The 2015 Smart World Congress (SWC 2015)

2015 IEEE 12th International Conference on Ubiquitous Intelligence and Computing (UIC 2015)

2015 IEEE 12th International Conference on Advanced and Trusted Computing (ATC 2015)

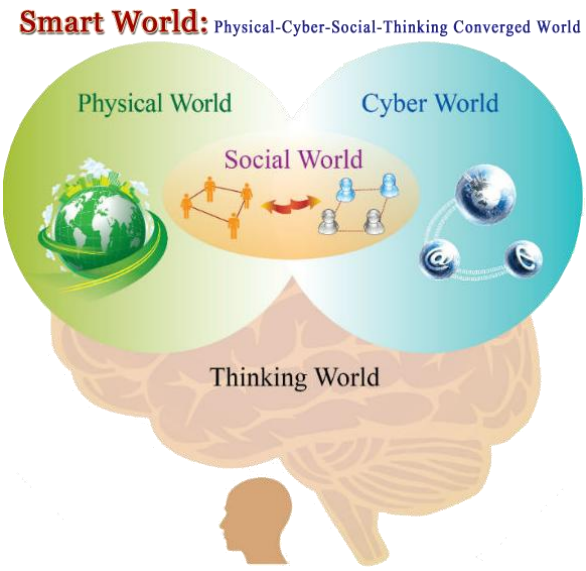
2015 IEEE 15th International Conference on Scalable Computing and Communications (ScalCom 2015)

2015 IEEE International Conference on Cloud and Big Data Computing (CBDCom 2015)

2015 IEEE International Conference on Internet of People (IoP 2015)

August 10-14, 2015, Beijing, China

Conference Program and Information Booklet



Organized by
University of Science and Technology Beijing, China

Sponsored by
IEEE, IEEE Computer Society,
IEEE Technical Committee on Scalable Computing (TCSC)

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Welcome Message

Dear Friends,

With the rapid progresses of information science and technology, novel disciplinary fields have emerged, such as Mobile Internet, Internet of Things (IoT), Cyber-Physical System (CPS), Social Computing, Cloud Computing, Big Data, Brain Informatics, and Internet of People (IoP), etc.. Their research and application have being speeded up the formation of cyber space, which will further lead to a subversive change for information science development as well as human production and living.

The development of these technologies directly contribute to the deep convergence between the new cyber space and the traditional one including physical, social and thinking spaces towards a quaternionic convergent space, the Cyber-Physical-Social-Thinking Hyperspace, on which a Smart World is being created. For this, we timely organize the "2015 Smart World Congress" that includes five IEEE international conferences (UIC, ATC, ScalCom, CBDCom, and IoP) with the theme of innovative computing, communication, data, intelligence and services for the smart world.

There are many fundamental issues in the smart world, i.e. how will "people" exist in the physical, social, cyber and thinking quaternionic hyperspace? Whether ubiquitous smart things would be really self-cognitive and secure enough to safeguard human and environments? The Internet/Web possibly becomes a out of control super monster or a super living organism? Therefore, besides the five conferences as well as workshops and seminars, we are also making two special events, "Top10Cs Open Forum" and "Smart World Summit". The former is a public forum where everybody can put forward the challenges about the smart world, and then top 10 challenges will be generated based on the selections of crowd and experts. And the latter is a high-level panel for distinguished researchers to present their insights about key challenges in creating the smart world.

You are cordially welcomed to participate in the 2015 Smart World Congress to share your ideas, visions and researches for the betterment of the exciting but challenging smart world!

Cybermatics and Brain Informatics
S&T International Cooperation Base
赛博（网电空间）北京市国际科技合作基地

Jianhua Ma and Laurence T. Yang
2015 Smart World Congress Steering Chairs

Huansheng Ning
2015 Smart World Congress Executive Chair

Congress Time Schedule

August 9:

PM: 15:30-19:30, Registration

August 10:

AM: 7:30-18:00, Registration

8:30-12:10, Workshops, UFirst Symposium, Tutorials, Keynotes, China-Japan Bilateral Seminar

10:20-10:40, Coffee Break

PM: 13:35-18:05, Workshops, UFirst Symposium, Tutorials, Keynotes, China-Japan Bilateral Seminar

15:40-16:00, Coffee Break

19:00, Reception

August 11:

AM: 8:30-9:15, Opening Ceremony

9:15-10:35, Keynotes

10:35-10:55, Coffee Break

10:55-12:30, Summit I

PM: 14:00-15:35, Summit II

15:35-15:50, Coffee Break

15:50-17:00, Top10Cs Panel

17:00-18:15, SY Symposium

August 12:

AM: 8:15-12:30, Keynotes, Sessions of UIC, ATC, ScalCom, CBDCom, IoP Program

10:15-10:30, Coffee Break

12:30-14:00, UIC Poster, Video Contest

PM: 14:00-18:00, Keynotes, Sessions of UIC, ATC, ScalCom, CBDCom, IoP Program, IEEE Volunteer Training

15:40-16:00, Coffee Break

19:00, Banquet/Awards

August 13:

AM: 8:30-12:30, Sessions of UIC, ATC, ScalCom, CBDCom Program

10:10-10:30, Coffee Break

PM: 14:00-18:00, Cybermatics Forum Keynotes

16:00-16:20, Coffee Break

IEEE UIC/ATC/ScalCom/CBDCom/IoP 2015 Program at a Glance

Sunday, August 9, 2015, Park Plaza Beijing Science Park Hotel			
15:30-19:30	Registration, 3rd Floor Lobby		
Monday, August 10, 2015, Park Plaza Beijing Science Park Hotel			
Workshops, UFirst Symposium, Tutorials, Keynotes, China-Japan Bilateral Seminar			
7:30-18:00	Registration, 3rd Floor Lobby		
8:30-10:20	Seminar (Cyber-biology hybrid system)	Tutorials (Zhongshan Zhang, Guanling Chen, 55 minutes*2)	China-Japan Bilateral Seminar
	Indigo Grand Ballroom 1	Indigo Grand Ballroom 2	Indigo Grand Ballroom 3
	Workshop (SAGAWARE)	Workshop(WSNPS)	
	Amber Jinhui 1	Amber Jinhui 3	
	UFirst Session 1 (Pervasive Computing and Its Application)	UFirst Session 2 (Intelligent Computing)	
	Saffron Tianhong 2	Saffron Tianhong 3	
10:20-10:40	Coffee Break		
10:40-12:10	Workshop (HIISSA)	Keynotes (Seungmin Rho, 35 minutes) Tutorials (Raghu Ganti, 55 minutes)	China-Japan Bilateral Seminar
	Indigo Grand Ballroom 1	Indigo Grand Ballroom 2	Indigo Grand Ballroom 3
	Workshop(TELCPASS,CSUI)	Workshop(UWSS)	
	Amber Jinhui 1	Amber Jinhui 3	
	UFirst Session 1 (Pervasive Computing and Its Application)	UFirst Session 2 (Intelligent Computing)	
	Saffron Tianhong 2	Saffron Tianhong 3	
12:10-13:35	Lunch & Break		
13:35-15:40	Workshop (OECA, BR&A)	Tutorials (Wenbing Zhao, 55 minutes) Keynotes (Chunming Hu, Zhiwen Yu, 35 minutes*2)	China-Japan Bilateral Seminar
	Indigo Grand Ballroom 1	Indigo Grand Ballroom 2	Indigo Grand Ballroom 3
	Workshop (CV2N,IIMM)	Workshop (UUMA)	
	Amber Jinhui 1	Amber Jinhui 3	
	UFirst Session 3 (Reliable Communication and Security)	UFirst Session 4 (New Frontiers)	
	Saffron Tianhong 2	Saffron Tianhong 3	
15:40-16:00	Coffee Break		
16:00-18:05	Workshop (OECA)	Tutorials (Yunxin Liu, 55 minutes) Keynotes (Yuanqing Xia, Zaiyue Yang, 35 minutes*2)	China-Japan Bilateral Seminar
	Indigo Grand Ballroom 1	Indigo Grand Ballroom 2	Indigo Grand Ballroom 3
	Workshop (PTUC)	Workshop (UUMA)	
	Amber Jinhui 1	Amber Jinhui 3	
	UFirst Session 3 (Reliable Communication and Security)	UFirst Session 4 (New Frontiers)	
	Saffron Tianhong 2	Saffron Tianhong 3	
19:00	Reception		

Tuesday, August 11, 2015, Park Plaza Beijing Science Park Hotel			
Opening Ceremony, Keynotes, Summit, Top10Cs Panel, SY Symposium Program			
8:30-9:15	Opening Ceremony		
	Indigo Grand Ballroom 1&2&3		
9:15-10:35	Keynotes (Mohamed Jamal Deen, Pierangela Samarati, Han-Chieh Chao, 25 minutes*3)		
	Indigo Grand Ballroom 1&2&3		
10:35-10:55	Coffee Break		
10:55-12:30	Summit I(Chair, 5 minutes; Speaker, 15 minutes*6)		
	Indigo Grand Ballroom 1&2&3		
12:30-14:00	Lunch & Break		
14:00-15:35	Summit II(Chair, 5 minutes; Speaker, 15 minutes*6)		
	Indigo Grand Ballroom 1&2&3		
15:35-15:50	Coffee Break		
15:50-17:00	Top10Cs Panel		
	Indigo Grand Ballroom 1&2&3		
17:00-18:15	SY Symposium(SYS)		
	Indigo Grand Ballroom 1&2&3		
Wednesday, August 12, 2015, Park Plaza Beijing Science Park Hotel			
Keynotes, Sessions of UIC, ATC, ScalCom, CBDCom, IoP Program			
8:15-10:15	Keynotes (Julien Bourgeois, Huadong Ma, Xiaowu Chen, 40 minutes*3)		
	Indigo Grand Ballroom 1&2&3		
10:15-10:30	Coffee Break		
10:30-12:30	Keynotes (Habib F.Rashvand, Hai Jin, Bruno Defude, 40 minutes*3)		
	Indigo Grand Ballroom 1&2&3		
12:30-14:00	UIC Poster & Video Contest		
	3rd Floor Lobby		
12:30-14:00	Lunch & Break		
14:00-15:40	IoP Session 1 (Digital World and System)	CBDCom Session 4 (Cloud for Analytics)	UIC Session 1 (Home and Health)
	Amber Jinhui 1	Amber Jinhui 2	Amber Jinhui 3
	ScalCom Session 1 (Modelling and Simulation in Applications)	ScalCom Session 2 (Algorithms and Data Structures for Scalability-Rethinking)	ATC Session 1 (Services and Clouds)
	Saffron Tianhong 1	Saffron Tianhong 2	Saffron Tianhong 3
	ATC Short Session 1 (Models and Systems)	UIC Session 2 (Social and Crowd)	CBDCom Session 2 (Big Data Processing Framework)
	Indigo Grand Ballroom 1	Indigo Grand Ballroom 2	Indigo Grand Ballroom 3
	IoP Session 2 (Social Networks and Data Mining I)		
	Excutive Board Room		
15:40-16:00	Coffee Break		
16:00-18:00	IoP Session 3 (Social Networks and Data Mining II)	CBDCom Session 4 (Cloud for Analytics)	UIC Session 3 (Smart Transportation)
	Amber Jinhui 1	Amber Jinhui 2	Amber Jinhui 3
	ScalCom Session 1 (Modelling and Simulation in Applications)	ScalCom Session 2 (Algorithms and Data Structures for Scalability-Rethinking)	ATC Session 1 (Services and Clouds)
	Saffron Tianhong 1	Saffron Tianhong 2	Saffron Tianhong 3

	ATC Short Session 3 (IoP and Intelligence)	IEEE Volunteer Training	CBDCom Session 1 (Big Data Applications)
	Indigo Grand Ballroom 1	Indigo Grand Ballroom 2	Indigo Grand Ballroom 3
	ATC Short Session 2 (Service and Clouds)		
	Excutive Board Room		
19:00	Banquet/Awards		
Thursday, August 13, 2015, Park Plaza Beijing Science Park Hotel			
Cybermatics Forum Keynotes, Sessions of UIC, ATC, ScalCom, CBDCom Program			
8:30-10:10	UIC Session 4 (Location and Activity)	CBDCom Session 5,3 (Big Data Management and Infrastructure，Cloud Computing Innovations)	UIC Session 6 (Security and Privacy)
	Amber Jinhui 1	Amber Jinhui 2	Amber Jinhui 3
	ScalCom Session 3 (Mobile and Wireless Communications)	ATC Session 2 (IoT)	ATC Session 3 (Knowledge and Intelligences)
	Saffron Tianhong 1	Saffron Tianhong 2	Saffron Tianhong 3
10:10-10:30	Coffee Break		
10:30-12:30	UIC Session 5 (System and Context)	CBDCom Session 3 (Cloud Computing Innovations)	UIC Session 7 (Sensor and Phone Networks)
	Amber Jinhui 1	Amber Jinhui 2	Amber Jinhui 3
	ScalCom Session 3 (Mobile and Wireless Communications)	ATC Session 2 (IoT)	ATC Session 3 (Knowledge and Intelligences)
	Saffron Tianhong 1	Saffron Tianhong 2	Saffron Tianhong 3
12:30-14:00	Lunch & Break		
14:00-18:00	Cybermatics Forum Keynotes		
	Saffron Tianhong 1		
16:00-16:20	Coffee Break		

Smart World Summit and Keynotes

- **Summit Keynotes** (listed in alphabet order by the first name)

Chair:

Stephen S.Yau

IEEE Fellow

Arizona State University, USA

http://stephensyau.org/

Speaker:

Title: Internet-of-Things Platforms: The Next IT Frontier

Abdelsalam(Sumi) Helal

IEEE Fellow

University of Florida, USA

http://www.cise.ufl.edu/~helal/index.php

Title: Towards Software Engineering for Individualization

Carl K. Chang

IEEE Fellow

Iowa State University, USA

http://www.cs.iastate.edu/people/carl-chang

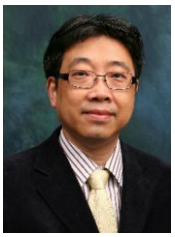
Title: Toward a Smart World of Parallel Societies

Feiyue Wang

IEEE Fellow

University of Chinese Academy of Sciences, China

http://people.ucas.ac.cn/~wangfeiyue?language=en



Title: A World with Emotions

Jiannong Cao

IEEE Fellow

Hong Kong Polytechnic University, Hong Kong

http://www4.comp.polyu.edu.hk/~csjcao/hr.html

Title: Localization Challenges for Emergence of a Smart World

Kaveh Pahlavan

IEEE Fellow

Worcester Polytechnic Institute, USA

http://www.cwins.wpi.edu/personnel/kaveh.html

Title: Cloud in the Enterprise-An Integrated View

Mazin Yousif

IEEE Fellow

Royal Dutch Shell CTO at T-Systems, Int., Holland

Title: Systems Health Monitoring and Management within the Internet of Things

Michael Pecht

IEEE Fellow

University of Maryland, USA

http://www.umerc.umd.edu/faculty/pecht

Title: On the Applications of Wireless Networks to Smart Cities

Mohammad S. Obaidat

IEEE Fellow and SCS Fellow

Fordham University., USA

http://www.cis.fordham.edu/faculty/Mohammad-Obaidat.html

Title: Green IoT for the Smart World

Victor Leung

IEEE Fellow

University of British Columbia, Canada

http://www.ece.ubc.ca/~vleung/

Title: Biometric Technologies for Smart Living in Cyber-Physical-Social Environments

Vincenzo Piuri

Fellow & Vice President of IEEE

University degli Studi di Milano, Italy

http://homes.di.unimi.it/piuri/index.php?pageid=home

Title: Manageability Challenges for Internet of Things

Yen-Kuang Chen

IEEE Fellow

National Taiwan University, Taiwan

http://cc.ee.ntu.edu.tw/~ykchen/

- ## Committee

Chair:

Stephen S. Yau, Arizona State University, USA

Members:

Jianhua Ma, Hosei University, Japan
Laurence T. Yang, St. Francis Xavier University, Canada
Huansheng Ning, University of Science and Technology Beijing, China

The Open Forum on Top 10 Challenges for Smart World (Top10Cs)

Introduction

Our world is rapidly changing and swiftly evolving towards so-called smart worlds. The smart worlds starting with smart things such as the smart objects, smart city, smart manufacture, smart systems, will eventually encompass all aspects of the physical world, social world and mental world. A cyber-enabled completely new digital space featured with ubiquitous interconnections, integrations and interactions of physical, social, mental and other spaces will continuously bring out more and more changes. Cyberspace is actually the combinational outcome of various technologies including computers, communications, materials, intelligence and studies in perception, cognition, biology, sociology, etc., as well as advanced computing like the Internet/Web, pervasive networks, ubiquitous sensing and computing, the internet of things, the cloud, big data and so forth. These smart worlds are set to be the next important stage in human history. We have to be aware of the essential problems and crucial issues affecting in building truly smart worlds that benefit humanity, and simultaneously safeguard the natural environment for sustainable development and evolution. Therefore, this is the time to foresee future trends and identify what the grand challenges for smart worlds and lives are.

A single person cannot solve all these challenges, but the intelligence exists in the wisdom of the crowd to achieve these through a collective effort. Therefore, the Top10Cs open forum is trying to offer a common platform to enable us to work together to think through these basic challenges and further identify the top 10 challenges for smart worlds, then define the research directions of increasing interest in this realm. If you have any ideas or suggestions, welcome to share them through the submit page. Also, you can select for the ideas of which you are in favor of. The proposers of and selectors for the top 10 challenges will be given awards. We believe that coming up with solutions to these emerging challenges will facilitate the development of smart worlds.

