transform to Extract Features

Lishen Qiu and Lirong Wang

Design of Remote Database Service System for Wearable Devices

Longfei Niu and Lirong Wang

Model-based Active Impedance Controller Development of the Exoskeleton Rehabilitation Robot (ERRobot) for Lower-extremity

Lei Shi, Fu Li and Zhen Liu

Maximum Frequent Itemsets Discovery Algorithm Based on Granular Computing

Haicheng Chi and Zhen Liu

H. SESSIONS AND PAPERS IN BlockChain 2018

The 2018 Special Session on BlockChain and its Applications (BlockChain 2018)

Session BlockChain-1: 08:30-10:00, October 8 (Monday), Room 9

Chair: Kouichi Sakurai, Kyushu University, Japan

Managing Lifetime Healthcare Data on the Blockchain

Mark Hanley and Hitesh Tewari

A Privacy-preserving, Decentralized and Functional Bitcoin E-voting Protocol

Zijian Bao, Bin Wang and Wenbo Shi

Proof of Disease: A Blockchain Consensus Protocol for Accurate Medical Decision and Reducing the Disease Burden

Asoke Talukder, Manish Chaitanya, Dave Arnold and Kouichi Sakurai

Generate Public Randomness Based on Blockchain

Yanxue Jia and Lei Fan

Blockchain-based Ubiquitous Code Ownership Management System without Hierarchical Structure

Hirotsugu Seike, Takeo Hamada, Takahiro Sumitomo and Noboru Koshizuka

I. SESSIONS AND PAPERS IN NOPE 2018

The 6th International Workshop on Network Optimization and Performance Evaluation (NOPE 2018)

Session NOPE-1: 10:20-12:30, October 8 (Monday), Room 9

Chair: **Jean Frederic Myoupo (Ph.D), University of Picardie-Jules Verne, France**

Energy-aware Automatic Tuning of Many-Core Platform via Adaptive Evolution

Chen Liu, Zhiliu Yang and Yijun Jiang

Women Safety Device Designed using IoT and Machine Learning

Purnendu Shekhar Pandey, Muskan Jindal, Teena Khandelwal and Manisha Khandelwal

Study on Energy Minimization Data Transmission Strategy in Mobile Cloud Computing

Fangsu Wang and Gaocai Wang

Location-semantics-aware Protection Algorithms for Location Privacy Based on Road Networks

Hongyun Xu, Yaohui Zheng and Jian Zeng

Theoretical Analyses and Results of Taylor-Zhang Discretization Formula and ZeaD4I\$g\$2_Y Formula Generating Discrete-Time Solutions of ODE Dynamic Systems

Huanchang Huang, Min Yang, Binbin Qiu, Ziyu Yin and Yunong Zhang

Research on Multi-dimensional Opportunistic Communication Routing Protocol in Vehicular Ad-hoc Networks

Zongtao Duan, Yingjuan Lei, Yishui Zhu, Lei Tang, Na Fan and Jinhui Tang

Mutual Authentication Protocol for V2V Communication in VANETs

Harsha Vasudev and Debasis Das

J. SESSIONS AND PAPERS IN ECIA 2018

The 2018 International Workshop on Evolutionary Computation and Its Applications (ECIA 2018)

Session ECIA-1: 13:30-15:30, October 8 (Monday), Room 9

Chair: **Jinghui Zhong, South China University of Technology, China**

An Efficient Cooperative Co-evolutionary Gene Expression Programming

Tiantian Cheng and Jinghui Zhong

Automated Optimization of Longitudinal Tensile Reinforcement in RC Beam using Binary PSO Algorithm

Zhou Wu, Nian Ao, Chengran Xu, Liang Feng and Jiepeng Liu

Ant Colony Optimization Based Salient Object Detection for Weak Light Images

Mu Nan, Xin Xu and Xiaolong Zhang

An Efficient Ant Colony Programming Approach

Dongrui Li and Yongliang Chen

A Kalman Filter Based Indoor Tracking System via Joint Wi-Fi/PDR Localization

Hao Zhang, Yusheng Xia, Kai Liu, Feiyu Jin, Chao Chen and Yong Liao

A Multiobjective RNA Secondary Structure Prediction Algorithm Based on NSGAI1

Kai Zhang and Yulin Lv

K. SESSIONS AND PAPERS IN IPBMM 2018

The 2018 Special Session on IoP Basic Models and Methods (IPBMM 2018)

Session IPBMM-1: 15:50-18:30, October 8 (Monday), Room 9

Chair: **Fuhua Lin, Athabasca University, Alberta, Canada**

A Representation Method and Optimization of Network Flow Based on Coalgebra

Xinxin Liu and Xiaofeng Wang

A Fusion Information Embedding Method for User Identity Matching across Social Networks

Yizhuo Yang, Hongtao Yu, Ruiyang Huang and Tuosiyu Ming

A Dependability Modeling and Analysis Approach for an IoP-based Service System

Zhibao Mian, Leonardo Bottaci, Jiulei Jiang, Jun He, Qiancheng Yu and Xiaofeng Wang

Constructing the Community Assignment Matrix for Overlapping Community Detection

Yu Qiancheng, Yu Zhiwen and Xiaofeng Wang

A Dynamic Trust Model Based on Time Decay Factor

Hanxu Wang, Jiulei Jiang and Weimin Li

Model Checking Instance Based on NuSMV

Ninglin Xu, Jiulei Jiang, Zhanyou Ma and Panqing Zhang

An Online Data Deduplication Approach for Virtual Machine Clusters

Zhongwen Qian, Xudong Zhang, Xiaoming Ju and Li Bo

An Efficient Graph Data Processing Framework for Power Grid Systems

Fenghua Wang, Jia Shi, Xiaoming Ju and Li Bo

L. SESSIONS AND PAPERS IN UIC 2018

The 15th IEEE International Conference on Ubiquitous Intelligence and Computing (UIC 2018)

Track 1: Intelligent/Smart System & Service

Session ISSS-1: 13:30-15:30, October 9 (Tuesday), Room 3

Chair: Zakirul Alam Bhuiyan, Fordham University, USA

Embedding-level Attention and Multi-scale Convolutional Neural Networks for Behaviour Modelling

Aitor Almeida, Gorka Azkune and Aritz Bilbao

A Smile Detection Method Based on Improved LeNet-5 and Support Vector Machine

Miao Ma, Ziang Gao, Jie Wu, Yuli Chen and Xue Zheng

Enabling Efficient Stroke Prediction by Exploring Sleep Related Features

Jia Xie, Zhu Wang, Zhiwen Yu and Bin Guo

Real-Time Data Processing Architecture for Multi-robots Based on Differential Federated Learning

Wei Zhou, Yiyi Li, Shuhui Chen and Bo Ding

A Synergistic Cloud Service Approach for Cold Start Problems

Rui-Dong Qi, Jian-Tao Zhou and Xiaoyu Song

Session ISSS-2: 13:30-15:30, October 10 (Wednesday), Room 5

Chair: Kouichi Sakurai, Kyushu University, Japan

A Domain-Specific Approach to Unifying the Many Dimensions of Context-aware Home Service Development

Nic Volanschi, Adrien Carteron and Charles Conzel

A Cloud Workflow Model Based on Resources Selection

Jiantao Zhou, Xianyang Li and Yan Wang

Research on Human Motion Recognition Based on Wi-Fi and Inertial Sensor Signal Fusion

Yao Shu, Chong Chen, Kuang-I Shu and Heng Zhang

GPS Trajectories Based Personalized Safe Geofence for Elders with Dementia

Qiang Lin, Xinshuai Liu and Weilan Wang

Improving Large Scale Real-time Ridesharing with Heuristics for Road Networks

Ning Junqi, Rong Chen and Zhou Zhifeng

CIGAN: A Novel GANs Model Based on Category Information

Jianwei Niu, Zheng Li, Shasha Mo and Boyu Fan

Session ISSS-3: 13:30-15:30, October 9 (Tuesday), Room 4

Chair: Elahi Haroon, Guangzhou University, China

WiFit: Ubiquitous Bodyweight Exercise Monitoring with Commodity Wi-Fi Devices

Shengjie Li, Xiang Li, Qin Lv, Guiyu Tian and Daqing Zhang

An Efficient Method for Optimizing PETS on the Sunway TaihuLight System

Letian Kang, Zhi-Jie Wang, Zhe Quan, Weigang Wu, Song Guo, Kenli Li and Keqin Li

Towards a Truthful Online Auction for Cooperative Mobile Task Execution

Junyi He, Di Zhang, Yuezhi Zhou, Xiang Lan and Yaoxue Zhang

Resource Demand Forecasting Approach Based on Generic Cloud Workload Model

Chunyan An and Jian-Tao Zhou

A Body Simulator with Delayed Health State Transition

Yinglong Dai, Xiangyong Liu and Guojun Wang

Session ISSS-4: 15:50-18:30, October 9 (Tuesday), Room 4

Chair: Elahi Haroon, Guangzhou University, China

Multi-Channel Lightweight Convolution Neural Network for Anterior Myocardial Infarction Detection

Yufei Chen, Huihui Chen, Ziyang He, Cong Yang and Yangjie Cao

Interrupt-Driven Fall Detection System Realized via a Kalman Filter and kNN Algorithm

Jian He, Zihao Zhang and Weiguo Yu

A Direction-based Vehicular Network Model in Vehicular Fog Computing

Yalan Wu, Jigang Wu, Gangqiang Zhou and Long Chen

Wi-Fi Based Gesture Recognition using Deep Transfer Learning

Qirong Bo, Gang Yang, Jun Feng and Xingxia Ming

Constructing Hierarchical Spatiotemporal Information for Action Recognition

Guangle Yao, Tao Lei, Jiandan Zhong and Xianyuan Liu

Weakly Secure Coded Distributed Computing

Ruimin Zhao, Jin Wang, Kejie Lu, Jianping Wang, Xiumin Wang, Jingya Zhou and Chunming Cao

Session ISSS-5: 13:30-15:30, October 10 (Wednesday), Room 4

Chair: Shaobo Zhang, Hunan University of Science and Technology, China

Toward Ubiquitous Environment: an Scalable Framework for Autonomous Service Composition

Jingbin Zhang, Peikai Zheng, Meng Ma and Ping Wang

A Hybrid Data Collection Scheme for Wireless Sensor Networks Using Compressed Sensing

Guorui Li, Haobo Chen, Sancheng Peng, Xinguang Li and Cong Wang

Abnormal Hosts Monitor for City Wide Core Network by Real Time Super Points Cardinality Estimation

Jie Xu, Wei Ding and Xiaoyan Hu

Optimizing the Performance-cost Tradeoff in Cross-Edge Analytics

Lin Jia, Zhi Zhou and Hai Jin

Secure Online/Offline Multi-authority Attribute-based Encryption for Resource-constrained Devices in Cloud Computing

Jiaye Shao, Yanqin Zhu and Qijin Ji

Session ISSS-6: 15:50-18:30, October 10 (Wednesday), Room 4

Chair: Jie Ren, Shaanxi Normal University, China

A QoE-based Governor for Web Browsing on Heterogeneous Mobile Systems

Jie Ren, Xiaoming Wang, Feng Tian, Ling Gao, Hai Wang and Jie Zheng

Stochastic Analysis on Fog Computing Empowered Mobile Crowdsensing with D2D Communications

Haixiang Hou, Hai Jin, Xiaofei Liao and Deze Zeng

Towards Wi-Fi Radar in Collapsed Structures

Muhammad Faizan Khan, Guojun Wang and Md Zakirul Alam Bhuiyan, Xiaofei Xing

QoE Aware and Cell Capacity Enhanced Computation Offloading for Multi-Server Mobile Edge Computing Systems with Energy Harvesting Devices

Hailiang Zhao, Wei Du, Wei Liu, Tao Lei and Qiwang Lei

Accurately Counting Steps of the Pedestrian with Varying Walking Speeds

Xiaomin Kang, Baoqi Huang, Runze Yang and Guodong Qi

A Dynamic Role Assignment Formation Control Algorithm Based on Hungarian Method

Huiying Wang, Dianxi Shi and Bingnan Song

Track 2: Intelligent/Smart Object & Interaction

Session ISOI-1: 13:30-15:30, October 9 (Tuesday), Room 12

Chair: Xiangyong Liu, Central South University, China

A Dynamic Multi-objective Evolutionary Algorithm for Nontrivial Upper Bounds of Real-time Tasks in Embedded System Design

Haifeng Xing, Jiantao Zhou, Xiaoyu Song and Ruidong Qi

A Leakage-resilient FPGA-based IP Identity Authentication Protocol

Jing Long, Dafang Zhang, Wei Liang and Kuan-Ching Li

DopGest: Dual-frequency Based Ultrasonic Gesture Recognition

Liu Qi, Yang Wei, Xu Yang, Huang Liusheng, Hu Yahui and He Qijian

A Novel Bidirectional RFID Identity Authentication Protocol

Songyou Xie, Wei Liang, Xiong Li, Mingdong Tang, Tien-Hsiung Weng and Kuan-Ching Li