Schedule

The Top10Cs Open Forum will be organized with a series of events/outputs by dividing into four stages:

- Challenge Collection Stage: May 1 ~ July 8

At this stage, we solicit challenges from people around the world. No matter what your background or viewpoint, you are welcome to submit your challenges via the "Sumbit" section in this page. You can also submit you challenges by sending email to top10cs@163.com, the contents of the email are expected to consist of title and brief description of the proposed challenges, your name, email address and affiliation. There is no limit on the number of challenges for one. The Top10Cs Committee will track what you have submitted and discussed over different social media, summarize the submitted challenges, important opinions and other information.

- Challenge Selection Stage: July 13 ~ August 2

A whole list of all submitted challenges will be posted on the Top10Cs website for open selection. The selection will be cast by two groups of people, the public/crowd, i.e., people like you, and the Top10Cs TC members. Each person can select for up to 10 challenges via the Top10Cs website. Therefore, the final Challenges Selected Results with the top 10 selections will be generated.

- Forum Panel Stage: August 11

A Top10Cs open forum panel will be held together with the smart world summit during the 2015 Smart World Congress. Two sets of selected top 10 challenges and detailed information about the selection will be first reported by the Top10Cs committee. Next, invited Top10Cs keynote speakers will give their comments or own ideas on the top 10 challenges. Afterwards, the forum will have open discussions. The proposers of and selectors for the top 10 challenges will be given awards.

- Challenge Report Stage: August 14 ~

The Top10Cs committee will come up a final Top10Cs summary report about the top 10 challenges selected by the public/crowd and the Top10Cs TC members, keynote statements, audience comments, and other data including a complete list of the challenges collected, their total selections, statistical data, etc. For each of the top 10 challenges, the report will list names of these who have submitted Challenge(s) in Challenge Collection Stage. The report will be posted on Top10Cs website for open access. A review of the Top10Cs including selected top 10 challenges is going to be published in IEEE Access.

Organizing Committee

Chair：

Stephen S. Yau, Arizona State University, USA

Members：

Julien Bourgeois, UFC/FEMTO-ST Institute, France

Sumi Helal, University of Florida, USA

Carl K. Chang, Iowa State University, USA

Mazin Yousif, Royal Dutch Shell CTO at T-Systems, International, Holland

Vincenzo Piuri, Universita' degli Studi di Milano, Italy

Tadashi Dohi, Hiroshima University, Japan

Michael Pecht, University of Maryland, USA

Jianhua Ma, Hosei University, Japan

Runhe Huang, Hosei University, Japan

Laurence T. Yang, St. Francis Xavier University, Canada

Huansheng Ning, University of Science and Technology Beijing, China

Ruijun He, CRC Press and Taylor & Francis Group, LLC, China

Zhangbing Zhou, China University of Geosciences (Beijing), China

Technical Committee

Organizing and TPC members of 2015 UIC, ATC, ScalCom, CBDCom, and IoP

Stephen S. Yau Symposium (SYS)

The Stephen S. Yau Symposium (SYS)
In conjunction with the 2015 Smart World Congress
August 10-14, 2015
Beijing, China
http://www.cybermatics.org/

The year 2015 marks the 80th birthday of Professor Stephen S. Yau, a pioneering computer scientist. The Stephen S. Yau Symposium (SYS) is being held in conjunction with the 2015 Smart World Congress in his honor. This short 75 minutes symposium will present the following featured speakers to pay tribute to Professor Yau and highlight his exemplary achievements and profound impacts in our profession:

Vincenzo Piuri, Vice President for Technical Activities, IEEE; Editor-in-Chief, IEEE Systems Journal; Fellow, IEEE

Hong Mei, Academician, Chinese Academy of Engineering; Vice President, Shanghai Jiao Tong University

Huimin Lin, Academician, Chinese Academy of Sciences; Director, Software Research Institute, Chinese Academy of Sciences

Sumi Helal, Editor-in-Chief, IEEE Computer; Director of Mobile and Pervasive Computing Lab, University of Florida; Fellow, IEEE

Tadashi Dohi, Head of Systems Reliability Laboratory, Hiroshima University, Japan

Carl K. Chang, President Emeritus, IEEE Computer Society; Editor-in-Chief Emeritus, IEEE Computer; Fellow, IEEE; Fellow, AAAS; Member, European Academy of Sciences

Jiannong Cao, Chair of Department of Computing, Hong Kong Polytechnic University;Director of the Internet and Mobile Computing Lab; Fellow, IEEE

In the end, we will play out pre-recorded congratulatory pieces, and open the floor for impromptu speeches by anyone who wishes to say a few words to congratulate Prof. Yau.

Organizing Committee

Carl K. Chang (Chair), Iowa State University, USA

Jianhua Ma, Hosei University, Japan

Hai Jin, Huazhong University of Science and Technology, China

Laurence T. Yang, St. Francis Xavier University, Canada

Congress Keynotes

Tutorials and Keynotes in August 10

On Efficient, Scalable and Secure System Virtualizations

Chunming Hu

Beihang University, China
E-mail: hucm@act.buaa.edu.cn

Biography:

Chunming Hu, is an associate professor, and vice dean of School of Computer Science and Engineering, Beihang University. He also works as deputy director of W3C/Beihang host. His main research interests include software and theory, large scale of distributed systems, and system virtualization. He has published more than 50 papers.

Hacking Health Behaviors through Wearable Sensing

Guanling Chen

University of Massachusetts Lowell, USA
E-mail: glchen@cs.uml.edu

Abstract:

The single greatest opportunity to improve health and reduce premature deaths lies in personal behavior. While technology-based behavior intervention has been around for many years, the emerging smartphone and wearable sensing technology brings a great promise to push health behavior change further by inferring and predicting real-time behavior occurrence and their context. In this tutorial, I will survey existing techniques of unobtrusive sensing of health behaviors (e.g. mobility, stress, sleep, and eating), using smartphones, smart watches, and smart glasses. I will then discuss the research challenges and opportunities in this exciting field.

Biography:

Guanling Chen is an Associate Professor of Computer Science at University of Massachusetts Lowell. After completing Ph.D. in Computer Science at Dartmouth College in 2004, he was an I3P Fellow before joining the faculty of UMass Lowell in 2005. His research interests include mobile computing, ubiquitous & pervasive computing, human-computer interaction, and intelligent systems. He has received over $1.5 million research grants from National Science Foundation (NSF) and Department of Homeland Security (DHS), and his work has been well published in top conferences and journals. For more information see: http://www.cs.uml.edu/~glchen/.

Analyzing Large Scale Spatiotemporal Data from Mobile Devices

Raghu Ganti

IBM T. J. Watson Research Center, USA
E-mail: rganti@us.ibm.com

Abstract:

Mobile devices such as smartphones, embedded dashboards in cars are becoming popular and are increasingly connected to the Internet. A key sensor data generated by these devices through various apps is location data (e.g., map apps collect location data for traffic analysis, Telecommunication companies collect location data from xDRs, Twitter/FourSquare collect location information when you tweet or check-in). As the data collected grows due to the societal scale, a key challenge is to be able to analyze such data using new-age distributed platforms such as Storm, Hadoop, and Spark. In this tutorial, I will present the challenges that are faced when analyzing such data and describe the solutions that IBM has developed. This tutorial will also involve a hands-on session that will allow the attendees to download and work with an example dataset and analyze the location data.

Biography:

Raghu Ganti is a Research Staff Member at the IBM T. J. Watson Research Center. He is part of the Cloud-based Networks department. His research interests span big data, wireless sensor networks, privacy, data mining, and cloud computing. He obtained his MS and PhD degrees from the Department of Computer Science, University of Illinois, Urbana-Champaign in August 2010. He is the recipient of the Siebel Scholar Fellowship, Class of 2010. He received his B.Tech degree from the Indian Institute of Technology, Madras in Computer Science and Engineering.

Music Recommendation and Play based on Content and SNS Analysis

Seungmin Rho

Sungkyul University, Anyang, Korea
E-mail: korea.smrho@gmail.com

Abstract:

Recently, with the significant progress of information technologies, a vast amount of digital contents such as images, music, and video are being generated and consumed via diverse devices. Moreover, as online mobile devices such as smart phones have become more popular, digital contents consequently have become more accessible and effective content retrieval and recommendation techniques have been required. In particular, music recommendation techniques produce a music playlist based on various factors such as user preference. Music preferences depend on diverse factors, such as musical characteristics, genre, language and culture. In order to provide satisfactory music recommendations, this dependency should be considered carefully. Presently, typical music recommendations simply involve providing a list of songs that are then played sequentially or randomly. Recently, there has been an increasing demand for new playback methods. In this talk, he will introduce a music system that recommends music effectively and plays them with user interfaces. For analyzing music content, he also present music sequence generation and music structure analysis techniques based on music feature extraction and social network analysis in order to identify general/personal taste for certain music genres that depends on time and location.

Biography:

Seungmin Rho received his PhD degree in Computer Science from Ajou University, Korea, in Computer Science from Ajou University, Korea, in 2008. In 2008-2009, he was a Postdoctoral Research Fellow at the Computer Music Lab of the School of Computer Science in Carnegie Mellon University. In 2009-2011, he had been working as a Research Professor at School of Electrical Engineering in Korea University. In 2012, he was an assistant professor at Division of Information and Communication in Baekseok University. Dr. Rho is currently a faculty of Department of Multimedia at Sungkyul University. He is an Editor-in-Chief at Journal of Platform Technology. His current research interests include database, big data analysis, music retrieval, multimedia systems, machine learning, knowledge management as well as computational intelligence. He has published more than 100 papers in refereed journals and conference proceedings in these areas. He has been involved in more than 20 conferences and workshops as various chairs and more than 30 conferences/workshops as a program committee member. He has been appointed as an Editor-in-Chief in Journal of Platform Technology since 2013. He has edited a number of international journal special issues as a guest editor, such as Multimedia Systems, Information Fusion, Engineering Applications of Artificial Intelligence, New Review of Hypermedia and Multimedia, Multimedia Tools and Applications, Personal and Ubiquitous Computing, Telecommunication Systems, Ad Hoc & Sensor Wireless Networks and etc. He has received a few awards including Who's Who in America, Who's Who in Science and Engineering, and Who's Who in the World in 2007 and 2008, respectively.

Data Knows You More: Sensing and Understanding Human Behavior in the Era of Big Data

Zhiwen Yu

Northwestern Polytechnical University, China
E-mail:zhiweny@gmail.com

Abstract:

Human behaviors range from individual action, activity, emotion to group and community behaviors, such as communication, gathering, and mobility. Understanding human behavior can help us build various applications, such as design smart home, prewarn events, prevent disease propagation, anti terrorism, etc. With the development of sensing technologies and social media, we come up with a large amount of data that can be used to understand human behavior. In this speech, I willl first introduce several typical works in human behavior understanding, three major challenges for real-world behavior understanding, data collection, data analysis, and data service. Then I will present several works that we have done in this area. We aim to build smart city with intelligence services based on human behavior understanding.

Biography:

Zhiwen Yu is currently a professor of the School of Computer Science, Northwestern Polytechnical University, China. He also serves as the director of the Department of Discipline Construction. He has worked as an Alexander Von Humboldt Fellow at Mannheim University, Germany from Nov. 2009 to Oct. 2010, a research fellow at Kyoto University, Japan from Feb. 2007 to Jan. 2009, and a post-doctoral researcher at Nagoya University, Japan in 2006-2007. His research interests cover pervasive computing, context-aware systems, mobile social networks, and personalization. He has served as an associate/guest editor for a number of international journals, such as IEEE Transactions on Human-Machine Systems, IEEE Communications Magazine, and ACM Transactions on Intelligent Systems and Technology. He is the General Co-Chair of CPSCom 2015, General Chair of UIC 2014, the Program Chair of EUC 2013, HumanCom 2012, and UIC 2010, the Vice Program Chair of PerCom 2015, the Workshop Chair of UbiComp 2011. He has published around 130 scientific papers in refereed journals and conferences, e.g., ACM Computing Surveys, IEEE Pervasive Computing, IEEE TKDE, IEEE TMC, IEEE THMS, ACM TKDD, UbiComp, PerCom, etc. Zhiwen Yu is a senior member of IEEE, a distinguished member of CCF (China Computer Federation) and a senior member of CCF Pervasive Computing Technical Committee. He received the Young Teacher Award founded by Fok Ying Tong Education Foundation in 2014, the CCF Young Scientist Award in 2011, the CPSCom'13/GPC'12/AMT'12/UIC'09 Best Paper Award, the Humboldt Fellowship in 2008, and the CCF Excellent Doctoral Dissertation Award in 2006.

Human Motion Tracking and Recognition with Microsoft Kinect

Wenbing Zhao

Cleveland State University, USA
E-mail: wenbingz@gmail.com

Abstract:

Microsoft Kinect, a low-cost motion-sensing device, enables users to interact with computers or game consoles naturally through gestures and spoken commands. As such, it has commanded intense interests in research and development on the Kinect technology. This tutorial will provide a comprehensive review on Kinect applications and the latest research and development on human motion tracking and recognition that power these applications. On the applications front, we review the applications of the Kinect technology in a variety of areas, including healthcare, education and performing arts, robotics, sign language recognition, retail services, workplace safety training, as well as 3D reconstructions. On the technology front, we provide an overview of the main features of both versions of the Kinect sensor together with the depth sensing technologies used, and review literatures on human motion recognition techniques used in Kinect applications.

Biography:

Wenbing Zhao is currently an Associate Professor and Director of the Master of Science of Electrical Engineering Program at the Department of Electrical and Computer Engineering, Cleveland State University. He earned his Ph.D. at University of California, Santa Barbara, under the supervision of Drs. Moser and Melliar-Smith, in 2002. Dr. Zhao has an active state-sponsored research grant on using Kinect to enhance safe patient handling in nursing homes, and has taught a course on Kinect application development at Cleveland State University in spring 2014. Dr. Zhao has over 100 peer-reviewed publications. Dr. Zhao is a senior member of IEEE, a program evaluator for ABET, and chair for the CIST 2015 workshop (as part of UIC 2015).

Cloud Control Systems

Yuanqing Xia

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Abstract:

With the development of science and technology, automation merges with informatization gradually, which leads to the appearance of huge, complex and intelligent systems. In order to control these systems, as an extension of networked control systems (NCSs), the concept of cloud control systems is proposed by incorporating the cloud computing and the control strategies on NCSs, cyber-physical systems and complex systems. In the initial stage of cloud control systems, cloud computing is mainly used to store and process huge amounts of measurement data and serve for the traditional control algorithms. Gradually, cloud control systems are further developed to be the systems with complex computation, overall coordination and system decision making. From the structure, cloud control systems can be seen as the deep integration of cloud computing and cyber-physical systems.

Biography:

Yuanqing Xia was born in Anhui Province, China, in 1971 and graduated from the Department of Mathematics, Chuzhou University, Chuzhou, China, in 1991. He received his M.S. degree in Fundamental Mathematics from Anhui University, China, in 1998 and his Ph.D. degree in Control Theory and Control Engineering from Beijing University of Aeronautics and Astronautics, Beijing, China, in 2001. From 1991 to 1995, he was with Tongcheng Middle-School, Anhui, China, where he worked as a teacher. During January 2002–November 2003, he was a Postdoctoral Research Associate in the Institute of Systems Science, Academy of Mathematics and System Sciences, Chinese Academy of Sciences, Beijing, China, where he worked on navigation, guidance and control. From November 2003 to February 2004, he was with the National University of Singapore as a Research Fellow, where he worked on variable structure control. From February 2004 to February 2006, he was with the University of Glamorgan, Pontypridd, U.K., as a Research Fellow, where he worked on networked control systems. From February 2007 to June 2008, he was a Guest Professor with Innsbruck Medical University, Innsbruck, Austria, where he worked on biomedical signal processing. Since July 2004, he has been with the Department of Automatic Control, Beijing Institute of Technology, Beijing, first as an Associate Professor, then, since 2008, as a Professor. And in 2012, he was appointed as Xu Teli Distinguished Professor at the Beijing Institute of Technology and obtained the National Science Foundation for Distinguished Young Scholars of China.

His current research interests are in the fields of networked control systems, robust control and signal processing, active disturbance rejection control and flight control. He has published eight monographs in Springer and John Wiley, and more than 100 papers in journals. He is an Editor in deputy of the Journal of the Beijing Institute of Technology, Associate Editor of Acta Automatica Sinica, Control Theory and Applications, International Journal of Innovative Computing, Information and Control, International Journal of Automation and Computing. He obtained the Second Award of the Beijing Municipal Science and Technology (No. 1) in 2010, the Second National Award for Science and Technology (No. 2) in 2011, and the Second Natural Science Award of The Ministry of Education (No. 1) in 2012.

Power Modeling and Power Optimization in Mobile Devices

Yunxin Liu

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Abstract:

Power consumption is a paramount concern in battery-powered mobile devices such as smartphones and tablet computers. With powerful hardware and rich applications, modern mobile devices are becoming increasingly power hungry, but the power supply of batteries is very limited. As a result, it is desirable to better manage the power consumption of mobile devices. This tutorial will give in-depth discussions on two key aspects of power management of mobile devices: power modeling and power optimization. The former is to understand how the energy is consumed and the latter is to use the energy efficiently. A broad view of the state of the art will be covered and the intended audiences are the students and researchers who are interested in energy efficiency in mobile devices.