Executable Micro-architecture Modeling and Automatic Verification of EtherCAT

Shun Wang, Xiaojuan Li, Yong Guan, Rui Wang and Jie Zhang

Session ISOI-2: 15:50-18:30, October 9 (Tuesday), Room 12

Chair: Xiangyong Liu, Central South University, China

Mining the Critical Conditions for New Hypotheses of Materials from Historical Reaction Data

Ouyang Zhenchao, Yu Liu and Jianwei Niu

A Wikipedia Two-way Link Vector Model for Measuring Semantic Relatedness

Xin-Hua Zhu, Qingsong Guo and Bo Zhang

Dynamic Representation Learning for Video Action Recognition Using Temporal Residual Networks

Yongqiang Kong, Shanshan Huang, Jianhui Huang, Zhengang Wei and Shengke Wang

Environmentally Adaptive Real-time Detection of RFID False Readings in a New Practical Scenario

Shaoyi Zhu, Siye Wang, Yanfang Zhang and Yue Feng

EmotionSense: Emotion Recognition Based on Wearable Wristband

Zhao Bobo, Wang Zhu, Yu Zhiwen and Guo Bin

Scheduling Algorithm for Area Coverage Problem in Directional Sensor Networks

Zhimin Liu, Guihua Duan and Guojun Wang

Session ISOI-3: 13:30-15:30, October 10 (Wednesday), Room 12

Chair: Xiangyong Liu, Central South University, China

A Two-stage Incremental Update Method for Fall Detection with Wearable Device

Jianfei Shen, Yiqiang Chen, Zhiqi Shen and Siyuan Liu

Alexa, My Love: Analyzing Reviews of Amazon Echo

Yang Gao, Zhengyu Pan, Honghao Wang and Guanling Chen
Resource-aware Stream Processing in High Performance Cloud Environment
Yingchao Cheng, Zhifeng Hao, Ruichu Cai, Wen Wen, Lijuan Wang and Zhongrun Zhou
Secure and Effective Geo-Data Transmission Scheme for Vehicle-to-Vehicle Communication
Trupil Limbasiya and Debasis Das
Web Services Clustering Based on HDP and SOM Neural Network
Qiaoxiang Xiao, Buqing Cao and Xiangping Zhang

Session ISOI-4: 15:50-18:30, October 10 (Wednesday), Room 12

Chair: Jie Xu, Southeast University, China

An Implicit Information Based Movie Recommendation Strategy
Jie Chen, Junjie Peng, Yingtao Wang and Gan Chen
Collatz Conjecture for $2^{1000000-1}$ is True - Algorithms for Verifying Extremely Large Numbers
Wei Ren, Simin Li and Ruiyang Xiao
A Synchronous Gossip Algorithm with Exponential Backoff
Lei Zhang, Weiqing Cheng and Yinglin Hou
APRNN: A New Active Propagation Training Algorithm for Distributed RNN
Dejiao Niu, Tianquan Liu, Zheng Xia, Tao Cai, Yawen Liu and Yongzhao Zhan
Semantic Web-based Approach to Support Rational Unified Process Software Development
Udsanee Pakdeetrakulwong

Work-in-Progress Papers (WiP)

A Comparison of Inertial Data Acquisition Methods for a Position-independent Soil Types Recognition
Florentin Thullier, Val ère Plantevin, Abdenour Bouzouane, Sylvain Hall éand Sebastien Gaboury
T-Suite: A RESTful Distributed Development and Runtime Environment on Things Devices
Xiaohui Peng, Lu Chao, Yifan Wang and Zhiwei Xu

Track 3: Intelligent/Smart Environment & Applications

Session ISEA-1: 13:30-15:30, October 9 (Tuesday), Room 10

Chair: Mingfeng Su, Central South University, China

Hierarchy Value Density-A Priority Algorithm for Task Scheduling on Cloud
Ling Kuang and Lichen Zhang
Clustering Large-Scale Origin-Destination Pairs: a Case Study for Public Transit in Beijing
Miao Li, Beihong Jin, Hongyin Tang and Fusang Zhang
Crime Rate Inference using Tensor Decomposition
Liang Ge, Junling Liu, Aoli Zhou and Hang Li
Multi-Depth-Camera Sensing and Interaction In Smart Space
Xiaoyang Wu, Chun Yu and Yuanchun Shi
A Novel and Distributed Approach for Activity Recognition Inside Smart Homes
Val ère Plantevin, Abdenour Bouzouane, Bruno Bouchard and Sebastien Gaboury

Session ISEA-2: 15:50-18:30, October 9 (Tuesday), Room 10

Chair: Xiaoliang Wang, Hunan University of Science and Technology, Xiangtan, China

CRNet: Corner Recognition from Trajectories Based on Convolutional and Recurrent Neural Networks
Yuchen Sun and Bang Wang
Security OSIF: Toward Automatic Discovery and Analysis of Event Based Cyber Threat Intelligence
Ke Li, Hui Wen, Hong Li, Hongsong Zhu and Limin Sun
SWATS: A Lightweight VANET Anonymous Tracback System Based on Random Superposition Watermarking
Xiaoliang Wang, Jianming Jiang, Liang Bai and Zhihua Xia
Urban road traffic cogestion detection using RFID data of vehicles
Linjiang Zheng, Li Chen, Yadong Liu, Jing Huang, Mujun He and Weining Liu
What Wrist Temperature Tells Us When We Sleep Late: a New Perspective of Sleep Health
Jing Wei, Jennifer Boger and Jin Zhang
Performance Evaluation of Hypervisors and the Effect of Virtual CPU on Performance
Hafiz Ur Rahman, Guojun Wang and Jianer Chen

Session ISEA-3: 13:30-15:30, October 10 (Wednesday), Room 3

Chair: Zakirul Alam Bhuiyan, Fordham University, USA

Multi-Resident Activity Recognition with Unseen Classes in Smart Homes
Wei Wang and Chunyan Miao
Cache Placement Strategy Based on Energy Consumption Optimization in CCN
Hongjia Wu and Gaocai Wang
Semi-supervised Learning with Ensemble Self-training for Cancer Classification
Qingyong Wang, Liangyong Xia, Hua Chai and Yun Zhou

RSU Controlled Named Data Networking for Traffic Information Dissemination in Vehicular Networks
Siyang Wang, Jian Deng, Weigang Wu and Jieying Zhou

Session UIC -1: 15:50-18:30, October 10 (Wednesday), Room 3

Chair: Mingfeng Su, Central South University, China

Work-in-Progress Papers (WiP)

Deep Optical Flow Feature Fusion Based on 3D Convolutional Networks for Video Action Recognition

Tongwei Lu, Shihui Ai, Yongyuan Jiang, Yudian Xiong and Feng Min

Vehicular Named Data Networking Based on Efficient Incremental Route Update

Jian Deng, Siyang Wang and Weigang Wu

An Operation-level Collaborative Filtering Approach based on Logistic Function for Web Services Recommendation

Hu Rong and Jianxun Liu

A Cloud-based Control System Architecture for Multi-UAV

Chen Hong and Dianxi Shi

Transportation Mode Detection Using Recurrent Neural Network

Hao Wang, Haiyong Luo, Fang Zhao, Yanyun Gong, Zhongliang Zhao, Yanjun Qin and Weichao Yuan

A Novel Text Classification Method for Emergency Event Detection on Social Media

Yanfang Liu, Jianwei Niu, Qingjuan Zhao, Jianghua Lv and Shilong Ma

An Approach to Reducing Implicit Privacy Disclosure in Spatial-temporal Big Data Publishing

Yujia Zhu, Xuejin Yan, Shuqi Li, Yuyou Fang and Li Kuang

Catalyze Sharing Economy: Optimized Multi-Task Allocation for Urban Transport Crowdsourcing

Pengfei Wang and Ruiyun Yu

Track 4: Personalization and Social Aspects

Session P&SA -1: 13:30-15:30, October 9 (Tuesday), Room 13

Chair: Monisha Bhattacharya, Artificial Intelligence Lab, Learning and Knowledge Mangement, Accenture

Traffic Flow Prediction for Road Intersections Safety

Walaa Alajali, Wanlei Zhou and Sheng Wen

A Lightweight Anonymous Mobile User Authentication Scheme for Smart Grid

Bin Yang, Guangquan Xu, Xianjiao Zeng, Jia Liu and Yao Zhang

Continuous K Nearest Neighbor Query Scheme with Privacy and Security Guarantees in Road Networks

Changli Zhou, Tian Wang, Hui Tian and Wenxian Jiang

Power Control in D2D-Based Vehicle Communication with Delayed CSI Feedback

Xi Han, Yang Liu, Zhixin Liu, Yuan'ai Xie and Tian Wang

Mining and Analyzing User Feedback from App Reviews: an Econometric Approach

Tong Guo, Bin Guo, Yi Ouyang and Zhiwen Yu

Session P&SA -2: 15:50-18:30, October 9 (Tuesday), Room 13

Chair: Yang Liu, Beijing University of Posts and Telecommunications, China

Affective Content Analysis of Online Video Clips with Live Comments in Chinese

Jianwei Niu, Shijie Li, Shasha Mo, Sen Yang and Boyu Fan

An Offloading Approach in Fog Computing Environment

Wenda Tang, Shu Li, Wajid Rafique, Wanchun Dou and Shui Yu

Utility-aware Trip Planning

Feng Gao, Kai Han and Ke Xu

DeepAid: A Mobile Cognitive Aid System with Compacted Deep Learning

Shiwei Song, Yan Lei, Kang Yang, Tianzhang Xing, Jinping Niu, Feng Chen and Dingyi Fang

An Efficient Privacy-preserving Algorithm Based on Randomized Response in IoT-based Smart Grid

Hui Cao, Shubo Liu, Zhitao Guan, Longfei Wu, Haonan Deng and Xiaojiang Du

Work-in-Progress Papers (WiP)

An Adaptive Partition Method for Handling Skew in Spark Applications

Wei Lv, Zhuo Tang, Kenli Li and Keqin Li

Simulation Verifications of ZND Control for Dynamics-Included Robot Systems Extended from One Link to Multiple Links

Mengling Xiao, Binbin Qiu, Deyang Zhang, Mingzhi Mao and Yunong Zhang

Session P&SA-3: 13:30-15:30, October 10 (Wednesday), Room 13

Chair: Urrahman Hafiz, Guangzhou University, China

An Annulus Local Search based Localization (ALSL) Algorithm in Indoor Wi-Fi Environments

Hao Zhang, Kai Liu, Feiyu Jin, Liang Feng, Chao Chen, Chen Zhan and Jianjun Li

Attributed Community Search in Dynamic Networks

Jiahao Zhang, Kai Han, Junxiao Han, Feiyang Li and Shasha Li

Non-intrusive Biometric Identification for Personalized Computing Using Wireless Big Data

Zhiwei Zhao, Zifei Zhao, Geyong Min and Chang Shu
Deep Collaborative Filtering Incorporating Auxiliary Multi-Media Information
Shuang Li, Yanghui Yan, Chao Wu, Kaichuan Zhao, Yuezhi Zhou and Yaoxue Zhang
Fast Online Map Matching for Recovering Travelling Routes from Low-sampling GPS Data
Xiangting Hou, Linbo Luo, Wentong Cai and Masatoshi Hanai

Session P&SA-4: 15:50-18:30, October 10 (Wednesday), Room 13

Chair: Nic Volanschi, INRIA, France

Exploiting Implicit Trust and Geo-social Network for Recommendation
Feiyang Li, Kai Han, Yue Li and Jiahao Zhang
A Workflow Scheduling Method for Cloudlet Management in Mobile Cloud
Jie Zhang, Lianyong Qi, Yuan Yuan, Xiaolong Xu and Wanchun Dou
Inspecting Influences on Likes and Comments of Photos in Instagram
Jianghua Huang, Changjian Wang, Majing Su, Qiong Dai and Md Zakirul Alam Bhuiyan
A Multi-features Fusion Method Based on Convolutional Neural Network for Vehicle Recognition
Shaobo Zhang, Qing Peng and Jing Liao
Generating Expert's Review from the Crowds' : Integrating a Multi-attention Mechanism with Encoder-Decoder Framework
Xiaofei Ding, Wenjun Jiang and Jiawei He
Personalized Search with Secure Updates in Educational Resources
Qiang Zhang, Guihua Duan and Guojun Wang

Session P&SA-5: 13:30-15:30, October 9 (Tuesday), Room 7

Chair: Javadpour Amir Mahmoud, Guangzhou University, China

Low-dimensional Vectors Learning for Influence Maximization
Feng Wang, Wenjun Jiang and Guojun Wang
Fine-Grained Task-dependency Of floating in Mobile Cloud Computing
Shengli Pan, Chun Liu, Deze Zeng, Hong Yao and Zhuzhong Qian
Spatial-Aware Deep Recommender System
Steven Mudda, Defu Lian, Silvia Giordano, Danyang Liu and Xing Xie
Secure Data Provenance in Cloud-centric Internet of Things via Blockchain Smart Contracts
Saqib Ali, Guojun Wang and Md Zakirul Alam Bhuiyan
Group-based Competitive Influence Maximization
Yajun Dai, Wenjun Jiang and Kenli Li