Biography:

Yunxin Liu is a Lead Researcher at Microsoft Research Asia. He received his Ph.D. from Shanghai Jiao Tong University through the SJTU-MSRA joint PhD program. His research interests are mobile systems and networking, with recent focus on power management, security and privacy, and human sensing. His research work has been published in top conferences and journals, transferred into multiple Microsoft products such as Visual Studio, XBOX XDK, and Windows Phone, and featured in news media including ABC News, The Register, NetworkWorld, and many others. He is a member of the IEEE and the ACM. For more information, see: http://research.microsoft.com/en-us/people/yunliu/.

Scheduling the Charging Behavior of Plug-in Electric Taxies in Smart Grid

Zaiyue Yang

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Abstract:

This talk discusses how to optimally schedule the charging behaviorof plug-in electric taxies (PET) with time varying electricity price in future smart grid. The story goes in twofold. First, from the perspective of a PET driver the goal is to maximize the profit by choosing proper charging slots. This problem is formulated as a Markov decision process and solved by the proposed threshold method. Then, from the perspective of grid operator the goal is to induce the aggregated charging load of PET fleet to track a given profile. This task is accomplished by introducing an automatic pricing mechanism to adjust the electricity price.

Biography:

Zaiyue Yang received his B.S. and M.S. degrees from Department of Automation, University of Science and Technology of China, Hefei, China, in 2001 and 2004, respectively, and Ph.D. degree from Department of Mechanical Engineering, University of Hong Kong, in 2008. Then, he worked as postdoctoral fellow and research associate in Department of Applied Mathematics, Hong Kong Polytechnic University before joining Zhejiang University, Hangzhou, China, in 2010. He is currently a professor there. His current research interests include smart grid, signal processing and control theory. He now severs as the guest editor of IEEE Transactions on Industrial Informatics.

Swarm Intelligence: Fundamental Principles and Optimization Approaches

Zhongshan Zhang

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Abstract:

Inspired by swarm intelligence observed in social species, the artificial self-organized networking (SON) systems are expected to exhibit some intelligent features (e.g., flexibility, robustness, decentralized control, and self-evolution, etc.) that may have made social species so successful in the biosphere. Self-organized networks with swarm intelligence as one possible solution have attracted a lot of attention from both academia and industry. In this tutorial, we first different aspects of bio-inspired mechanisms and examine various algorithms (e.g., pulse-coupled oscillators (PCO)-based synchronization, ant- and/or bee-inspired cooperation and division of labor, immune systems inspired network security and Ant Colony Optimization (ACO)-based multipath routing) that have been applied to artificial SON systems. Then, we give some open research issues in detail.

Biography:

Zhongshan Zhang received the B.E. and M.S. degrees in computer science from the Beijing University of Posts and Telecommunications (BUPT) in 1998 and 2001, respectively, and received Ph.D. degree in electrical engineering in 2004 from BUPT. From Aug. 2004 he joined DoCoMo Beijing Laboratories as an associate researcher, and was promoted to be a researcher in Dec. 2005. From Feb. 2006, he joined University of Alberta, Edmonton, AB, Canada, as a postdoctoral fellow. From Apr. 2009, he joined the Department of Research and Innovation (R&I), Alcatel-Lucent, Shanghai, as a Research Scientist. From Aug. 2010 to Jul. 2011, he worked in NEC China Laboratories, as a Senior Researcher. He is currently a professor of the School of Computer and Communication Engineering in the University of Science and Technology Beijing (USTB). His main research interests include statistical signal processing, self-organized networking, cognitive radio, and cooperative communications.

Keynotes in August 11

Smart Home Technologies for Smart Cities

Mohamed Jamal Deen

Fellow of IEEE & Royal Society of Canada
Distinguished University Professor, Senior Canada Research Chair in Information Technology
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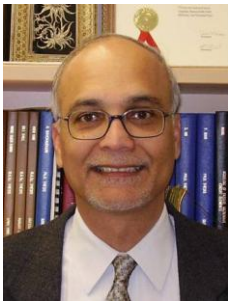
Abstract:

The ubiquitous healthcare smart home in smart cities was identified by governments and medical institutions as a key component of the economical, technological, and socially acceptable solution to maintain the viability of their healthcare systems. The goal of the smart home is to help the elderly to continue to live a more independent life as long as possible in their own homes while being monitored and assisted (as much as possible) in an unobtrusive and non-invasive manner. Seamless monitoring plus a self-managed intelligent system, capable of autonomously handling situations that are usually handled by humans, will be described. Smart home connected via secure communications access to back-end health-care providers such as hospitals or specialized medical institutions will be discussed. Within this ubiquitous computing, communications, technological framework, healthcare providers can be continuously informed about the status of the monitored inhabitant(s) for handling emergency situations that necessitate their intervention. In this keynote presentation several examples including a smart "walking - age" analyzer; a smart sleeping environment; smart sensing systems; smart home server; and a smart living diary will be described. Also, some future perspectives for smart homes in smart cities will be discussed.

Biography:



Mohamed Jamal Deen was born in Guyana, South America. He completed a Ph.D. degree in Electrical Engineering and Applied Physics at Case Western Reserve University, Cleveland, U.S.A. His Ph.D. dissertation was on the design and modeling of a new CARS spectrometer for dynamic temperature measurements and combustion optimization in rocket and jet engines, and was sponsored and used by NASA, Cleveland, USA. He is currently Distinguished University Professor and holder of the Senior Canada Research Chair in Information Technology, McMaster University. His current research interests are nanoelectronics, optoelectronics, nanotechnology and their emerging applications to health and environmental sciences. Dr. Deen's research record includes more than 500 peer-reviewed articles (about 20% are invited), two textbooks, 6 awarded patents that have been used in industry, and 13 best paper/poster/presentation awards. Over his career, he has won more than fifty awards and honors. As an undergraduate student, Dr. Deen was the top ranked mathematics and physics student and the second ranked student at the university, wining the Chancellor's gold medal and the Irving Adler prize. As a graduate student, he was a Fulbright-Laspau Scholar and an American Vacuum Society Scholar. He is a Distinguished Lecturer of the IEEE Electron Device Society for more than a decade. His awards and honors include the Callinan Award and the Electronics and Photonics Award from the Electrochemical Society; a Humboldt Research Award from the Alexander von Humboldt Foundation; the Eadie Medal from the Royal Society of Canada; McNaughton Gold Medal (highest award for engineers), the Fessenden Medal and the Ham Education Medal, all from IEEE Canada IEEE Canada In addition, he was awarded the three honorary doctorate degrees in recognition of his exceptional research and scholarly accomplishments, professionalism and service. Dr. Deen has also been elected Fellow status in ten national academies and professional societies including The Royal Society of Canada - The Academies of Arts, Humanities and Sciences (the highest honor for academics, scholars and artists in Canada), IEEE, APS (American Physical Society) and ECS (Electrochemical Society). Most recently, he was elected President of the Academy of Science, The Royal Society of Canada.

Towards 5G Mobile Communication Technology

Han-Chieh Chao

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National Dong Hwa University, Taiwan
Fujian University of Technology, China
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Abstract:

The third generation (3G) and fourth generation (4G) of mobile phone mobile communication technology have been widely used and launched in the world. Since the infrastructures like Base Stations (BS) and Evolved Node B (eNBs) are deployed everywhere, efficiency is a vital issue for the fifth generation (5G). However, 5G mobile communication is still just being set up. Some technologies and research issues are announced and investigated. This keynote speech introduces the expectative performance goals of 5G. Then, some potential technologies for 5G cellular mobile communications are discussed, such as Millimeter Wave Communication (mmWave), Non-orthogonal Multiple Access (NOMA), Massive MIMO, Cloud Radio Access Network (C-RAN), Heterogeneous Network (HetNet), and so on. Finally, some tentative 5G scenarios are introduced. Our blueprint for HetNet in 5G is also given, such as Cloud Media on Named Data Network Platform over 5G Mobile Communication, and Software-Defined Wireless Bacteria-Inspired Network over 5G Mobile Communication.

Biography:

Han-Chieh Chao is a joint appointed Chair Professor of the Department of Computer Science & Information Engineering, Electronic Engineering of National Ilan University, I-Lan, Taiwan (NIU) and Fujian University of Technology. He is serving as the President since August 2010 for NIU as well. He was the Director of the Computer Center for Ministry of Education Taiwan from September 2008 to July 2010. His research interests include High Speed Networks, Wireless Networks, IPv6 based Networks, Digital Creative Arts, e-Government and Digital Divide. He received his MS and Ph.D. degrees in Electrical Engineering from Purdue University in 1989 and 1993 respectively. He has authored or co-authored 4 books and has published about 400 refereed professional research papers. He has completed more than 150 MSEE thesis students and 5 PhD students. Dr. Chao has been invited frequently to give talks at national and international conferences and research organizations. Dr. Chao is the Editor-in-Chief for IET Networks, Journal of Internet Technology. He is the founding Edtor-in-Chief for International Journal of Internet Protocol Technology, and International Journal of Ad Hoc and Ubiquitous Computing. He is also the associate editor for IEEE Network Magazine and IEEE Wireless Communications Magazine. Dr. Chao has served as the guest editors for Mobile Networking and Applications (ACM MONET), IEEE JSAC, IEEE Communications Magazine, IEEE Systems Journal, Computer Communications, IEE Proceedings Communications, the Computer Journal, Telecommunication Systems, Wireless Personal Communications, and Wireless Communications & Mobile Computing. Dr. Chao is an IEEE senior member and a Fellow of IET (IEE).

Data Security and Privacy in Emerging Scenarios

Pierangela Samarati

IEEE Fellow

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Biography:

Pierangela Samarati is a Professor at the Department of Computer Science of the Universita` degli Studi di Milano. Her main research interests are on data security and privacy, information system security, and information protection in general. She has participated in several projects involving different aspects of information protection. On these topics she has published more than 240 peer-reviewed articles in international journals, conference proceedings, and book chapters. She is the Coordinator of the ESCUDO-CLOUD European Project (H2020).

She has been Computer Scientist in the Computer Science Laboratory at SRI, CA (USA). She has been a visiting researcher at the Computer Science Department of Stanford University, CA (USA), and at the Center for Secure Information Systems of George Mason University, VA (USA).

She is the chair of the IEEE Systems Council Technical Committee on Security and Privacy in Complex Information Systems (TCSPCIS), of the ERCIM Security and Trust Management Working Group (STM), of the Steering Committees of the European Symposium on Research in Computer Security (ESORICS) and of the ACM Workshop on Privacy in the Electronic Society (WPES). She is the Coordinator of the Working Group on Security of the Italian Association for Information Processing (AICA), the Italian representative in the IFIP (International Federation for Information Processing) Technical Committee 11 (TC-11) on "Security and Privacy". She is a member of the Steering Committee of the International Conference on Information Systems Security (ICISS), and of the International Conference on Information and Communications Security (ICICS).

She is ACM Distinguished Scientist (named 2009) and IEEE Fellow (named 2012). She has been awarded the IFIP TC11 Kristian Beckman award (2008) and the IFIP WG 11.3 Outstanding Research Contributions Award (2012).

More information at: http://homes.di.unimi.it/samarati/

Keynotes in August 12

Management of Heterogeneous Big Data Sources in Cloud Environments

Bruno Defude, Samovar

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Abstract:

The production of huge amount of data and the emergence of cloud computing have introduced new requirements for data management. Many applications need to interact with several heterogeneous data stores depending on the type of data they have to manage: traditional data types, documents, graph data from social networks, simple key-value data, etc. Interacting with heterogeneous data models via different APIs, and multiple data store applications imposes challenging tasks to their developers. Indeed, programmers have to be familiar with different APIs. In addition, the execution of complex queries over heterogeneous data models cannot, currently, be achieved in a declarative way as it is used to be with mono-data store application, and therefore requires extra implementation efforts. Moreover, developers need to master and deal with the complex processes of cloud discovery, and application deployment and execution. In this work we propose an integrated set of models, algorithms and tools aiming at alleviating developers task for developing, deploying and migrating multiple data stores applications in cloud environments. Our approach focuses mainly on three points. First, we provide a unifying data model used by applications developers to interact with heterogeneous relational and NoSQL data stores. Based on that, they express queries using OPEN-PaaS-DataBase API (ODBAPI), a unique REST API allowing programmers to write their applications code independently of the target data stores. Second, we propose virtual data stores, which act as mediator and interact with integrated data stores wrapped by ODBAPI. This run-time component supports the execution of single and complex queries over heterogeneous data stores. Finally, we present a declarative approach that enables to lighten the burden of the tedious and non-standard tasks of (1) discovering relevant cloud environment and (2) deploying applications on them while letting developers to simply focus on specifying their storage and computing requirements.

This a a joint work with Rami Sellami and Sami Bhiri, both from Telecom SudParis/University of Paris Saclay.

Biography:

Bruno Defude, Samovar received the Ph.D. degree in 1986 and Habilitation degree in 2005 in computer science, respectively, from Grenoble INP and Paris VI University, Paris, France. He is currently Vice-Dean of research and Professor in the Computer Science Department at Telecom SudParis, France. Telecom SudParis is an engineering school in telecommunications which is a member of the newly created University of Paris Saclay (the leading scientific university in France). His research interests are distributed data management, cloud data management, and semantics for B2B integration.

Prof. Defude is a member of IEEE and ACM SIGMOD. He was the Chair of the IEEE WETICE Conference in 2011. He has been participating in several national and European research projects. He has published more than 80 research papers in international conferences and journals and has served as program committee member in many conferences.

Simplifying Complex Smart Services through Ubiquitous and Overlay Technologies

Habib F. Rashvand

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Abstract:

The cycles of innovation usually bring in some form of technological revolution, these often come and go without a trace or are unnoticed by most people and societies caught in the process. The effects are, however, very different from those who are ready to follow the process. We technocrats therefore must always know our position and hold ourselves in readiness to harness these cycles so as to help our nations towards prosperity and a better life-style.

Today sensor technology centres the innovation cycle. Over a decade domination of the wireless sensor network (WSN) has been building over the concept of distributed smart sensing, and is climbing to its peak. We see signs that it cannot follow its sustainable progress without demonstrating some new superior, world class/scale applications and services. Due to its heterogeneous nature such practical applications can only develop in conjunction with other fields and disciplines. Examples are all around us. Any automated, smart, and intelligent service can fall into this category. Smart medical systems, smart agriculture, smart manufacturing, smart energy, smart transport, and many more to include our favourites: smart homes, smart offices, smart cities and beyond. A whole range of new exciting and adventurous opportunities that require all three stages of research, development and deployment (RDD) are waiting to spark/shake the new economies. In order to achieve such complex long-term RDD projects we need to follow an integrated multidisciplinary solution, under a fully controllable and trustworthy complex system.

This keynote speech therefore, under the complex smart service economies (CSSE) examines: (a) the main CSSE components, (b) the key success factors of CSSE, (c) the simplification process, and (d) the role of two key technologies of ubiquitous and overlay for service deployment and management.

Finally, for our special case of integrated WSN-IoT smart systems, as a typical example of deploying smart integrated services some more specific details are discussed to justify the case for its key functions and its research requirements.

Biography:

Habib F. Rashvand is Professor at University of Warwick, United Kingdom. With over 30 years a proven industrial and academic experience in Data Communications, Computing, and wireless sensor technologies has been serving the IET Communications and IET Wireless Sensor Systems for over a decade. His industrial experience includes Racal, Vodafone, Nokia and Cable & Wireless with many universities, Zambia, Portsmouth, Coventry, Magdeburg and Warwick with an overlapping 10 years teaching technological Innovations at the Open University. Director of Advanced Communication Systems, with Special Interests in innovation, engineering management, wireless sensor systems and distributed systems, over 100 publication records including first author of three books “Using Cross-Layer Techniques for Communication Systems: Techniques and Applications” (IGI Global, by H. F. Rashvand and Y. S. Kavian, 2012), “Distributed Sensor Systems: Practice and Applications” (Wiley, by H. F. Rashvand and Jose M. A. Calero, 2012) and upcoming Book “Dynamic Ad-Hoc Networks” (IET, by H. F. Rashvand and C. H. Chao, Expected July 2013).

In-Memory Computing: New Architecture for Big Data Processing

Hai Jin

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Abstract:

With emerging of big data, the processing speed for the data is one of the key issues for big data technology. One of the efficient way to handle the velocity of data is putting all the data in the memory. But traditional memory, DRAM, consumes a large amount of energy and cost to build a large memory system. In recent years, lots of non-volatile memory devices, such as phase change memory (PCM), are studied to be part of memory. We call these storage class memory (SCM). Combing traditional memory and SCM together to build a large hybrid memory space is becoming one of the energy-efficient way to extend the traditional in-memory computing system into a new level, to handle large quality of data in real time. In this talk, we will discuss this new in-memory computing system from different aspects and some challenges in this new system. We will also report some ongoing effort in China to build this hybrid memory-based in-memory computing system, and some latest advances in this area.