Session P&SA-6: 15:50-18:30, October 9 (Tuesday), Room 7

Chair: Javadpour Amir Mahmoud, Guangzhou University, China

TNERec: Topic-aware Network Embedding for Scientific Collaborator Recommendation
Xiangjie Kong, Mengyi Mao, Jiaying Liu, Bo Xu, Runhe Huang and Qun Jin
Utilizing the Bidirectional Effect of Evolutive Trust-Rating for Recommendation in E-commerce
Jie Yao and Wenjun Jiang
Coupled Collective Matrix Factorization
Liyang Zhang, Longbing Cao, Sheng Luo, Lei Gu, Yijin Chen and Yuanfeng Lian
Request Answering in Vehicular Ad-hoc Networks based on Adaptive Filters
Yongxuan Lai, Fan Yang, Xing Gao, Hailin Lin and Shaoyi Yin
Sentiment Classification Model Based on Clause Polarity and Artificial Judgement Rules via Convolutional Neural Network
Bin Jiang, Hefeng Zhang, Chao Lv and Chao Yang
Multidimensional QoS Resource Scheduling Method with Stakeholder Perspective in Clouds
Mingfeng Su, Pin Liu and Guojun Wang

Work-in-Progress Papers (WiP)

Session UIC-2: 13:30-15:30, October 10 (Wednesday), Room 7

Chair: Jing Liao, Hunan University of Science and Technology, China

Compressed Sensing and Implicit Cooperativity Based Data Gathering Algorithm in Mobile Crowdsensing Systems
Ruiyun Yu, Xingyou Xia and Yan Zhou
A Hybrid Approach for Recognizing Web Crawlers
Weiping Zhu, Jiangbo Qin, Ruoshan Kong and Zongjian He
A Epilepsy Drug Recommendation System by Implicit Feedback and Crossing Recommendation
Chen Chun, Lu Zhang, Xiaopeng Fan, Yang Wang, Chengzhong Xu and Renkai Liu
SHAstor: A Scalable HDFS-based Storage Framework for Small-Write Efficiency in Pervasive Computing
Lingfang Zeng, Wei Shi, Fan Ni, Song Jiang, Xiaopeng Fan, Chengzhong Xu and Yang Wang
GHHP: Genetic Hybrid Hierarchical Partitioning for Community Structure in Social Medias Networks
Radhia Toujani, Yasmine Chaabani and Jalel Akaichi
An Efficient Recognition Method for Incomplete Iris Image Based on CNN Model
Rongrong Shi, Yiming Wang, Yifeng Chen and Cheng Wu

Session UIC-3: 15:50-18:30, October 10 (Wednesday), Room 7

Chair: Urrahman Hafiz, Guangzhou University, China

Human Action Recognition: a Feature Point Trajectory and Space-time Interest Point Based Approach

Xinyi Chen and Yang Yi

Testbed for Wide-area Environment Observation

Xiaohan Liu

K-means Based Edge Server Deployment Algorithm for Mobile Edge Computing Environments

Bo Li, Keyue Wang, Duan Xue and Yijian Pei

Mining Learning Styles for Personalised eLearning

Khawla Alhasan, Liming Chen and Feng Chen

Autonomous Resource Scheduling for Real-time and Stream Processing

Yingchao Cheng and Zhongrun Zhou

Bed-exit Prediction Based on 3D Convolutional Neural Networks

Tian-Xiang Chen, Rong-Shue Hsiao, Chun-Hao Kao, Ding-Bing Lin and Bo-Ru Yang

POMon: From Simple Keyword Matching to Stream-based Live Probabilistic Topic Matching

Kun Ma, Xuwei Niu, Ziqiang Yu and Ke Ji

Adaptive Optimization Design of Vector Error Diffusion Algorithm and IP Core for FPGA

Pengfei Yang, Quan Wang, Wei Li and Zhiqiang Zhang

M. SESSIONS AND PAPERS IN SCI 2018

The 2nd IEEE International Conference on Smart City Innovations (SCI 2018)

Session SCI-1: 15:50-18:30, October 9 (Tuesday), Room 8

Chair: Khnmuhammad Faizan, Guangzhou University, China

A General Testing Framework Based on Veins for Securing VANET Applications

Liang Ming, Gang Zhao, Minhuan Huang, Xiaohui Kuang

Using Particle Swarm Optimization Method to Optimize the Carbon Sequestration Potential of Agricultural Afforestation in Beijing, China

Jingtao Yao, Xiangbin Kong, Rattan Lal

Towards a Standardized Identity Federation for Internet of Things in 5G Networks

Bernardo Santos, Van Thuan Do, Boning Feng, Thanh van Do

Security-Enhanced Wireless Multicast via Adaptive Fountain Codes over Distributed Caching Networks

Ying Xu, Qinghe Du, Houbing Song

A Quantitative Model of the Urban Rail Congestion Propagation under Oversaturated Conditions

Ziling Zeng, Taixun Li

Work-in-Progress Papers (WiP)

Improving the Station-level Demand Prediction by Using Feature Engineering in Bike Sharing Systems

Mu Hu, Pengcheng Dai, Huiping Lin, Guanlan Kong

Snap4City: a Scalable IOT/IOE Platform for Developing Smart City Applications

Claudio Badii, Elefeliou Getachew Belay, Pierfrancesco Bellini, Daniele Cenni, Fatmeh Hachem, Mino Marazzini, Marco

Mesiti, Paolo Nesi, Gianni Pantaleo, Michela Paolucci, Mirco Soderi, Stefano Valtolina, Imad Zaza

Leveraging the Internet of Things for Smart Waters: Motivation, Enabling Technologies and Deployment Strategies for Pakistan

Sabeeh Safdar, Mujahid Mohsin, Liaqat Ali Khan, Waseem Iqbal

N. SESSIONS AND PAPERS IN SmartWorld 2018

The 4th IEEE Smart World Congress (SmartWorld 2018)

Track 1: Smart World Theories and Models (SWTM)

Session Smart World-1: 13:30-15:30, October10 (Wednesday), Room 8

Chair: **Khnmuhammad Faizan, Guangzhou University, China**

Modeling Smart Cyber Physical Systems Based on Modelicam

Lichen Zhang

A Secure Connectivity Model for Internet of Things Analytics Service Delivery

Hussain Al-Aqrabi and Richard Hill

A Scalable Model for Secure Multiparty Authentication

Hussain Al-Aqrabi and Richard Hill

Characteristics Analysis and Impact Cluster on Urban Rail Transit Perturbations: a Real Case in Beijing

Mingming Wang, Li Wang, Xinyue Xu and Yong Qin

Work-in-Progress Papers (WiP)

An Abnormal Behavior Detection Based on Deep Learning

Jiaxiang Ou, Junwei Zhang and Jingsheng Lei

Monitoring System to Strive Against Fall Armyworm in Crops. Case Study: Maize in Rwanda