Biography:

Hai Jin is a Cheung Kung Scholars Chair Professor of computer science and engineering at Huazhong University of Science and Technology (HUST) in China. Jin received his PhD in computer engineering from HUST in 1994. In 1996, he was awarded a German Academic Exchange Service fellowship to visit the Technical University of Chemnitz in Germany. Jin worked at The University of Hong Kong between 1998 and 2000, and as a visiting scholar at the University of Southern California between 1999 and 2000. He was awarded Excellent Youth Award from the National Science Foundation of China in 2001. Jin is the chief scientist of ChinaGrid, the largest grid computing project in China, and the chief scientists of National 973 Basic Research Program Project of Virtualization Technology of Computing System, and Cloud Security. Jin is a senior member of the IEEE and a member of the ACM. He has co-authored 15 books and published over 600 research papers. His research interests include computer architecture, virtualization technology, cluster computing and cloud computing, peer-to-peer computing, network storage, and network security.

Mobile Crowd Sensing for Smart City

Huadong Ma

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Abstract:

Crowd sensing is a new computing paradigm in the Internet of Things, and has been widely considered as the novel technology for sensing the urban environments and providing smart services further. In this talk, we first introduce the characteristics of mobile crowd sensing, and analyze the challenges of mobile crowd sensing. Combing our on-going works, we present some researches on sensing quality measure, opportunistic routing, incentive mechanism and typical applications in smart city. Finally, we outline the future works on this area.

Biography:

Huadong Ma is a Chang Jiang Scholar Professor and Executive Dean, School of Computer Science, Beijing University of Posts and Telecommunications (BUPT), China. He is also Director of Beijing Key Lab of Intelligent Telecommunications Software and Multimedia, BUPT. He is Chief Scientist of the project "Basic Research on the Architecture of Internet of Things" supported by the National 973 Program of China from 2010 to 2013. He received his PhD degree in Computer Science from the Institute of Computing Technology, Chinese Academy of Science in 1995. From 1999 to 2000, he held a visiting position in the Department of Electrical Engineering and Computer Science, The University of Michigan, Ann Arbor, USA. He was a visiting Professor at The University of Texas at Arlington from July to September 2004, and a visiting Professor at Hong Kong University of Science and Technology from Dec. 2006 to Feb. 2007. His current research focuses on multimedia computing, sensor networks and Internet of things, and he has published over 200 papers in journals (such as ACM/IEEE Transactions) or Conferences (such as IEEE INFOCOM, ACM MM) and 4 books on these fields. He was awarded National Funds for Distinguished Young Scientists in 2009.

There is plenty of things at the bottom - Challenges and opportunities for the Internet of Things at the micro-scale

Julien Bourgeois

University of Franche-Comté, Institut FEMTO-ST, CNRS, France
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Abstract:

The promise of ubiquitous computing, stated by Mark Weiser in 1991, was a computing technology that disappear to be everywhere. With the recent advances of micro-technology, this is literally possible i.e. technology can actually disappear from the human eyes. Indeed, over the last decades, the research on micro-electro-mechanical systems (MEMS) has focused on the engineering process building smaller and smaller prototypes and profitable products. Now, the time has come to build smarter and smarter prototypes such that intelligence will be directly integrated within the matter. This integration will open new frontiers for computing, creating an Internet of micro-things or even smaller, of nano-things like defined by Ian F. Akyildiz. In this talk, the latest projects in this field will be presented including sensing nanoparticles, nanoswimmers, programmable matter, smart array of MEMS and so on, defining the challenges raised by these new computing environments.

Biography:

Julien Bourgeois is professor of computer science at the University of Franche-Comté (UFC) in France. He is part of the FEMTO-ST institute (UMR CNRS 6174) where he is leading the complex networks team. His research interests are in distributed intelligent MEMS (DiMEMS), P2P networks and security management for complex networks. He has been invited professor at Carnegie Mellon University (US) from 9/2012 to 8/2013, at Emory University (US) in 2011 and in Hong Kong Polytechnic University in 2010 and 2011. He led different funded research projects (Smart Surface, Smart Blocks, Computation and coordination for DiMEMS). He is currently leading the topic "System architecture, communication, networking" in the LABEX ACTION, a 10 M€ funded program whose aims at building integrated smart systems (http://www.labex-action.fr/). He has also worked in the Centre for Parallel Computing at the University of Wetsminster (UK) and in the Consiglio Nazionale delle Richerche (CNR) in Genova. He collaborated with several other institutions (Lawrence Livermore National Lab, Oak Ridge National Lab, etc.). He created and chaired the workshop on Distributed MEMS (dMEMS 2010, 2012, 2015). In 2005, he created and then chaired all the editions of the Workshop on Modeling, Simulation and Optimization of Peer-to-peer environments (MSOP2P) collocated with PDP until 2013. He has worked for more than 10 years on these topics has co-authored more than 120 international publications and communications and has served as PC members and chaired various conferences (IEEE iThings, IEEE HPCC, Euromicro PDP, IEEE GreenCom , IEEE CPSCom, GPC, etc). Apart from its research activities, he is acting as a consultant for the French government and for companies.

Toward a Smart Cyberspace: Data-driven Visual Content Understanding and Production

Xiaowu Chen

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Abstract:

In a smart cyberspace, visual contents such as images, videos and 3D models have been demonstrating impressive impact on our daily life. However, such visual contents, especially the interactable 3D models, are still far from sufficient to meet the individual requirements of billions of cyberspace users. In this talk, I will present our recent research efforts on data-driven visual content understanding and production, i.e., the large-scale generation of visual contents by using the knowledge mined from data. In particular, I will focus on two main issues: the role of data in computer vision and computer graphics, and the difference between laboratory generation and large-scale production.

Biography:

Xiaowu Chen is currently a full professor at State Key Laboratory of Virtual Reality Technology & Systems, School of Computer Science & Engineering, Beihang University. His research interests include virtual reality, augmented reality, visual computing, computer graphics, computer vision, computational photography, human-computer interaction, digital media content, and big data. He is particularly interested in developing data-driven theories, algorithms and systems for intelligent processing and understanding of visual data. His recent works were published in several journals and conferences such as TOG, TPAMI, TIP, CVPR, CGF, CVIU, PR and ECCV.

Keynotes in August 13

Mobile Crowd Sensing and Computing: Challenges and Opportunities

Bin Guo

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Abstract:

With the development of Internet of Things and mobile social networking techniques, Mobile Crowd Sensing and Computing (MCSC), which leverages cross-space, heterogeneous crowdsourced data for large-scale sensing and computing, has become a promising research area. Layered on top of the participatory sensing vision, MCSC has two characterizing features: (1) it leverages both sensed data from mobile devices and user-contributed data from mobile social networking services; and (2) it presents the fusion of machine and human intelligence in both sensing and computing process. In this talk, we will present the unique features, key challenges, and research opportunities of MCSC. Our research efforts to MCSC will also be presented.

Biography:

Bin Guo is a professor from Northwestern Polytechnical University, China. He received his Ph.D. degree in computer science from Keio University, Japan in 2009 and then was a post-doc researcher at Institut TELECOM SudParis in France during 2009-2011. His research interests include ubiquitous computing, mobile crowd sensing, and HCI. Dr. Guo is the associate editor of IEEE Communications Magazine, IEEE Transactions on Human-Machine Systems, and IEEE IT Professional. He is also a guest editor of ACM Transactions on Intelligent Systems and Technology and the general co-chair of IEEE UIC'15. Dr. Guo has published over 90 papers in refereed journals, conference proceedings, and book chapters, including IEEE TMC, ACM Computing Surveys, IEEE Pervasive Computing, IEEE Communications Magazine, ACM TKDD, IEEE THMS, ACM UbiComp, and so on. He has won the Best Paper Award of IEEE CPSCom'13 and GPC'12. He is a senior member of IEEE and CCF.

Understanding User Mobility from Large Scale Human Behavioral Data

Xing Xie

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Abstract:

With the rapid development of positioning, sensor and smart device technologies, large quantities of human behavioral data are now readily available. They reflect various aspects of human mobility and activities in the physical world. The availability of this data presents an unprecedented opportunity to gain a more in depth understanding of users and provide them with personalized online experience. In this talk, I will present our recent research efforts on this direction, including a space alignment approach for reconstructing individual mobility from smart card transactions, and a joint geographical modeling and matrix factorization for Point-of-Interest (POI) recommendation.

Biography:

Xing Xie is currently a senior researcher in Microsoft Research Asia, and a guest Ph.D. advisor for the University of Science and Technology of China. He received his B.S. and Ph.D. degrees in Computer Science from the University of Science and Technology of China in 1996 and 2001, respectively. He joined Microsoft Research Asia in July 2001, working on spatial data mining, location based services, social networks and ubiquitous computing. He currently serves on the editorial boards of ACM Transactions on Intelligent Systems and Technology (TIST), Springer GeoInformatica, Elsevier Pervasive and Mobile Computing, Journal of Location Based Services, and Communications of the China Computer Federation (CCCF). He is a member of Joint Steering Committee of the UbiComp and Pervasive Conference Series, a senior member of ACM, the IEEE, and China Computer Federation (CCF).

Assessment of Service Protocol Adaptability in Mediated Service Interactions

Zhangbing Zhou

China University of Geosciences (Beijing), China
E-mail: zbzhou@cugb.edu.cn

Abstract:

In recent years, we witness the increasing trend that more applications are developed by composing Web services. Services interact with each other in ways not necessarily foreseen during their development phase. In this setting, mismatches usually exist between services, and adapters are typically synthesized to reconcile mismatches occurring in certain interactions. The technique that identifies the most suitable provider service from a set of functionally equivalent candidates with respect to certain requirements specified by the requester is essential. To address this challenge, we propose a technique called adaptability assessment, which 1) provides a set of conditions that determines when service interactions can be conducted and 2) computes an adaptation degree that specifies to what extent a service protocol is adaptable to another service protocol. Adaptability assessment complements the techniques that synthesize adapters. Specifically, when adaptability assessment suggests that two service protocols can conduct some interactions according to the adaptation mechanisms of a certain adapter and these interactions can fulfill the requester's requirements, then the effort of synthesizing an adapter is beneficial to potential service interactions. As such, the requester can acknowledge whether his/her expected interactions can be conducted or not and under which conditions. This is important before conducting an interaction, particularly when this interaction is critical, long running, and non-repeatable.

Biography:

ZhangBing Zhou received the Ph.D. degree in Digital Enterprise Research Institute, from National University of Ireland, Galway, Ireland, in 2010. Until April 2011, he was a Post-Doctoral Researcher in the Computer Science Department, TELECOM SudParis, France. Since September 2011, he joined the China University of Geosciences (Beijing), China as an associate professor, and an adjunct associate professor at the Computer Science Department, TELECOM SudParis, France. His research interests include Service-Oriented Computing, Process-Aware Information Systems, and Wireless Sensor Networks. He had published over 80 papers in related conferences, journals, and books in these areas. He had been awarded the Outstanding Service Award of IEEE iThings 2013 as Executive Chair, and the Outstanding Service Award of ComComAP 2014 as General Co-Chair. He has been serving as Guest Editors for Journal of Network and Computer Applications, Personal and Ubiquitous Computing, The Computer Journal, International Journal of Distributed Sensor Networks, Journal of Internet Technology. He served as more than 20 various Co-Chair for international conferences/workshops, e.g. Steering and Executive Chair for IEEE iThings 2013/2014, Publicity Co-Chair for ICSOC 2014, Program Co-Chair for IEEE ATC 2015, Technical Program Co-Chairs for ISITC 2015, and TPC members of more than 50 conferences. He is a member of IEEE and ACM.

VINCE: Exploriting Visible Light Sensing for Smartphone-based NFC Systems

Jianwei Niu

Beihang University, China
E-mail: niujianwei@buaa.edu.cn

Biography:

Jianwei Niu received his Ph.D. degrees in 2002 in computer science from Beijing University of Aeronautics and Astronautics (BUAA, now Beihang University). He was a visiting scholar at School of Computer Science, Carnegie Mellon University, USA from Jan. 2010 to Feb. 2011. He is a professor in the School of Computer Science and Engineering, BUAA. He is now an IEEE senior member. He has published more than 100 referred papers on such as IEEE TPDS, IEEE INFOCOM, ACM Sensys, ACM SIGCHI, ACM Multimedia, TII, TECS, JPDC, Neurocomputing, WCMC, JNCA, and etc., and filed more than 30 patents in mobile and pervasive computing. He served as the DySON workshop co-chair of Infocom 2014, the Program Chair of IEEE SEC 2008, Executive Co-chair of TPC of CPSCom 2013, TPC members of InfoCom, Percom, ICC, WCNC, Globecom, LCN, and etc. He has served as an associate editor of Int. J. of Ad Hoc and Ubiquitous Computing, Journal of Internet Technology, Journal of Network and Computer Applications (Elsevier). He has got five grants from NSFC, seven grants from National 863 Plan of China. He received the New Century Excellent Researcher Award from Ministry of Education of China 2009, the first prize of technical invention of the Ministry of Education of China 2012, Innovation Award from Nokia Research Center, and won the best paper award in IEEE ChinaCom 2014, ICC 2013, WCNC 2013, ICACT 2013, CWSN 2012 and GreenCom 2010. His current research interests include mobile and pervasive computing, mobile video analysis.

Personalized Services Based on User Model in Social Networks

Bofeng Zhang

Shanghai University, China
E-mail: bfzhang@shu.edu.cn

Abstract:

With the rapid development of social networks and social e-commerce, personalized information need and interests are various and diverse. Personalized services have achieved great success in the past 20 years. Also, there exist challenges of preference diversity and fine-grained interests in the process of user model modeling. The availability of diverse and fine-grained interests presents an unprecedented social e-commerce opportunity and maximizes the user's satisfaction based on user model in social networks. In this talk, I will introduce our recent research efforts on personalized services in social networks, including a neighborhood user model approach for mining personalized user's interests, semantic community discovery and community-based personalized recommendation.

Biography:

Bofeng Zhang is currently a professor researcher and a Ph.D. advisor for the Shanghai University, China. He received the B.S. M.S. and Ph.D. degrees from Northwestern Polytechnical University of Technology, Xi'an, China, in 1991, 1994 and 1997, respectively. He was a visiting professor in the University of Aizu, Japan from Aug. 2006 to Aug. 2007, and was a visiting scholar in Purdue University from Aug. 2006 to Aug. 2007. He has published 3 books, more than 150 research papers in national and international journals and major conference proceedings. He currently serves as Steering Committee member, Workshop Chair, and Program Committee member of several important international conferences, as Member of Editorial Board of "Journal of Shanghai University (English Edition)". He focuses on the interest fields of intelligent information processing, personalized services, and health information technology.

Big Data Mining and Computing in a Smart World

Carson Leung

University of Manitoba, Canada
E-mail: Carson.Leung@cs.umanitoba.ca

Abstract:

Data mining and analytics aims to analyze valuable data and extract implicit, previously unknown, and potentially useful information from the data. Due to advances in technology, high volumes of valuable data are generated at a high velocity in high varieties of data sources in various real-life business, scientific and engineering applications. Due to their high volumes, the quality and accuracy of these data depend on their veracity (uncertainty of data). This leads us into the new era of Big Data. This talk presents some works on big data mining and computing, especially on an important task of frequent pattern mining, which computes and mines from big data for interesting knowledge in the forms of frequently occurring sets of merchandise items in shopping markets, interesting co-located events, and/or popular individuals in social networks. The talk also shows how big data mining and computing contributes to the creation of a smart world environment.

Biography:

Carson Leung obtained his BSc (Hons), MSc and PhD from The University of British Columbia, Canada. He is currently a Full Professor at the University of Manitoba, Canada. He has published more than 110 papers on the topics of big data computing, databases, data mining, social network analysis, as well as visual analytics--including papers in ACM Transactions on Database Systems (TODS), Social Network Analysis and Mining (SNAM), Future Generation Computer Systems (FGCS), Journal of Organizational Computing and Electronic Commerce (JOCEC), IEEE International Conference on Data Engineering (ICDE), IEEE International Conference on Data Mining (ICDM), and Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD). Over the past few years, he has served as an organizing committee member of ACM SIGMOD 2008, IEEE ICDM 2011, and IEEE/ACM ASONAM 2014, as well as a PC member of numerous international conferences including ACM KDD, ACM CIKM, and ECML/PKDD. Moreover, this year, he also serves as the PC Chair of the following three conferences--namely, IEEE International Conference Cloud and Big Data Computing (CBDCom) 2015, International Conference on Big Data Applications and Services (BigDAS) 2015, and IEEE International Conference on Internet of Things (iThings) 2015.

A Smart Realtime Video Cloud Platform Using Deep Learning

Weishan Zhang

China University of Petroleum (East China), China
E-mail: zhangws@upc.edu.cn

Abstract:

With the rapid growth of video data from various sources, there arise requirements for both online real-time analysis and offline batch processing of large-scale video data. Existing video processing systems fall short in addressing many challenges in large-scale video processing, for example performance, data storage, and fault-tolerance. We proposes a general cloud-based architecture and platform that can provide a robust solution to intelligent analysis and storage for video data based on deep learning. We have implemented the BiF architecture using both Hadoop platform and Storm platform. The proposed architecture can handle continual surveillance video data effectively, where real-time analysis, batch processing, distributed storage and cloud services are seamlessly integrated to meet the requirements of video data processing and management. The evaluations show that the proposed approach is efficient in terms of performance, storage, and fault-tolerance.

Biography:

Weishan Zhang is a professor, deputy head for research of Department of Software Engineering, China University of Petroleum. He was a Research Associate Professor/Senior Researcher at Computer Science Department, University of Aarhus (til Dec. 2010). He visited Department of Systems and Computer Engineering, Carleton University, Canada (Jan. 2006 - Jan. 2007). He was an Associate Professor at School of Software Engineering, Tongji University, Shanghai, China (Aug. 2003- June 2007). He was a NSTB post-doctoral research fellow at Department of Computer Science, National University of Singapore (Sept. 2001 to Aug. 2003). My current H-index is 13, I10-index is 18, and the number of total citations is over 500 in Jan 2015.

A Socio-ecological Service Discovery Model in Machine-to-Machine Communication Networks

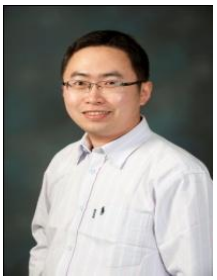
Lu Liu

University of Derby, United Kingdom
E-mail: L.Liu@derby.ac.uk

Abstract:

A socio-ecological model, called SESD, will be introduced in this talk for advanced service discovery in M2M communication networks. In the SESD network, each device can perform advanced service search to dynamically resolve complex enquires, and autonomously support and co-operate with each other to quickly discover and self-configure any services available in M2M communication networks to deliver a real-time capability. This model has been evaluated and simulated in a dynamic M2M environment. The experiment results show that SESE can self-adapt and self-organize themselves in real time to generate higher flexibility and adaptability and achieve a better performance than the existing methods.

Biography:



Lu Liu is the Professor of Distributed Computing in the University of Derby. Prof Liu received his PhD degree from University of Surrey (funded by DIF DTC) and MSc in Data Communication Systems from Brunel University. Prof Liu's research interests are in areas of cloud computing, service computing, cyber-physical-social computing and peer-to-peer computing. Prof Liu has secured many research projects which are supported by UK research councils, BIS and RLTF as well as industrial research partners. Prof Liu has over 100 scientific publications in reputable journals, academic books and international conferences. He was recognized as a Promising Researcher by University of Derby in 2011 and received BCL Faculty Research Award in 2012. Prof Liu has chaired many international conference and workshops and has served as an Editorial Board member for several international computing journals. He is a Fellow of British Computer Society (BCS).

UIC 2015 Regular Papers

- Session 1：Home and Health

Session Chair：Zhenmin Zhu (zmzhu@ict.ac.cn)

Time：14:00-15:40，Wednesday，August 12, 2015

Location: Amber Jinhui 3, Park Plaza Beijing Science Park Hotel

Recognizing Gait Pattern of Parkinson's Disease Patients Based on Fine-Grained Movement Function Features
Tianben Wang, Daqing Zhang, Zhu Wang, Jiangbo Jia, Hongbo Ni and Xingshe Zhou

SensorAct: A Decentralized and Scriptable Middleware for Smart Energy Buildings
Pandarasamy Arjunan, Manaswi Saha, Haksoo Choi, Manoj Gulati, Amarjeet Singh, Pushpendra Singh, and Mani B. Srivastava

Hygeia: A Practical and Tailored Data Collection Platform for Mobile Health
Chao Xu, Wei Zheng, Pan Hui, Kunpeng Zhang and Hengchang Liu

SAPM: Self-Adjusting Pipelining Mechanism for Efficient Bulk Data Dissemination in Smart Homes
Jun-Wei Li, Shi-Ning Li, Yu Zhang, Bin Guo and Zhe Yang

Monitoring Sleep and Detecting Irregular Nights through Unconstrained Smartphone Sensing
Ke Huang, Xiang Ding, Jing Xu, Guanling Chen and Wei Ding

- Session 2：Social and Crowd

Session Chair：Lin Liu (linliu@tsinghua.edu.cn)

Time：14:00-15:40，Wednesday，August 12, 2015

Location: Indigo Grand Ballroom 2, Park Plaza Beijing Science Park Hotel

WSelector: A Multi-scenario and Multi-view Worker Selection Framework for Crowd-Sensing
Jiangtao Wang, Sumi Helal, Yasha Wang and Daqing Zhang

A Novel Graph-Based Method to Study Community Evolutions in Social Interactions
Zhenyu Wu, Yu Liu and Jianwei Niu

CrowdPic: A Multi-coverage Picture Collection Framework for Mobile Crowd Photographing
Huihui Chen, Bin Guo, Zhiwen Yu and Liming Chen

Heterogeneous Sparse Relational Data Co-clustering in Social Network
Guowei Shen, Wei Wang, Wu Yang, Miao Yu, and Guozhong Dong

A Context-Aware Spontaneous Mobile Social Network
Natália De Arruda Botelho Navarro, Cristiano André Da Costa , Jorge Luis Victória Barbosa, and Rodrigo Da Rosa Righi

- Session 3：Smart Transportation

Session Chair：Chao Chen (ivanchao.chen@gmail.com)

Time：16:00-18:00，Wednesday，August 12, 2015

Location: Amber Jinhui 3, Park Plaza Beijing Science Park Hotel

Detecting Urban Road Condition and Disseminating Traffic Information by VANETs
Yuwei Xu, Jian Wang, Tingting Liu, Wenping Yu, and Jingdong Xu

A Novel Trace-Aided Data Dissemination Algorithm in Vehicular Networks
Xian Shi, Gang Zhang, Chunfeng Liu, and Tingting Han

A Hybrid Cellular Automaton Mechanism Inspired Approach for Dynamic and Real-Time Traffic Lights Scheduling
Wenbin Hu, Huan Wang, Liping Yan, and Bo Du

Intelligent Taxi Service System Based on Carrier-Cloud-Client
Minglu Yu, Nanjie Liu, Haitao Zhao, and Jiangqin Peng

An Acoustic Traffic Monitoring System: Design and Implementation
Yueyue Na, Yanmeng Guo, Qiang Fu, and Yonghong Yan

Taxi Operation Optimization Based on Big Traffic Data
Qiuyuan Yang, Zhiqiang Gao, Xiangjie Kong, Azizur Rahim, Jinzhong Wang, and Feng Xia

- Session 4：Location and Activity

Session Chair：Zhiyong Yu (yzyhb@qq.com)

Time：8:30-10:10，Thursday，August 13, 2015

Location: Amber Jinhui 1, Park Plaza Beijing Science Park Hotel

Sensing the Pulse of Urban Activity Centers Leveraging Bike Sharing Open Data
Longbiao Chen, Dingqi Yang, Jeremie Jakubowicz, Gang Pan, Daqing Zhang, and Shijian Li

An Interpretable Orientation and Placement Invariant Approach for Smartphone Based Activity Recognition
Haodong Guo, Ling Chen, Gencai Chen, and Mingqi Lv

On Improvement of the DV-RND Localization in Wireless Sensor Networks
Cheng Zhong, Bang Wang, and Laurence T. Yang

Characterising and Predicting Urban Mobility Dynamics by Mining Bike Sharing System Data
Ida Bagus Irawan Purnama, Neil Bergmann, Raja Jurdak, and Kun Zhao

Underground Magnetic Localization Method and Optimization Based on Simulated Annealing Algorithm
Qiwei Huang, Xiaotong Zhang, and Jing Ma

- Session 5：System and Context

Session Chair：Chang-ai Sun (casun@ustb.edu.cn)

Time：10:30-12:30，Thursday，August 13, 2015

Location: Amber Jinhui 1, Park Plaza Beijing Science Park Hotel

Programming Method and Formalization for Activity-Oriented Context-Aware Applications
Xuansong Li, Xianping Tao, and Jian Lu

An Adaptive Demodulation Structure for UHF RFID Readers Based on the Phase of Input Signal
Yang Qing, Li Jian-Cheng, Wang Hong-Yi, and Zeng Xiang-Hua

Intelligently Creating Contextual Tutorials for GUI Applications
Guo Li, Tun Lu, Jiang Yang, Xiaomu Zhou, Xianghua Ding, and Ning Gu

Super Rack: Reusing the Results of Queries in MapReduce Systems
Zhanye Wang, Tao Xu, and Dongsheng Wang

Flexible Management of Cloud-Connected Digital Signage
Mohit Sethi, Maria Lijding, Mario Di Francesco, and Tuomas Aura

Recognition of New and Old Banknotes Based on SMOTE and SVM
Ou Jin, Lizhao Qu, Jianbiao He, and Xi Li

- Session 6：Secruity and Privacy

Session Chair：Guangquan Xu (losin@tju.edu.cn)

Time：8:30-10:10，Thursday，August 13, 2015

Location: Amber Jinhui 3, Park Plaza Beijing Science Park Hotel

Guardian Angel: A Smartphone Based Personal Security System for Emergency Alerting
Hansong Guo, Liusheng Huang, He Huang, Zehao Sun, Jiade Peng, Zhuolong Yu, Zhenyu Zhu, Hongli Xu, and Hengchang Liu

Deploying and Evaluating Pufferfish Privacy for Smart Meter Data
Stephan Kessler, Erik Buchmann, and Klemens Böhm

HyCPK: Securing Identity Authentication in Ubiquitous Computing
Guangquan Xu, Yan Ren, Gaoxu Zhang, Bin Liu, Xiaohong Li, and Zhiyong Feng

A Scheme for Activity Trajectory Dataset Publishing with Privacy Preserved
Xianming Li, Shen Wei, and Guangzhong Sun

Context-Aware Trust-Based Management of Vehicular Ad-Hoc Networks (VANETs)
Vangalur Alagar and Kaiyu Wan

- Session 7：Sensor and Phone Networks

Session Chair：Alvin Chin (ubiquitousdude@gmail.com)

Time：10:30-12:30，Thursday，August 13, 2015

Location: Amber Jinhui 3, Park Plaza Beijing Science Park Hotel

Intelligent Reconfigurable Gateway for Heterogeneous Wireless Sensor and Actuator Networks
Kevin I-Kai Wang, Diwakar Somu, Tejas Parnerkar, and Zoran Salcic

Passively Testing Routing Protocols in Wireless Sensor Networks
Xiaoping Che, Stephane Maag, Hwee-Xian Tan, and Hwee-Pink Tan

BWMesh: A Multi-hop Connectivity Framework on Android for Proximity Service
Yufeng Wang, Jing Tang, Qun Jin, and Jianhua Ma

The Bimodal Probability Density Distribution of the Survivability for Wireless Sensor Networks under Random Failures
Yan Lv, Wei Huangfu, and Zhongshan Zhang

WiGroup: A Lightweight Cellular-Assisted Device-to-Device Network Formation Framework
Yufeng Wang, Hongxu Zhang, Chiu C Tan, Xiaojiang Du, and Bo Sheng

UIC 2015 Posters

Chair：Shijian Li/Bin Guo (shijianli@zju.edu.cn / guobin.keio@gmail.com)

Time：12:30-14:00，Wednesday，August 12, 2015

Location: 3rd Floor Lobby, Park Plaza Beijing Science Park Hotel

Vista Wearable: Seeing through Whole-Body Touch without Contact
Edgardo Molina, Wai L. Khoo, Franklin Palmer, Lei Ai, Tony Ro, and Zhigang Zhu

On Trajectory Prediction in Indoor Retail Environments for Mobile Advertising Using Selected Self-Histories
Osama O. Barzaiq, Seng W. Loke, and Hongen Lu

FRID: Indoor Fine-Grained Real-Time Passive Human Motion Detection
Liangyi Gong, Dapeng Man, Jiguang Lv, Guowei Shen, and Wu Yang

An Online Approach for Detecting Repackaged Android Applications Based on Multi-user Collaboration
Qigeng Chen, Jiayu Wang, and Yuping Wang

Collaborative Bicycle Sensing for Air Pollution on Roadway
Xiaofeng Liu, Chaosheng Xiang, Bin Li, and Aimin Jiang

An Adaptive Memetic Algorithm for Designing Artificial Neural Networks
Pengxiao Shan and Weiguo Sheng

Mobile Crowd Assisted Navigation for the Visually Impaired
Greg Olmschenk, Christopher Yang, Zhigang Zhu, Hanghang Tong, and William H. Seiple

Robust Deployment for Data Collecting under Random Node Failures in Wireless Sensor Networks
Yan Zhang, Wei Huangfu, and Zhongshan Zhang

Sparse Multi-target Localization and Tracking in Wireless Sensor Network

Zuoxin Xiahou, Xiaotong Zhang, and Jing Ma

Multi-class Object Recognition and Segmentation Based on Multi-feature Fusion Modeling
Chen Jing-Xia, Zhang Yan-Ning, Jiang Dong-Mei, Li Fei, and Xie Jia

An Improved WC-RDV Localization Algorithm for WSNs
Guozhi Song and Dayuan Tam

Multi-link Passive Localization with Low Cost in Wireless Sensor Networks
Zhanyong Tang, Jianan Kou, Chao Qu, Tianzhang Xing, Xiaojiang Chen, Dingyi Fang, and Ruchen Wang

Energy Cost Optimization via Intelligent Cell Breathing in Green Heterogeneous Networks
Qiang Yang, Bang Wang, and Laurence T. Yang

InCamShare: An Automatic Playlist Creator Employs Users' Shared Experience on Mobile Devices
Kohei Matsumura and Yasuyuki Sumi

Discovering Urban Social Functional Regions Using Taxi Trajectories
Ke Fan, Daqiang Zhang, Yunsheng Wang, and Shengjie Zhao

strDoctor: Indicate Stroke for Elderly through Body Sensing Game
Hanchao Yu, Xiaodong Yang, Yiqiang Chen, and Junfa Liu

Discovering Spatial Contexts for Traffic Flow Prediction with Sparse Representation Based Variable Selection
Su Yang, Shixiong Shi, Xiaobing Hu, and Minjie Wang

UIC 2015 Videos

Chair：Alvin Chin/Bin Guo (ubiquitousdude@gmail.com /guobin.keio@gmail.com)

Time：12:30-14:00，Wednesday，August 12, 2015

Location: 3rd Floor Lobby, Park Plaza Beijing Science Park Hotel

Perception Enhanced Robotic Arm
Zhenyu Ye, Shugang Wang, Sha Yang, Shijian Li, and Gang Pan

The Future of Smart Dressing Mirror: An Open Innovation Concept Video
Guangyu Gao, Chenchen Bai, Wei Zheng, and Chi Harold Liu

iPri: Context-Aware Access Control and Privacy Policy Recommendation
Guoyun Li, Yaozhi Zhang, Xianqi Yu, and Yuqing Sun

Flier Meet: Crowdsensing Enabled Urban Public Information Reposting and Sharing
Huihui Chen, Wenqian Nan, Bin Guo, Wenle Wu, Zhiwen Yu, and Xingshe Zhou

Smartworld: A Better World
Guanqing Liang, Jiannong Cao, and Xuefeng Liu

Discovering User Connections Using Their Shared Images on Social Media
Ming Cheung and James She

Ubiquitous Intelligent Computing in 10 Years VS Chinese Kungfu
Liantao Ma, Yibo Wang, Junyi Ma, Yuanduo He, Zhaopeng Qiu, Zhengyang Qin, and Yasha Wang

ATC 2015 Technical Program

ATC 2015 Regular Papers

- Session 1：Services and Clouds

Session Chair：Beihong Jin (jbh@otcaix.iscas.ac.cn)

Time：14:00-15:40 & 16:00-18:00，Wednesday，August 12, 2015

Location: Saffron Tianhong 3, Park Plaza Beijing Science Park Hotel

Exploring the User Response Time of Login Application Based on SOAE
Dong Wang, Mingquan Zhou, Sajid Ali, Pengbo Zhou, Nighat Saeed, and Qiao Liu

Fast Processing of Conversion Time Data Flow in Cloud Computing via Weighted FP-Tree Mining Algorithms
Xiao-Jun Chen and Jia Ke

An Efficient Dispatch and Decision-Making Model for Taxi-Booking Service
Cheng Qiao, Mingming Lu, Yong Zhang, and Kenneth N. Brown

A Heuristic Adaptive Threshold Algorithm on IaaS Clouds
Qingxin Xia, Yuqing Lan, and Limin Xiao

Semantic Security for E-Health: A Case Study in Enhanced Access Control
Yang Lu and Richard O. Sinnott

Knowledge-Enhanced Multi-semantic Fusion for Concept Similarity Measurement in Continuous Vector Space
Yuanyuan Cai, Wei Lu, Xiaoping Che, and Yuxun Lu

Optimizing the Quality of Service for a Publish/Subscribe System
Fusang Zhang, Yuwei Yang, Yuyao Yang, and Beihong Jin

Management of Unstructured Geological Data Based on Hadoop
Dongqi Wei and Yueqin Zhu

Research on Computational Experiment of the Service Operation Strategy in Collaborative Manufacturing
Xue Xiao and Kou Yan-Min

Secure Network Bandwidth Provisioning for Quality of Services (QoS) Guarantees
Kaiqi Xiong

A Generic Formulated KID Model for Pragmatic Processing of Data, Information, and Knowledge
Atsushi Sato and Runhe Huang

Survivability Analysis with Border Effects for Power-Aware Mobile Ad Hoc Network
Zhipeng Yi and Tadashi Dohi

- Session 2：IoT

Session Chair：Teng Long (longteng@ios.ac.cn)

Time：8:30-10:10 & 10:30-12:30，Thursday，August 13, 2015

Location: Saffron Tianhong 2, Park Plaza Beijing Science Park Hotel

Towards Trustworthy Integrated Clinical Environments
Wenbing Zhao

IMSet-SHA3-Tree: The Efficient Data Integrity Verification Based on SHA3 and MSet-XOR-Hash
Feng Xiao, Cai Luting, Dai Zibin, and Li Wei