Damien Hanyurwimfura, Fauste Ndikumana and Eric Nizeyimana

Track 2: Smart World Technologies (SWT)

Session SmartWorld-2: 15:50-18:30, October10 (Wednesday), Room 8

Chair: **Richard Hill, University of Huddersfield, UK**

Graph CNNs for Urban Traffic Passenger Flows Prediction

Jing Li, Hao Peng, Md Zakirul Alam Bhuiyan and Lin Liu

Individualized Smart Charging to Mitigate the Growing Electrical Peak Demand from EVs as Home Appliances

Ashutosh Shivakumar, Miteshkumar Vasoya, Sean Morrison and Yong Pei

Behavior Recognition of Moving Objects Using Deep Neural Networks

Jiasong Zhu, Weidong Lin, Ke Sun, Xianxu Hou, Bozhi Liu and Guoping Qiu

Optimization of Bus Lines Based on Passenger Group Moving Behaviors

Syed Muhammad Asim Ali Rizvi, Weifeng Lv, Bowen Du, Zhipu Xie and Runhe Huang

Work-in-Progress Papers (WiP)

Designing Recommender System for Corporate Education

Monisha Bhattacharya, Gunjan Bansal, Shantanu Biswas, Dhruv Gupta

Multicast Tree Generation Technique Using Reinforcement Learning in SDN Environme

Ho-Jin Heo, Namgi Kim and Byoung-Dai Lee

Smart Vehicles: The Data Privacy Smog

Madeline Cheah, Stephanie Haynes and Paul Wooderson

A Smart Office System with Face Detection at the Edge

Christopher Prentice and Georgios Karakonstantis

O. SESSIONS AND PAPERS IN ATC 2018

The 15th IEEE International Conference on Advanced and Trusted Computing (ATC 2018)

Session ATC-1: 13:30-15:30, October 9 (Tuesday), Room 9

Chair: Arif Muhammad, Guangzhou University, China

A Centralized and Conflict-free Routing Table Update Method Through Triplets' Lists Vector in SDN Architectures

Jean Frederic Myoupo, Yannick Florian Yankam and Vianney Kengne Tchendji

Verified Programs for Frequent Itemset Mining

Frederic Loulergue and Christopher Whitney

A Kalman Filter Based Hill-climbing Strategy for Application Server Configuration

Weiyu Ye, Yanxiang Tong and Chun Cao

MTF: Mitigating Link Flooding Attacks in Delay Tolerant Networks

Zhaoxu Wang, Huanchun Zhou, Bohao Feng, Wei Quan and Shui Yu

A Hybrid MIP-based Heuristic for the Optimal Design of DVB-T2 Networks

Fabio D'Andreagiovanni, Hicham Lakhlef and Antonella Nardin

Session ATC-2: 15:50-18:30, October 9 (Tuesday), Room 9

Chair: Arif Muhammad, Guangzhou University, China

Software Defect Prediction Model Sharing Under Differential Privacy

Dun Zhang, Xiang Chen, Zhanqi Cui and Xiaolin Ju

Crowdsensing Based Barometer Sensor Calibration Using Smartphones

Haibo Ye, Xuansong Li and Kai Dong

Monitoring and Predicating Accidents for Interlocking Systems based on SHA

Yan Wang and Xiaohong Chen

Consideration on Propagation of Disaster Information among Different Types of Terminals for Grass-roots Information

Distribution System Using MANET

Eiji Utsunomiya and Yuya Minami

Work-in-Progress Papers (WiP)

ALChecker: A Tool for Checking Mobile Ambients

Xuansong Li, Wei Song and Haibo Ye

A Prefetching Scheme for Multi-tiered Storage Systems

Hsung-Pin Chang, Chia-Yu Chen and Chien-Yi Liu

Real-time Push-based Data Forwarding for Target Tracking in Vehicular Named Data Networking

Annadil Alinani and Karim Alinani

Interactive Bulk Synchronous Parallel Functional Programming in a Browser

Julien Tesson and Frederic Loulergue

P. SESSIONS AND PAPERS IN ScalCom 2018

The 18th IEEE International Conference on Scalable Computing and Communications (ScalCom 2018)

Session ScalCom-1: 13:30-15:30, October10 (Wednesday), Room 9

Chair: Yamin Li, Hosei University, Japan

Optimizing Network I/O Virtualization for Scale-out Processor

Baozi Chen, Qingbo Wu, Yusong Tan, Lei Wang, Xiaoli Sun, Peng Zou and Liu Yang

Connectivity Probability Based Spray and Wait Routing Algorithm in Mobile Opportunistic Networks

Weihua Huang, Zhong Ma, Xinfu Dai and Mingdi Xu

MiKANT: a Mirrored K-Ary N-Tree for Reducing Hardware Cost and Packet Latency of Fat-tree and Clos Networks

Yamin Li and Wanming Chu

A Distributed Data Allocation Scheme for Autonomous Nodes

Kostas Kolomvatsos, Panagiotis Oikonomou, Maria Koziri and Thanasis Loukopoulos

Optimal Placement for Smart Mobile Access Points

Amin Majd, Masoud Daneshlab and Elena Troubitsyna

Session ScalCom-2: 15:50-18:30, October10 (Wednesday), Room 9

Chair: Wenyin Yang, Foshan University, China

Performance Evaluation of In-packet Membership Querying Algorithm for Large-scale Networks

Yun Zheng and Wen-Kang Jia, Yi Wu

An Autonomous Model Construction Mechanism in Dynamic Sensor Networks

Liqiu Ma, Yuanyuan Bao and Wai Chen

A Communication-aware Energy-efficient Graph-coloring Algorithm for VM Placement in Clouds

Nikos Tziritas, Thanasis Loukopoulos, Samee Khan, Cheng-Zhong Xu and Albert Zomaya

Work-in-Progress Papers (WiP)

A Fast and Accurate Replica Selection Mechanism Using Explicit Multicast for CDNs

Yun Zheng and Wen-Kang Jia, Yi Wu

Deploying Structured Media Server Cluster in Media Cloud Using Ant Colony Optimization

Xiang Gao, Weizhan Zhang, Junquan Liu and Qinghua Zheng

Hypergraph Partitioning for Big Data Applications

Wenyin Yang, Li Ma, Ruchun Cui and Guojun Wang

Q. SESSIONS AND PAPERS IN CBDCOM 2018

The 4th IEEE International Conference on Cloud and Big Data Computing (CBDCOM 2018)

Session CBDCOM-1: 13:30-15:30, October 9 (Tuesday), Room 6

Chair: Monisha Bhattacharya, Artificial Intelligence Lab, Learning and Knowledge Management, Accenture