High Spatial Resolution Remote Sensing Data Computing Pattern Based on Feature Primitives
Ming Dongping, Zhou Wen, Tan Tian, Shen Zhanfeng, and Luo Jiancheng

A Fast Modified DOA Estimation Algorithm with Rotation Array for Vehicle Security in Intelligent Transportation System
Xiaoyu Lan, Liangtian Wan, Guangjie Han, and Lei Shu

Verification for Security-Relevant Properties and Hyperproperties
Teng Long and Guoqing Yao

Predatory Search Strategy Aided Monte Carlo Localization for Cellular Networks
Wenwen Liu, Guozhi Song, and Jigang Wu

2DMT Contrast Research for Symmetrical Anisotropic and Isotropic Bodies
Yang Miao-Xin, Tan Han-Dong, and Meng Xiao-Hong

A Hybrid Vertex Outlier Detection Method Based on Distributed Representation and Local Outlier Factor
Zili Li and Li Zeng

Addressing Hardware Security Challenges in Internet of Things: Recent Trends and Possible Solutions
Subha Koley and Prasun Ghosal

- Session 3：Knowledge and Intelligences

Session Chair：Chen Lu (ieucl@163.com)

Time：8:30-10:10 & 10:30-12:30，Thursday，August 13, 2015

Location: Saffron Tianhong 3, Park Plaza Beijing Science Park Hotel

A Trust-Based Usage Control Scheme for Resource Sharing
Chen Lu, Zhang Li-Qiang, Zhou Qing, and Chen Yun

Component-Based Framework for Digital Nautical Chart System
Yuyu, Bin Zhao, and Honghai Zhu

An Automated Aero-Engine Thrust Detecting Method Based on Sound Recognition
Teng Teng and Zhao Zhihua

A High-Throughput Processor for Dual-Field Elliptic Curve Cryptography with Power Analysis Resistance
Wei Li, Xiaoyang Zeng, Xiao Feng, and Zibin Dai

The Research on Broadcast Television User Interest Model Based on Principal Component Analysis
Xin Wang, Fu Lian Yin, Tian Rui Yang, and Jian Bo Liu

ATC 2015 Short Papers

- Session 1：Models and Systems

Session Chair： Ray Y. Zhong (zhongzry@gmail.com)

Time：14:00-15:40，Wednesday，August 12, 2015

Location: Indigo Grand Ballroom 1, Park Plaza Beijing Science Park Hotel

Judging Subjective and Objective Sentence Based on 2-POS Subjective Models
Min Zhao, TaoZheng Zhang, and JianPing Chai

Analyze Login and Certification Time Based on SOA with EIP Architecture
Dong Wang, Mingquan Zhou, Sajid Ali, Pengbo Zhou, Nighat Saeed, and Qiao Liu

The Urban Villages' Topographic Database System Construction Based on Oracle Map Fusion Middleware
Tang Jianxiong, He Yuanrong, Liao Guihua, and Nie Jing

A Microblog Data Acquisition Method Based on Follow-Group Mode
Beige Li, Yuqing Zhang, Chuanfeng Zhou, and Donghui Li

A Job-Shop Scheduling Model with Real-Time Feedback for Physical Internet-Based Manufacturing Shopfloor
Ray Y. Zhong and Chen Xu

Improving Near Surface Soil Moisture Retrieval Based on Radiative Transfer Model
Xianghua Wang

- Session 2：Service and Clouds

Session Chair：Jyh-Haw Yeh (jhyeh@boisestate.edu)

Time：16:00-18:00，Wednesday，August 12, 2015

Location: Excutive Board Room, Park Plaza Beijing Science Park Hotel

Hot Topics Extraction from Chinese Micro-blog Based on Sentence
Chuanfeng Zhou, Yuqing Zhang, Beige Li, and Donghui Li

Big Data Transformation Testing Based on Data Reverse Engineering
Dawit G. Tesfagiorgish and Li JunYi

A Probabilistic Homomorphic Encryption Algorithm over Integers - Protecting Data Privacy in Clouds
Jyh-Haw Yeh

An Application Research of Unbiased Converted Measurement Kalman Filter
Zongpeng Qu and Yuan Wei

Creating Multi-domain Query Plans on Data Services
Xin Chen, Yanbo Han, Yan Wen, Feng Zhang, and Wei Liu

- Session 3：IoP and Intelligence

Session Chair： Zhangbing Zhou (zhangbing.zhou@gmail.com)

Time：16:00-18:00，Wednesday，August 12, 2015

Location: Indigo Grand Ballroom 1, Park Plaza Beijing Science Park Hotel

Research on Evolvable Hardware Based on Population Hybridization Monkey-King Genetic Algorithm
Ran Huan-Huan, Pan Xu-Dong, and Tian Jun-Lin

An Energy Efficient Routing Protocol for Underwater WSNs
Beibei Yao, Zhangbing Zhou, Lei Shu, and Riliang Xing

API Sequences Based Malware Detection for Android
Jiawei Zhu, Zhengang Wu, Zhi Guan, and Zhong Chen

The Assessment Strategy for Intelligent Algorithms Using Improved Osculating Value Method
Xueshi Dong, Wenyong Dong, and Yufeng Wang

Study on Intelligent Logistics System: Based on Internet of Vehicles
Dehong Xu, Xufeng Zhang, and Qiuchao Deng

Efficiently Preserving the Privacy of the Semantic Routing in Named Data Network
Xinghan Jiang and Qiming Huang

Food Image Recognition with Convolutional Neural Networks
Weishan Zhang, Dehai Zhao, Wenjuan Gong, Zhongwei Li, Qinghua Lu, and Su Yang

Enterprise Application Security in Android Devices Using Short Messaging Service under Unified Communication Framework
Souvik Chowdhury and Prasun Ghosal

ScalCom 2015 Technical Program

- Session 1：Modelling and Simulation in Applications

Session Chair：Bofeng Zhang / Zhongshan Zhang

(bfzhang@shu.edu.cn/ zhangzs@ustb.edu.cn)

Time：14:00-15:40 & 16:00-18:00，Wednesday，August 12, 2015

Location: Saffron Tianhong 1, Park Plaza Beijing Science Park Hotel

Large Scale Distributed Information System Emulation Platform Based on Cloud Computing Technology
Dawei Li

Application Reliability Evaluation for Tactical Internet Based on OPNET
Shuo Zhang, Ning Huang, and Xiaolei Sun

Research on Tasks Satisfaction Type of Intelligent Planning Algorithm
Tong Wang, Yiming Bi, Ping Yang, and Shimei Zhai

Modeling of Rectangular Periodic Impulsive Noise in Low-Voltage Power Line Channels
Jun Ye, Shenggang Huang, Hongliang Sun, and Yi Wang

CoGA: Extension of GA on Heterogeneous System
Peng Cheng, Yutong Lu, Tao Gao, and Chenxu Wang

Improved Chain Calculation for Sub-chain Dependencies in Layered Queueing Networks
Lianhua Li and Greg Franks

The Analysis of the Electromagnetic Performance of Planar Mesh Reflector Based on the Electrical Contact Model of Metallic Junction
Yu-Ru Mao, Yong Jun Xie, and Zhen Hua Tian

Review of Pitch Control for Variable Speed Wind Turbine
Muhammad Hamid Mughal and Li Guojie

- Session 2：Algorithms and Data Structures for Scalability-Rethinking

Session Chair：Didier El Baz /Dawei Li (elbaz@laas.fr/ lidw1981@163.com)

Time：14:00-15:40 & 16:00-18:00，Wednesday，August 12, 2015

Location: Saffron Tianhong 2, Park Plaza Beijing Science Park Hotel

Scalable Explicit Multicasting on Internet: A Topological-Aware Approach
Wen-Kang Jia, Gen-Hen Liu, and Yaw-Chung Chen

Visual Analysis of Harbor Hydrological Data in MANET
Cheng Gong, Wei Huangfu, Zhongshan Zhang, and Chunjiang Zhang

Accuracy Enhanced Distributed Sparse Matrix Solver with Block-Based Pivoting for Large Linear Systems
Esteban Torres, Yul Chu, and Jin H. Park

Fast Parallel Extract-Shift and Parallel Deposit-Shift in General-Purpose Processors
Wei Li, Zhongxiang Chang, Xiao Feng, and Zibin Dai

A Trust-Level Based Authorization Model Using Signaling Games
Chen Lu, Zhou Qing, Zhang Li-Qiang, and Chen Yun

Server-Based Bitrate Allocation in Content Delivery Network
Dongyan Zhang, Hui He, and Weihua Li

Dynamic Resource Pricing and Scalable Cooperation for Mobile Cloud Computing
Xumin Huang, Rong Yu, Jiawen Kang, Jiefei Ding, Sabita Maharjan, Stein Gjessing, and Yan Zhang

Key Technology of Online Auditing Data Stream Processing
Tuo Li and Lei Wang

An Integrated Approach for Vehicle Detection and Type Recognition
Weishan Zhang, Licheng Chen, Wenjuan Gong, Zhongwei Li, Qinghua Lu, and Su Yang

Survey on Air Levitation Conveyors with Possible Scalability Properties
Li Zhu, Didier El-Baz, and Huangsheng Ning

- Session 3：Mobile and Wireless Communications

Session Chair：Weiwei Fang/Guojie Li (fangvv@gmail.com/liguojie@sjtu.edu.cn)

Time：8:30-10:10 & 10:30-12:30，Thursday，August 13, 2015

Location: Saffron Tianhong 1, Park Plaza Beijing Science Park Hotel

Design and Application of Wireless Sensor Network Based on Signal Integrity Analysis
Chaoxi Chen, Tianyu Zhang, Xiaohui Sun, Hui Zhuang, Quanwei Zhang, and Zhongshan Zhang

EDAGF: Estimation & Direction Aware Greedy Forwarding for Urban Scenario in Vehicular Ad-Hoc Network
Raj K Jaiswal and Jaidhar C D

Performance Improvement of Visible Light Communication System Using Reed-Solomon Code
Qingqing Han and Huimin Lu

An Intrusion Detection System Based on Hadoop
Zhiguo Shi and Jianwei An

A Cloud Based Framework for Identification of Influential Health Experts from Twitter
Assad Abbas, Muhammad U.S. Khan, Mazhar Ali, Samee U. Khan, and Laurence T. Yang

Optimal Relay Selection and Cooperative Power Allocation in Cognitive Radio Networks
Zhonggui Ma, Sha Ban, Wenbo Yan, Yingying Li, and Liyu Liu

Research on Multicast Congestion Control
Huo Liwen and Jin Yi

Local Recovery of Wireless Multihop Infrastructure with the Autonomous Mobile Base Station
Rui Teng, Huan-Bang Li, and Ryu Miura

Measurement Reliability Prediction for Passive Wireless Resonant SAW Sensor System
Boquan Liu

CBDCom 2015 Technical Program

- Session 1：Big Data Applications

Session Chair： G. Merlino (gmerlino@unime.it)

Time：16:00-18:00，Wednesday，August 12, 2015

Location: Indigo Grand Ballroom 3, Park Plaza Beijing Science Park Hotel

Disease Diagnosis Supported by Hierarchical Temporal Memory
Yajing Fu, Xi Guo, Yonghong Xie, Dezheng Zhan, and Hailing Li

Making Tagging Systems Resistant to Tricky Spam Attacks
Zhou Li, Cong Tang, Jianbin Hu, and Zhong Chen

Modeling Network with Topic Model and Triangle Motif
Xuewen Bian and Kun Zhang

Combining Clustering Algorithm with Factorization Machine for Friend Recommendation in Social Network
Yang Zhao, Yang Yang, Zhenqiang Mi , and Zenggang Xiong

Detecting Crowdsourcing Click Fraud in Search Advertising Based on Clustering Analysis
Xu Jiarui and Li Chen

Exploring Cloud Monitoring Data Using Search Cluster and Semantic Media Wiki
Samneet Singh, Yan Liu, and Mehran Khan

Software Defined Cities: A Novel Paradigm for Smart Cities through IoT Clouds
G. Merlino, D. Bruneo, F. Longo, A. Puliafito, and S. Distefano

- Session 2：Big Data Processing Framework

Session Chair： Weishan Zhang (wangws2014@gmail.com)

Time：14:00-15:40，Wednesday，August 12, 2015

Location: Indigo Grand Ballroom 3, Park Plaza Beijing Science Park Hotel

An Empirical Comparison of Three Ensemble Methods for Medical Data Mining with Apache Spark
Yiang Hua, Jian Pan, Zhaofeng Yan, and Yunwei Qiu

Electricity Consumption Analysis and Applications Based on Smart Grid Big Data
Haini Qu, Ping Ling, and Libo Wu

Fast Fine-Grained Air Quality Index Level Prediction Using Random Forest Algorithm on Cluster Computing of Spark
Chuanting Zhang and Dongfeng Yuan

Processing Skyline Groups on Data Streams
Aziguli Wulamu, Hailing Li, Xi Guo, Yonghong Xie , and Yajing Fu

A MapReduce Cluster Deployment Optimization Framework with Geo-distributed Data
Shanshan Li, Qinghua Lu, Weishan Zhang, and Liming Zhu

Experiences on a Video Management Cloud Based on Hadoop
Weishan Zhang, Ning Wang, Qinghua Lu, and Su Yang

- Session 3：Cloud Computing Innovations

Session Chair：Xinfeng Ye (xinfeng@cs.auckland.ac.nz)

Time：8:30-10:10 & 10:30-12:30，Thursday，August 13, 2015

Location: Amber Jinhui 2, Park Plaza Beijing Science Park Hotel

Dynamic Load Balancing Algorithm in Cloud
Hao Shuixia and Shen Dandan

Optimizing Data Partition for NoSQL Cluster
Xiangdong Huang, Jianmin Wang, Yu Zhong, and Philip S. Yu

Access Control for Cloud Applications
Xinfeng Ye

Inspection of Hidden Dangers Based on Cloud Messaging Push Service
Ruixin Li and Xiong Luo

CPN Based Validation on Pervasive Cloud Task Migration
Lianzhang Zhu, Yong Wang, Weishan Zhang, and Shaochao Tan

Formalizing Mobile Cloud Service Migration with Event-B
Guoping Zhang, Luxi Zhao, Weishan Zhang, Kuiyi Yang, and Shouchao Tan

An Improved Genetic-Based Approach to Task Scheduling in Inter-cloud Environment
Miao Zhang, Yang Yang, Zhenqiang Mi, and Zenggang Xiong

- Session 4：Cloud for Analytics

Session Chair：Qinglu Ma (mql360@qq.com)
Time：14:00-15:40 & 16:00-18:00，Wednesday，August 12, 2015

Location: Amber Jinhui 2, Park Plaza Beijing Science Park Hotel

Tourist Service in Natural Scenic Area Based on RFID Technique
Xiaoming He, Qinglu Ma, and Yazao Yang

GACA-VMP: Virtual Machine Placement Scheduling in Cloud Computing Based on Genetic Ant Colony Algorithm Approach
Liang Hong and Ge Yufei

Toward a Framework in Cloudlet-Based Architecture for a Real-Time Predictional Model
Olivera Kotevska, Ahmed Lbath, and Samia Bouzefrane

Virtual Cloud Bank: Cloud Service Broker for Intermediating Services Based on Semantic Analysis Models
Joonseok Park, Youngmin An, and Keunhyuk Yeom

Prediction of Hidden Dangers in Mine Production Using Timeliness Managing Extreme Learning Machine for Cloud Services
Xiong Luo, Xiaona Yang, Xiaohui Chang, and Cheng Zhang

Distributed State Monitoring for IaaS Cloud with Continuous Observation Sequence
Bin Hong, Yazhou Hu, Fuyang Peng, and Bo Deng

Towards a Deep Belief Network-Based Cloud Resource Demanding Prediction
Weishan Zhang and Pengcheng Duan

SDN-Based ARP Attack Detection for Cloud Centers
Huan Ma, Hao Ding, Yang Yang, Zhenqiang Mi, and Miao Zhang

Task Scheduling Algorithm Based on PSO in Cloud Environment
Anqi Xu, Yang Yang, Zhenqiang Mi, and Zenggang Xiong

- Session 5：Big Data Management and Infrastructure

Session Chair：Jean Jyh-Jiun Shann (jjshann@cs.nctu.edu.tw)

Time：8:30-10:10，Thursday，August 13, 2015

Location: Amber Jinhui 2, Park Plaza Beijing Science Park Hotel

Optimizing NoSQL DB on Flash: A Case Study of RocksDB
Fei Yang, Kun Dou, Siyu Chen, Mengwei Hou, Jeong-Uk Kang, and Sangyeun Cho

Instruction Emulation and OS Supports of a Hybrid Binary Translator for x86 Instruction Set Architecture
I-Chun Liu, I-Wei Wu, and Jean Jyh-Jiun Shann

Enabling FPGAs in Hyperscale Data Centers
Jagath Weerasinghe, Francois Abel, Christoph Hagleitner, and Andreas Herkersdorf

IoP 2015 Technical Program

- Session 1：Digital World and System

Session Chair：Lu Liu (l.liu@derby.ac.uk)

Time：14:00-15:40，Wednesday，August 12, 2015

Location: Amber Jinhui 1, Park Plaza Beijing Science Park Hotel

Uniform Resource Identifier Encoded by Base62x
Zhenxing Liu, Hao Liu, James Hardy, and Lu Liu

Nash Bargaining Game Based Subcarrier Allocation for Physical Layer Security in Orthogonal Frequency Division Multiplexing System
Shuanglin Huang, Jianjun Tan, and Jian Xu

An Improved S-Box of Lightweight Hash Function SPOGENT
Xiang Wang , Pei Du, Quanneng Shen, Bin Xu, Lin Li, Weike Wang, and Tongsheng Xia

Research on WiFi User Dwell Time Distribution
Jie Meng, Yihong Hu, Guochu Shou, Zhigang Guo, and Junfei Huang

Mobile Crowdsourcing: Architecture, Applications, and Challenges
Yufeng Wang, Xueyu Jia, Qun Jin, and Jianhua Ma

- Session 2：Social Networks and Data Mining I

Session Chair：Qun Jin (jin@waseda.jp)

Time：14:00-15:40，Wednesday，August 12, 2015

Location: Excutive Board Room, Park Plaza Beijing Science Park Hotel

Knowledge Diffusion in Complex Networks
Yichao Zhang, M.A. Aziz-Alaoui, Cyrille Bertelle, Jihong Guan, and Shuigeng Zhou

Identify Influential Spreaders in Complex Real-World Networks
Ying Liu, Ming Tang, Jing Yue, and Jie Gong

Preference and Movement Pattern Similarity-Based Resource Discovery Enhancement Algorithm for Internet of People
Ru-Long Chen, Zhi-Yuan Li, Yong-Zhao Zhan, and Pan-Pan Wu

Prediction and Clustering of User Relationship in Social Network
Peiyuan Sun, Shengli Liu, Nannan Wu, Bo Li, and Jianxin Li

Threshold Factor Track Classification Algorithm Based on Target Motion Model
Xiang Wang, Shiyang Chen, Xiaocui Wang, Yang Xu, Rong Zhang, Tao Wang, and Bin Xu

- Session 3：Social Networks and Data Mining II

Session Chair：Lu Liu (l.liu@derby.ac.uk)

Time：16:00-18:00，Wednesday，August 12, 2015

Location: Amber Jinhui 1, Park Plaza Beijing Science Park Hotel

Modeling of Research Topic Evolution Associated with Social Networks of Researchers
Wei Liang, Zixian Lu, Qun Jin, Yonghua Xiong, and Min Wu

Emotion Recognition in Speech Using Multi-classification SVM
Weishan Zhang, Xin Meng, Zhongwei Li, Qinghua Lu, and Shaochao Tan

Future Transport and the Internet of People
James Hardy and Lu Liu

Utilizing Latent Semantic Word Representations for Automated Essay Scoring
Cancan Jin and Ben He

A Healthcare System for Detection and Analysis of Daily Activity Based on Wearable Sensor and Smartphone
Yinghui Zhou, Dido Vongsa, Yiming Zhou, Zixue Cheng, and Lei Jing

UFirst 2015

- Session 1：Pervasive Computing and Its Application

Session Chair：Dingsheng Luo (dsluo@pku.edu.cn)

Time：8:30-10:20 & 10:40-12:10，Monday，August 10, 2015

Location: Saffron Tianhong 2, Park Plaza Beijing Science Park Hotel

Prototyping and Experimental Comparison of IR-UWB Based High Precision Localization Technologies
Jia Wang, Asad Khalid Raja, and Zhibo Pang

Creating Personal 3D Avatar from a Single Depth Sensor
Wenjuan Gong, Zhichao Wang, and Weishan Zhang

Buy4Me: A Delivery System via Mobility Prediction Based on Mobile Crowd Sensing
Yichu Qu, Zhiyong Yu, and Xianghan Zheng

A User-Side Intelligent Energy Decision Making Method Considering Grid-Load Interaction under Smart Grid
Liuyin, Xie Yinxin, Lei Ting, Wang Fengyu, and Zhang Xiaofei

Identification of Smart Home Potentials in Germany
Marie-Theres Schmid, Marco Pospiech, and Carsten Felden

SASLL: A System Annotating Semantic Label of Location
Ruosong Yang, Dianxi Shi, Han Li, and Xiaoyun Mo

Controlling Smart TVs Using Touch Gestures on Mobile Devices
Jiaxu Sun, Yongchao Li, Linzhang Wang, Xuandong Li, Xiaoxiao Ma, Jing Xu, and Guanling Chen

Extracting Features for Cardiovascular Disease Classification Based on Ballistocardiography
Yalong Song, Hongbo Ni, Xingshe Zhou, Weichao Zhao, and Tianben Wang

Real-Time Activity Recognition on Smartphones Using Deep Neural Networks
Licheng Zhang, Xihong Wu, and Dingsheng Luo

Improving Energy Efficiency in M2M Healthcare Systems Using CP-ABE Schemes
Frederic Nzanywayingoma and Huang Qiming

A Data Fusion Scheme for Modified EKF Banks Positioning Algorithm in Mixed LOS/NLOS Conditions
Jun Yan and Lenan Wu

Design of a Wearable Device for Monitoring SpO2 Continuously
Junwei Xue, Yueshan Huang, Xin Du, Xiuyong Wu, Kai Wu, Weijie Zeng, Yusheng Xi, Yimin Chen, and Yu Zhao

Anomaly Detection for User Behavior in Wireless Network Based on Cross Entropy
Chunxiao Zhang, Yihong Hu, Xinning Zhu, Zhigang Guo, and Junfei Huang

Research on E-Learning in College Education: A Model on Personalized Resource Recommendation Based on Learning Situation
Jinghua Zhang

Community Detecting Oriented Directed and Weighted Network in Mobile Crowd Sensing
Jian An, Xiaolin Gui, Xin He, Shiwei Tian, Ruobiao Wu, and Yu Sun

- Session 2：Intelligent Computing

Session Chair：Taohong Zhang / Muhammad Zubair Khan / Xiaotong Zhang
(ustbtougao@sina.com / zubairqalbi@gmail.com / zxt@ustb.edu.cn)

Time：8:30-10:20 & 10:40-12:10，Monday，August 10, 2015

Location: Saffron Tianhong 3, Park Plaza Beijing Science Park Hotel

The Algorithm of Recognizing and Comprehending Vague Tasks Based on Fuzzy Mathematical Theory
Danfeng Wu, Zhaopeng Qian, Yajing Pang, and Panpan Wang

Towards Service Evaluation and Ranking Model for Cloud Infrastructure Selection
Muhammad Zubair Khan and Usman Qamar

(C, K)m-Anonymity: A Model to Resist Sub-trajectory Linkage Attacks
Guo Hui, Han Jianmin, Lu Jianfeng, Peng Hao, and Tang Changbin

A Modified Asynchronous PSO Algorithm
Daxin Tian, Junjie Hu, Haiying Xia, and He Liu

A Modified Particle Swarm Optimization Based on Selective-Dimension Learning Model
Xia Xuewen and Gui Ling

A New Compound Kernel Function for SVM
Yonghua Mao, Xiaolin Gui, Xingshi He, and Ying Guo

Research on Uncertainty Intelligent Planning Algorithm
Tong Wang, Yiming Bi, Ping Yang, and Lin Hao

Cloud Consumer Oriented Utility Model Research in Cloud Computing
Xiaoxiong Liu, Ding Zhao, Yunchuan Qin, and Zhuo Tang

A Live Migration Algorithm for Virtual Machine in a Cloud Computing Environment
Jun Chen, Yunchuan Qin, Yu Ye, and Zhuo Tang

DeDroid: A Mobile Botnet Detection Approach Based on Static Analysis
Ahmad Karim, Rosli Salleh, and Syed Adeel Ali Shah

A Text Clustering Algorithm Hybriding Invasive Weed Optimization with K-Means
Chunmei Fan, Taohong Zhang, Zhiyong Yang, and Li Wang

Vulnerabilities Scoring Approach for Cloud SaaS
Zhou Li, Cong Tang, Jianbin Hu, and Zhong Chen

Similarity Based Hot Spot News Clustering
Yu Liu and Li Li

Polarity Searching for MPRM Logic Circuit Based on Improved Adaptive Genetic Algorithm
Xiang Wang, Rong Zhang, Weike Wang, Zhenxue He, Lin Li, Quanneng Shen, Li Ruan, and Limin Xiao

Parameters Optimization of Back Propagation Neural Network Based on Memetic Algorithm Coupled with Genetic Algorithm
Qiang Li, Xiaotong Zhang, Azzeddine Rigat, and Yiping Li

- Session 3：Reliable Communication and Security

Session Chair：Xiaotong Zhang / Xiaofeng Ouyang (zxt@ustb.edu.cn / xfouyang@sina.com)

Time：13:35-15:40 & 16:00-18:05，Monday，August 10, 2015

Location: Saffron Tianhong 2, Park Plaza Beijing Science Park Hotel

Research on Network of Networks Theory
Han Jian and Zhi Hai Tao

ARP Spoofing Based Access Control for DLNA Devices
Yong Wu and Xiaoli Zhi

BER Analysis of BPSK Based Magneto-Inductive Communication System in Clay Channel
Qiwei Huang, Xiaotong Zhang, and Jing Ma

The Simulation and Analysis of Image Change with Improved Cellular Automata and Optimization Methods
Xueshi Dong, Wenyong Dong, and Kang Sheng

Analysis and Evaluation of Spoofing Effect on GNSS Receiver
Xiaofeng Ouyang, Fangling Zeng, Pan Hou, and Ruizhi Guo

Hardware-Assisted Monitoring for Code Security in Embedded System
Xiang Wang, Quanneng Shen, Pei Du, Rong Zhang, Weike Wang, Lin Li, Bin Xu, and Huihui Ji

Optimization of Elliptic Curve Cryptography Resisting Power Attack Scalar Multiplication Algorithm in Security System on Chip
Xiang Wang, Liping Wang, Yuanchen Bai, Zhenxue He, Tao Wang, Bin Xu, He Zhang, Xiaocui Wang, Cheng Zhou, Weike Wang, and Pei Du

- Session 4：New Frontiers

Session Chair：Shengxin Zhu / Fisnik Dalipi (sxchu@foxmail.com / fisnik.dalipi@hig.no)

Time：13:35-15:40 & 16:00-18:05，Monday，August 10, 2015

Location: Saffron Tianhong 3, Park Plaza Beijing Science Park Hotel

Study on the Residents Tiered Pricing Model after the Sale of Electricity Liberalization
Lianxi Sun, Jinliang Wang, Weiwei Yang, and Hao Zhang

Public Sense: Refined Urban Sensing and Public Facility Management with Crowdsourced Data
Jiafan Zhang, Bin Guo, Huihui Chen, Zhiwen Yu, Jilei Tian, and Alvin Chin

A Cloud Computing Framework for Smarter District Heating Systems
Fisnik Dalipi, Sule Yildirim Yayilgan, and Alemayehu Gebremedhin

A Tutorial Survey on Delivery of Service Data in Vehicular Ad-Hoc Networks
Zongtao Duan, Yiqun Yan, Lei Tang, Xinxin Chen, Na An, and Zhiliang Kou

Design Concept Evaluation Based on Rough Number and Information Entropy Theory
Jie Hu, Guoniu Zhu, Jin Qi, Yinghong Peng, and Xiaohong Peng

From Complex Event Processing to Cognitive Event Processing: Approaches, Challenges, and Opportunities
Jun Yang, Meng Ma, Ping Wang, and Ling Liu

Congress Workshops

BR&A: Workshop on Biometric Recognition and Its Applications 2015

Workshop Chair：Bing Luo (luobing8888@163.com)

Time：13:35-15:40，Monday，August 10, 2015

Location: Indigo Grand Ballroom 1, Park Plaza Beijing Science Park Hotel

A Novel Sparse Representation Classification Face Recognition Based on Deep Learning
Junying Zeng, Yikui Zhai, and Junying Gan

A Real-Time Face Recognition System Based on IP Camera and Image Sets Algorithm
Junying Gan, Xiaolin Wang, and Yikui Zhai

Sparse Autoencoder for Facial Expression Recognition
Binbin Huang and Zilu Ying

Imbalanced Data Classification Based on a Hybrid Resampling SVM Method
Lu Cao and Yikui Zhai

Fast 3D Measurement Based on Colored Structured Light Projection
Bing Luo and Guiping Guo

Fourier Transform of Two Component Quasi-Periodic Optical Superlatticen
Dong Huang and Xiaojie Liang

Tunable Plasmon-Induced Transparency in Plasmonic Bus Waveguide with Side-Coupled Nano-cylinder Cavity
Dongzhou Zhong

Research on a New Power Supply for Electroplating
Yihong He, Shuiyong Yu, and Fangguo Li

Auxiliary Antenna for Spatial Modulation with Space-Time Block Code
Zhihua Yang, Zekai Fang, Yuxia Chen, and Xiaolu Zhang

An Analytical Method of Inter-harmonic Detection
Yihong He and Fangguo Li

HIISSA: The International Workshop on Human Information IntelliSense and Social Security Application

Workshop Chair：Li Shengguang (Lishengg@163.com)

Time：10:40-12:10，Monday，August 10, 2015

Location: Indigo Grand Ballroom 1, Park Plaza Beijing Science Park Hotel

A Survey and Application of Indoor Positioning Based on Scene Classification Optimization
Sun Jian, Fu Yongling, Tan Lin, and Li Shengguang

A Weak Password Cracker of UHF RFID Tags
Zhentao Zhao, Shufang Li, Yang Kang, Jiankai Li, Shengguang Li, and Weijun Hong

The Application of Data Mining Technology for the Judgment of Poisoning Cases
Jiong Wang, Yunfeng Zhang, Fanglin Wang, and Bin Gao

High Quality Face Image Acquisition with Multi-cameras
Shiwei Zhao, Yueming Wang, Rucai Zhang, and Hui Zhang

Analysis for Large Passenger Flow Area and Monitoring Technology
Li Shengguang, Tan Lin, Zhao Shiewei, and Zhou Qianli

OECA: Workshop on Optical and Electromagnetic Characteristics and Its Applications

Workshop Chair：Lei Zhang (zhangleigcss@126.com)

Time：13:35-15:40 & 16:00-18:05，Monday，August 10, 2015

Location: Indigo Grand Ballroom 1, Park Plaza Beijing Science Park Hotel

Research on the Bistatic Scattering Characteristic of Metal Sphere
Ming Lyu, Yingnan Zhang, Yang Wu, and Guangtian Li

Analysis of Design and Manufacturing Process of Compact Range Reflector Panel
Yan Wang, Huanqing Wang, Yingnan Zhang, and Xin Sun

The Design of Multi-bandpass FSS
Huanqing Wang, Xin Sun, Wei He, Yuwei Wang, and Yan Wang

Preparation and Electromagnetic Characteristics of Flake Shaped Carbonyl Iron-Zinc Oxide Nanocomposites
Xin Sun, Huanqing Wang, Zengming Chao, Lianping Zhang, Yan Wang, Yuping He, and Jianping He

A Method of PRF-Ambiguity Resolution Based on Range Frequency Domain
Zhiming Xu, Yongge Lu, and Jingping Yao

Extended Modified Equivalent Current Approximation Method for Pure or Low Lossy Dielectric Objects
Lei Zhang, Zhaoguo Hou, Chao Wang, and Hongcheng Yin

An Evaluation Method of SAR Images Based on Kullback-Leiber Divergence
Liping Hu and Chao Wang

Radar Target Precession Feature Extraction Based on Multi-view Fusion
Chuanzi Tang, Hongmei Ren, Zhihe Xiao, and Xiaohong Wang

High Frequency RCS Representation of Trihedral Corner Reflectors with Scalene Triangle Aperture
Zhefu Zhou, Hua Yan, and Hongcheng Yin

Highly Birefringent Octagonal Photonic Crystal Fibers
Shao-Hua Zhang, Jin-Hai Sun, He Cai, and Xu-Tao Zhang

PTUC: The 1st International Workshop on Privacy Threats in Ubiquitous Computing

Workshop Chair：Hong Liu /Xuanxia Yao (liuhongler@ieee.org / kathy.yao@163.com)

Time：16:00-18: 05，Monday，August 10, 2015

Location: Amber Jinhui 1, Park Plaza Beijing Science Park Hotel

A Study of Privacy Improvement Using a Randomized Blind Signature Scheme in Vehicular Networks
Liu Zhe and Liu Jianwei

YPAP: The Yoking-Proofs Based Authentication Protocol for Wearable Devices in Wireless Communications
Hong Liu, Rui Yu, and Yueliang Wan

RFID System Mutual Authentication Protocols Based on ECC
Li Feng and Xuanxia Yao

A Survey on the Integrity Checking of Outsourced Data in Cloud Computing
Haichun Zhao and Xuefeng Zheng

CV2N: The International Workshop on Connected Vehicles and Vehicular Networks

Workshop Chair：Daxin Tian (dtian@buaa.edu.cn)

Time：13:35-15:40，Monday，August 10, 2015

Location: Amber Jinhui 1, Park Plaza Beijing Science Park Hotel

The Vehicle Terminal Based on GPRS & CDMA Communication
Wang Jian and Hu Ya

An Evaluation Model for Epidemic Routing in VANETs
Daxin Tian, Yue Yang, Haiying Xia, and Guohui Zhang