Mining Taxi Pick-up Hotspots Based On Spatial Clustering

Hong Qi and Panpan Liu

Enhancing the Impression on Cities: Mining Relations of Attractions with Geo-tagged Photos

Zhiqiang Zou, Xu He, Xingyu Xie and Qunying Huang

A Deep Convolutional Neural Network-based Label Completion and Correction Strategy for Supervised Medical Image Learning

Rui Cao, Kehua Guo, Jianhua Ma and Jian Kang

Large Scale Spectral Clustering Using Sparse Representation Based on Hubness

Xiucan Ye, Hongmin Li, Tetsuya Sakurai and Zhi Liu

A Scalable and Efficient Multi-label CNN-based License Plate Recognition On Spark

Bin Xue, Xin Liu, Weishan Zhang, Jiehan Zhou, Hao Lv, Zhanmin Zhang and Min Guizhi

Data Mining from Haier Air-conditioner Equipment Running Data for Fault Prediction

Xin Liu, Xiaomiao Zhang, Weishan Zhang, Wei Wei, Yongjun Zhao, Yongke Xi and Shuai Cao

Session CBDCOM-2: 15:50-18:30, October 9 (Tuesday), Room 6

Chair: Saqib Ali, Guangzhou University, China

Joint Computation Offloading and Routing Optimization for UAV-edge-cloud Computing Environments

Baichuan Liu, Huawei Huang, Song Guo, Wuhui Chen and Zibin Zheng

Fast VM Startup by Cooperative Image Caching for Cloud Data Centers

Yifan Zhang, Zhechao Li, Lei Yang and Weigang Wu

Detection Mechanism of FDI attack feature based on Deep Learning

Qiang Pu, Qin Hao and Han Hu

Backward Mining Technology Research on Continuous Attacks in Wide Time Domain

Liang Guo, Weijian Li, Han Hu and Chunlin Chen

A Routing Protocol Considering Turning Behavior of Vehicles In VANETs

Hiroya Matsumoto, Bo Gu, Xiaoyan Wang and Osamu Mizuno

DNN-based Image Classification for Software GUI Testing

Huijuan Lu, Li Wang, Minchao Ye, Ke Yan and Qun Jin

Session CBDCOM-3: 13:30-15:30, October 10 (Wednesday), Room 6

Chair: Saqib Ali, Guangzhou University, China

A Video Segmentation Strategy for Video Processing Applications on Hadoop Clusters

Eihab Saati Soruji and Shikharesh Majumdar

Approximate Nearest Neighbor Search Based on Multi-Table Index

Miao Jianhui, Li Zhiyang and Zhou Zeyan

An Improved Bloom Filter in Distributed Crawler

Weipeng Zhou, Pan Wang, Xuejiao Chen and Feng Ye

A Novel Intrusion Detection Method Combining Unsupervised and Supervised learning

Hanwen Wang, Biao Han, Jinshu Su and Xiaoyan Wang

Machine-vision-based Segmentation and Classification Method for Intelligent Roller Surface Monitoring System

Depeng Shi, Jiehan Zhou, Jirui Xu, Jun Yang, Xuekun Li, Zeming Zhao, Junchuang Chen and Yiming Rong

Work-in-Progress Papers (WiP)

Overdue Prediction of Bank Loans Based on LSTM-SVM

Xin Li and Huakang Lee

Session CBDCOM-4: 15:50-18:30, October 10 (Wednesday), Room 6

Chair: Saqib Ali, Guangzhou University, China

R-PCNN Method to Rapidly Detect Objects on THz Images in Human Body Security Checks

Hong Xiao, Rongyue Zhang, Hao Wang, Feng Zhu, Cheng Zhang, Hongning Dai and Yubin Zhou

INDICS: an Industrial Internet Platform

Xudong Chai, Baocun Hou and Jiehan Zhou

Individual Analysis Model and Related Research in Social Networks

Yan Jia, Yong Quan, Weihong Han, Binxing Fang, Qiang Liu and Lu Deng

Banking Comprehensive Risk Management System based on Big Data Architecture of Hybrid Processing Engines and Databases

Shenglan Ma, Fangkai Xie, Hao Wang, Hong-Ning Dai, Ran Tao, Ruihua Yi and Tongsen Wang

Landscapes and Emerging Trends of Virtual Reality in Recent 30 Years: a Bibliometric Analysis

Zeng Li, Zili Li, Zhao Zhao and Mao Meixin

Work-in-Progress Papers (WiP)

New Generation Artificial Intelligence-driven Intelligent Manufacturing (NGAIIM)

Bohu Li, Xudong Chai and Jiehan Zhou

SDN-based Handover Approach in IEEE 802.11p and LTE Hybrid Vehicular Networks

Ran Duo, Celimuge Wu, Tsutomu Yoshinaga and Yusheng Ji

A Prophet-based DTN Protocol for VANETs

Zhaoyang Du, Celimuge Wu, Tsutomu Yoshinaga and Yusheng Ji

R. SESSIONS AND PAPERS IN IoP 2018

The 4th IEEE International Conference on Internet of People (IoP 2018)

Session IoP-1: 13:30-15:30, October 9 (Tuesday), Room 11

Chair: Mehdi gheisari, Guangzhou University, China

Cyber-enabled Human-centric Smart Home Architecture

Sahraoui Dhelim, Huan Sheng Ning, Mohammed Amine Bouras and Jianhua Ma

Users' Privacy Concerns in IoT Based Applications

Ismeni Psychoula, Deepika Singh, Liming Luke Chen, Feng Chen and Andreas Holzinger

A Deep Learning Approach to Detecting Engagement of Online Learners

M Ali Akber Dewan, Fuhua Lin, Dunwei Wen, Mahbub Murshed and Zia Uddin

HMM of Telecommunication Big Data for Consumer Churn Prediction

Xingyou Xia, Lingbing Zeng and Ruiyun Yu

Web Behavior Detection Based on Deep Neural Network

Binbin Yong, Xin Liu, Yan Liu, Hang Yin, Liang Huang and Qingguo Zhou

Session IoP-2: 15:50-18:30, October 9 (Tuesday), Room 11

Chair: Sahraoui Dhelim, University of Science and Technology Beijing, China

Automatic Detection of Optic Disc in Retina Image Using CNN and CRF

Wen-Bo Huang, Dunwei Wen, M. Ali Akber Dewan, Ke Wang and Yang Yan

Fast NTRU Encryption in GPU for Secure IoP Communication in Post-quantum Era

Wai-Kong Lee, Sedat Akleylek, Bok-Min Goi, Wun-She Yap and Chee-Keong Denis Wong

Data-driven Intelligent Maintenance Planning of Smart Meter Repairs for Large-scale Smart Electric Power Grid

Weifeng Wang, Hao Chen, Bing Lou, Ning Jin, Xizhong Lou and Ke Yan

Comparison of Measurements by the Betweenness Centrality and Subjective Experiment on the Word Priority of Tweets

Kosuke Takagi, Kiichi Tago, Kenichi Ito and Qun Jin

Vote Parallel SVM: an Extension of Parallel Support Vector Machine

Yan Song, Qun Jin, Ke Yan, Huijuan Lu and Julong Pan

Trust model and Anti-Attack Analysis for Social computing

Jianguo Chen, Wai K Yeap, Huijuan Lu and Hangxia Zhou

Session IoP-3: 13:30-15:30, October 10 (Wednesday), Room 14

Chair: Mehdi gheisari, Guangzhou University, China

Learning Combinatorial Global and Local Features on 3D Point Clouds

Luqing Luo, Lulu Tang and Zhi-Xin Yang

Robust GA Based Global Path Planning for IoP Oriented Mobil Robot

Ruidong Xi, Zhi-Xin Yang, Lulu Tang and Zhigang Wu

Socially-inspired Peer Discovery for D2D Communications

Hui Wu and Yufeng Wang

Incentive Mechanism for User Collaboration on Trajectory Privacy Preservation

Meng-Qi Gao, Jian-Min Han and Jian-Feng Lu

A Succinct Provable Data Possession Mechanism for Lightweight Clients in Network Computing

Yang Xu, Quanrun Zeng, Guojun Wang, Ju Ren and Yaoxue Zhang

Session IoP-4: 15:50-18:30, October 10 (Wednesday), Room 14

Chair: Mehdi gheisari, Guangzhou University, China

Work-in-Progress Papers (WiP)

Hiding RFID in the Image Matching Based Access Control to a Smart Building

Ahmed Al-Sudani, Wanlei Zhou and Sheng Wen

Wear-I: a Multi-Wearable Organic System for Smarter Individual Services

Jianhua Ma

A Review of Multimodal Facial Biometric Authentication Methods in Mobile Devices and Recommendation for HMD Authentication.

Ilesanni Olade, Hai-Ning Liang and Charles Fleming

Everyday Life Approach for Smart Health: a People-Centered Design Process for Co-creating Self-tracking Systems

Wu Xue and Han-Teng Liao

Towards Developing an Effective Algorithm Visualization Tool for Online Learning

Katarzyna Romanowska, Gurpreet Singh, M Ali Akber Dewan and Fuhua Lin

Online Vocabulary QuizMAster Game for College English Test Band 4

Lanlan Huang, Fuhua Lin and Zengxiang Wang

Design of automatic identification gateway system for different IoT devices and services

Hyun-Seong Lee, Jae-Gwang Lee, Jae-Pil Lee and Jae-Kwang Lee

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SRTS 2018 Organizing Committee

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Map of Conference Venue

Guangdong Hotel, Guangzhou, China - A Four-Star Hotel
(广东大厦)

Address: 309 Dongfengzhong Road, Guangzhou, China (Metro Line 2 Memorial Hall Station, Exit D)
<http://www.guangdong-hotel.com/index.php?locale=en-us>



Public Transportation

(1) From Guangzhou Baiyun International Airport (IATA: CAN) to Guangdong Hotel: Take a taxi (around RMB100); or first take north extension of metro line 3 (get off at JIAHEWANG station), then take metro line 2 (get off at JINIANTANG station), take off at Sun Yat-sen Memorial Hall Station, Exit D2, then walk around 500m to the hotel. Similar for the return trip.

广州白云国际机场到广东大厦：大约 31.7 公里，乘坐地铁 3 号线北延段，经过 3 站，到达嘉禾望岗站，再乘坐地铁 2 号线（嘉禾望岗方向），经过 10 站，到达纪念堂站下车，然后从 D2 出口再步行约 500 米，到达广东大厦。或乘坐出租车（约 100 元）；返程类似。

(2) From Guangzhou Railway Station to Guangdong Hotel: Take a taxi (around RMB20); or take metro line 2 (get off at JINIANTANG station), take off at Sun Yat-sen Memorial Hall Station, Exit D2, then walk around 500m to the hotel. Similar for the return trip.

广州火车站到广东大厦：从广州火车站乘坐地铁 2 号线（嘉禾望岗方向），2 站后到达纪念堂站下车，然后从 D2 出口再步行约 500 米，到达广东大厦。或乘坐出租车（约 20 元）；返程类似。

(3) From Guangzhou South Railway Station (High Speed Rail Station) to Guangdong Hotel: Take a taxi (around RMB67); or take metro line 2 (JIAHEWANGGANG DIRECTION), after 13 stops later, take off at Sun Yat-sen Memorial Hall Station, Exit D2, then walk around 730m to the hotel. Similar for the return trip.

广州南站到广东大厦：从广州南站（高铁站）乘坐地铁 2 号线（嘉禾望岗方向），13 站后到达纪念堂站下车（约 30 分钟），然后从 D2 出口再步行 730 米，到达广东大厦。或乘坐出租车（约 67 元）；返程类似。

Introduction to Guangzhou University

Guangzhou University is a comprehensive university named after the third largest city in China. In the year 2000, Guangzhou University merged with several other universities to become a single entity which offered a wider diversity of courses. Today, Guangzhou University boasts a history of 90 years, is becoming one of the best in China, and is being developed with the support of both the governments of Guangdong Province and Guangzhou City.

The university has two campuses, the University Town Campus and the Guihuagang Campus in downtown. Rich teaching resources and complete research facilities are available here. The library of Guangzhou University boasts a collection of over 2.9 million books with a total number of 3.04 TB digital resources and equipment worth 558 million RMB.

The university boasts a talent team, which is comprised of representatives from “Academicians from Chinese Academy of Sciences”, “Academicians from Chinese Academy of Engineering”, “National ‘One-Thousand People Plan’ Specially-invited Experts”, “Scholars of Changjiang River” and “Distinguished Youth Awardee of National Natural Science Foundation of China”. These faculty members have undertaken a series of 973 programs, 863 programs, key projects for humanitarian and social science, projects of the national natural science foundation, and projects of the national social science foundation.

Guangzhou University has established exchange and cooperative relationship with more than 200 universities and institutions from 33 countries and regions all around the world. In addition to its internationalization, the university continues to integrate its development with building Guangzhou into a national hub city while making great strides in its capacity to serve economic development and win numerous awards. For instance, the university has participated in the design of the Hong Kong-Zhuhai-Macau Bridge, and the “AVLM Intelligent Centralized Synchro Performance Control System” which has been successfully applied in the sound and image synchronized control of the lights on the banks of the Pearl River.

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