Cause Analysis of Traffic Accidents Based on Degrees of Attribute Importance of Rough Set
Tao Gang, Song Huan-Sheng, Yan Yong-Gang, and Mohsen Jafari

Optimizing RSUs Network against Cascading Failure
Wenzhong Tang, Xiongyu Shan, Daxin Tian, Zhengguo Sheng, and Haiying Xia

IIMM: International Workshop on Intelligent Information Mining and Management

Workshop Chair：Chuan-Ming Liu (cmliu@csie.ntut.edu.tw)

Time：13:35-15:40，Monday，August 10, 2015

Location: Amber Jinhui 1, Park Plaza Beijing Science Park Hotel

A Novel Approach for Decision Support in Uncertain Environments: The Case of Identifying Similar News Tickers in Natural Gas Trading
Susann Dreikorn, Carsten Felden, Marco Pospiech, and Claudia Koschtial

Design and Implementation of Scalable QoS Policy Management System
Wentao Xie, Xiaomei Chen, and Dandan Li

A Distributed Hybrid Recommendation Framework to Address the New-User Cold-Start Problem
Jenq-Haur Wang and Yi-Hao Chen

SAGAWARE: The 3rd International Workshop on Situation, Activity and Goal Awareness

Workshop Chair：Liming Chen (liming.chen@dmu.ac.uk)

Time：8:30-10:20，Monday，August 10, 2015

Location: Amber Jinhui 1, Park Plaza Beijing Science Park Hotel

Fall Detection Using Plantar Inclinometer Sensor
Jianfei Sun, Zumin Wang, Bingnan Pei, Shuai Tao, and Liming Chen

Using Self-Histories to Predict Store Visits in Indoor Retail Environments for Mobile Advertising: A Ranked-Based Technique
Osama O. Barzaiq and Seng W. Loke

A Bioinspired Feature-Projection-Based Approach to Electromyographic Pattern Recognition Based for High Dimensional Sparse Sensor Data
Giovanni Schiboni, Peidong Liang, Chenguang Yang, Liming Chen, and Sanja Dogramadzi

Pervasive Healthcare Monitoring System
Mario Nava Perez, Francisco J. Alvarez Mata, Victor M. Zamudio Rodriguez, and Shumei Zhang

Device-Free Passive Human Detection Using Wi-Fi Technology: Current State and Future Trend
Qiang Lin and Yuan Yue

Towards Knowledge Driven Decision Support for Personalized Home-Based Self-Management of Chronic Diseases
Jun Qi, Liming Chen, Wolfgang Leister, and Shengxiang Yang

Unsupervised Human Activity Segmentation Applying Smartphone Sensor for Healthcare
Yin Ling and Heng Wang

TELCPASS: International Workshop on Technology-Enhanced Learning in Cyber-Physical Social Spaces

Workshop Chair： Qun Jin (jin@waseda.jp)

Time：10:40-12:10，Monday，August 10, 2015

Location: Amber Jinhui 1, Park Plaza Beijing Science Park Hotel

Predicting Dropout-Prone Students in E-Learning Education System
M. Ali Akber Dewan, Fuhua Lin, Dunwei Wen, and Kinshuk

Open Learning Platform Based on Personal and Social Analytics for Individualized Learning Support
Xiaokang Zhou, Bo Wu, and Qun Jin

CSUI: The 1st International Workshop on Crowd Sensing and Ubiquitous Intelligence

Workshop Chair：Zhu Wang / Ren Duan (wangzhu@nwpu.edu.cn / duanren@nwu.edu.cn)

Time：10:40-12:10，Monday，August 10, 2015

Location: Amber Jinhui 1, Park Plaza Beijing Science Park Hotel

Task Coordination Mechanism Based on Softman Group in the Syncretic System
Danfeng Wu, Yajing Pang, Zhaopeng Qian, and Qingchuan Zhang

A Wakeup Adapting Traffic and Receiver-Initiated Duty Cycle Protocol for WSN
Ren Duan, Dingyi Fang, and Xiaojiang Chen

UUMA: The 5th International Workshop on Universal User Modeling and Applications

Workshop Chair：Xingjian Zheng (jxzheng185@163.com)

Time：13:35-15:40&16:10-18:05，Monday，August 10, 2015

Location: Amber Jinhui 3, Park Plaza Beijing Science Park Hotel

An Improved Collaborative Filtering Based on a Weighted Network and Triadic Closure
Wangpeng Zhan and Qing Li

Application Research of Ternary Optical Computer on Gaussian Elimination
Qun Xu and Chao Xu

Research on Excellent Sequence of Period p^n over GF(q) with Genetic Algorithm
Zhihua Niu, Ling Ye, and Qinqin Li

An Event Ontology Description Framework Based on SKOS

Yujia Zhang, Wei Liu, Ning Ding, Xu Wang, and Yue Tan

Query of Uncertain QoS of Web Service
Mengting Shen and Fangfang Liu

Multiple User Characteristic Models for Online Survey Based on FP-Tree Algorithm
Kaiqiang Guo, Shaochun Wu, Guobing Zou, and Honghao Zhu

Online Survey Prediction Model for High Response Rate via Decision Tree
Naibin Luo, Shaochun Wu, Guobing Zou, and Xiang Shuai

Effective User Recommendation Model for Online Survey via BP Neural Network
Honghao Zhu, Shaochun Wu, Guobing Zou, and Naibin Luo

Analysis of MPICH Communication Interface and Optimization of Data Partitioning in Matrix Calculation
Xue Chen and Yongmei Lei

Transformation of an E-R Model into HBase Tables: A Data Store Design for IHE-XDS Document Registry
Yan Hou, Shizhong Yuan, Weimin Xu, and Daming Wei

UWSS: The International Workshop on Ubiquitous Wireless Sensor Systems

Workshop Chair：Zhengqiang Mi / Habib Rashvand

(mizq@ustb.edu.cn / rashvand.editor@gmail.com)

Time：10:40-12:10，Monday，August 10, 2015

Location: Amber Jinhui 3, Park Plaza Beijing Science Park Hotel

Efficient Frequency and Duty Cycle Control Method for Fast Pulse-Charging of Distributed Battery Packs by Sharing Cell Status
Meng Di Yin, Jiae Youn, Daejin Park, and Jeonghun Cho

Big Data Analytical Architecture Using Divide-and-Conquer Approach in Machine-to-Machine Communication
Awais Ahmad, Anand Paul, M. Mazhar Rathore, and Seungmin Rho

Priority SDN Controlled Integrated Wireless and Powerline Wired for Smart-Home Internet of Things
Andrew Mckeown, Habib Rashvand, Tony Wilcox, and Paul Thomas

A Study on Hash Chain-Based Hadoop Security Scheme
Young-Ae Jung, Si-Jae Woo, and Sang-Soo Yeo

WSNPS: International Workshop on Wireless Sensor Network and Positioning Services

Workshop Chair：Jie He (hejie1983@gmail.com)

Time：8:30-10:20，Monday，August 10, 2015

Location: Amber Jinhui 3, Park Plaza Beijing Science Park Hotel

Path-Loss Based Power Efficient Relay Networking for WCE in Body Area Networks
Dan Liu, Mingda Zhou, Yishuang Geng, and Kaveh Pahlavan

Direction Estimation Error Model of Embedded Magnetometer in Indoor Navigation Environment
Guanxiong Liu, Yishuang Geng, and Kaveh Pahlavan

Ultrasound Ranging Method Based on Network-Level Synchronization
Xiaofeng You, Xiaotong Zhang, Jie He, and Fuqiang Ma

CRLB for TOA Based Near-Ground Swarm Robotic Localization
Zhishuai Han, Jie He, Yishuang Geng, Cheng Xu, Liyuan Xu, and Shihong Duan

A Ray-Tracing Based Fingerprinting for Indoor Positioning
Tsai-Mau Wang, Po-Hsuan Tseng, Yao-Chia Chan, and Ding-Bing Lin

An Object Reconstruction Algorithm for Moving Vehicle Detection Based on Three-Frame Differencing
Yao Lin, Ma Fang, and Duan Shihong

China-Japan Social Object Modeling Bilateral Seminar

Seminar Chair：Tadashi Dohi / Weishan Zhang

(dohi@rel.hiroshima-u.ac.jp / zhangws@upc.edu.cn)

Time：8:30-10:20 & 10:40-12:10，Monday，August 10, 2015

Location: Indigo Grand Ballroom 3, Park Plaza Beijing Science Park Hotel

Session 1: Networking and Service Computing

Integrated Real-Time Self-Organized Control for Transmission Interval and Power in Autonomous Clustering of Mobile Ad Hoc Networks

Yoshiaki Kakuda, Hiroshima City University, Japan

An Energy Efficient Routing Protocol for Underwater WSNs

Zhangbing Zhou, China University of Geosciences, Beijing, China

Exploring a Uniform Framework for Mobile Collaborative Work Support Platform

Yukikazu Nakamoto, University of Hyogo, Japan

Web Service QoS Prediction Based on Adaptive Dynamic Programming Using Fuzzy Neural Networks for Cloud Services

Xiong Luo, University of Science and Technology Beijing

Session 2: Multimedia Computing

Personal Analytics and Unified Individual Modeling

Qun Jin, Waseda University, Japan

Internet of Things for Smart Towns

Yunchuan Sun, Beijing Normal University, China

Digital Explosions and Digital Clones

Jianhua Ma, Hosei University, Japan

Time：13:35-15:40 & 16:00-18:05，Monday，August 10, 2015

Location: Indigo Grand Ballroom 3, Park Plaza Beijing Science Park Hotel

Session 3: Cloud Computing and Big Data Analysis

A Performance Prediction Model for Deployment of Cross Data

Center Big Data Analytics

Qinghua Lu, China University of Petroleum, China

Optimal Allocation of Storage Resources in Multi-Version Cloud Storage Services

Mamoru Ohara, Tokyo Metropolitan Industrial Technology Research Institute, Japan

An in-Depth Context-Awareness Framework for Pervasive Video Cloud

Weishan Zhang, China University of Petroleum, China

Session 4: Green Computing

Smart Sensing for Understanding Nursing Activities and Smart Energy Applications

Sozo Inoue, Kyushu Institute of Technology, Japan

Optimal Power-Aware Design in a Cluster System: Markov Decision Process Approach

Tadashi Dohi, Hiroshima University, Japan

Session 5: Dependable Computing and Security

Reliability Improvement of Multi-Path Routing for Wireless Sensor Networks and Its Application to Wormhole Attack Avoidance

Masayuki Arai, Nihon University, Japan

Analysis of dynamic relevancy and its impact in coverage models

Jianwen Xiang, Wuhan University of Technology, China

A Dynamic Trust Model Based on the Weight for VANET

Xuanxia Yao, University of Science and Technology Beijing, China

IEEE Technical Activities Volunteer Training Workshop

IEEE has identified that many Volunteers seek to gain better understanding of available opportunities and common practices, in order to become more active within the association.To meet this need, IEEE is pleased to announce a FREE one-day workshop, aimed at training and empowering qualified Volunteers to play a bigger role in building IEEE technical communities, organizing successful IEEE activities, and training future generations of Volunteers.

The workshop will be led by Vincenzo Piuri, IEEE Technical Activities Vice President, and is designed to provide the attendees with information and tools in the following areas of IEEE activity:

- Global and Local Technical Communities
- Conferences
- Publication
- Educational Activities

All participants will be given a certificate of attendance, and will then be expected to increase and expand their proactive roles within the above areas of IEEE focus, becoming prominent IEEE Volunteer leaders, both globally and locally.

In addition, they will be encouraged to replicate this training activity in their local communities, passing this knowledge on to other potential Volunteer leaders, to cultivate a strong, knowledgeable, and engaged Volunteer base.

This workshop is open to everybody including postgraduate students, government employees, university faculty, researchers, and industry professionals who wish to become more involved in IEEE technical communities and volunteering activities.

Registration webpage:
http://ieee.fluidsurveys.com/surveys/kbair/ieee-ta-volunteer-training-workshop-registration/

Traffic Guide

You may arrive at conference venue (Park Plaza Beijing Science Park Hotel) from Beijing Capital International Airport, or Railway Stations.

1. **From Beijing Capital International Airport(BCIA) to the Park Plaza Beijing Science Park Hotel.**

(1) Taking Taxi

If you don't speak Chinese, please show the following sentence to the taxi driver.

司机同志，请送我到丽亭华苑酒店！（海淀区知春路 25 号）

It means that **"Please take me to Park Plaza Beijing Science Park Hotel (Zhichun Road No.25, Haidian District, Beijing 100191, China)"** .

It's about 31.8 km from Beijing Capital International Airport Terminal 1 or Terminal 2 to Park Plaza Beijing Science Park, and It's about 33.5 km from Beijing Capital International Airport Terminal 3 to Park Plaza Beijing Science Park.

(2)Taking Subway

From Terminal 1 or Terminal 2:

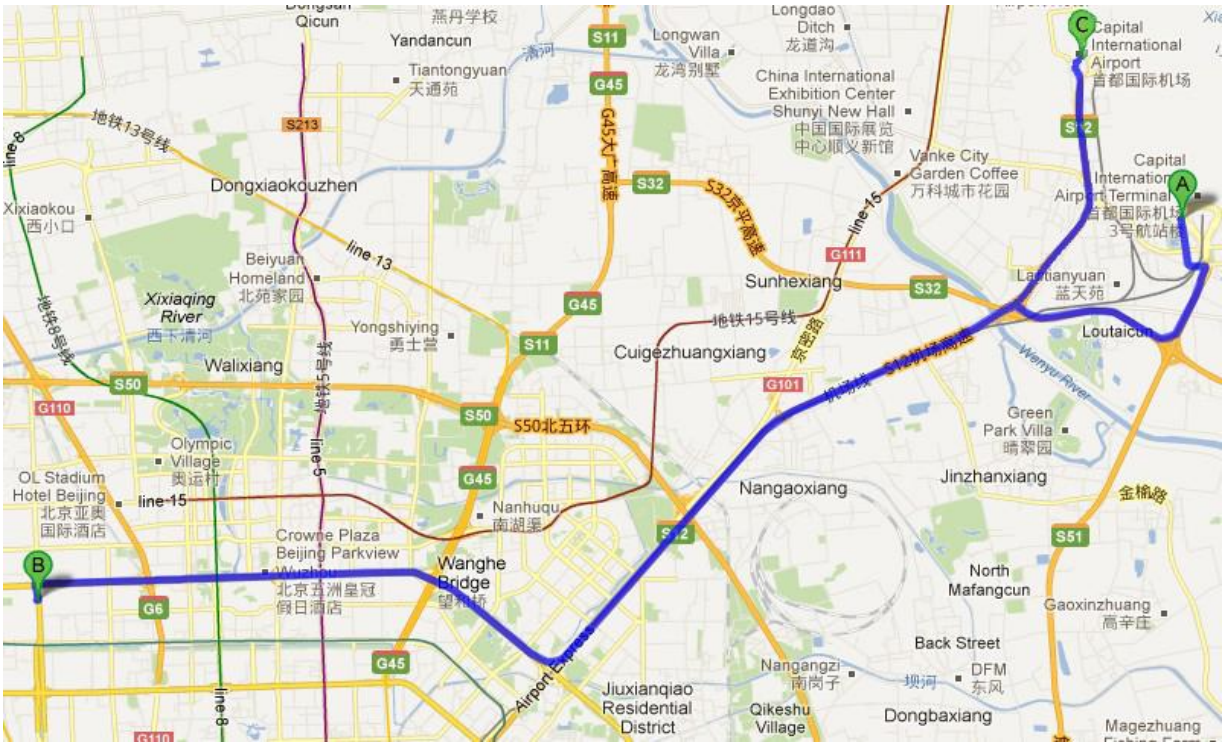
If you get off at Beijing Capital International Airport Terminal 1 or Terminal 2 Parking Lot, please take Subway Airport Express from Subway Terminal 2 Station to Sanyuanqiao Station. Then transfer to Subway Line 10 at Sanyuanqiao Station, if you want to get to Park Plaza Beijing Science Park, please get off at Zhichunlu Station and get out using Entrance F.

From Terminal 3:

If you get off at Beijing Capital International Airport Terminal 3, please take Subway Airport Express from Subway Terminal 3 Station to Sanyuanqiao Station. Then transfer to Subway Line 10 at Sanyuanqiao Station, if you want to get to Park Plaza Beijing Science Park, please get off at Zhichunlu Station and get out using Entrance F.

(3)Taking Airport Shuttle Bus (it is not a good selection since the getting off station is 2 Km from the hotel)

In the map below, Place A is Capital International Airport Terminal 3, C is Terminal 1 and 2, and B is Park Plaza Beijing Science Park. Coming by Airport Shuttle Route (Line 5, i.e., BCIA-Zhongguancun/中关村): Terminal 3 -> Terminal 2 -> Terminal 1 -> Xiaoying -> Asian Games Village (Anhui Bridge) -> Xueyuan Bridge (Get off at Xueyuan Bridge, and the North Gate of Beihang University is on the LEFT side of the road).



2. **From Beijing Railway Station to the Park Plaza Beijing Science Park Hotel**

   (1)Taking Taxi:

   It's about 17.6 km from Beijing Railway Station to Park Plaza Beijing Science Park.

   (2)Taking Subway:

   If you get off at Beijing Railway Station, please take Subway Line 2 from Subway Beijing Railway Station to Xizhimen Station, then transfer to Subway Line 13, if you want to get to Park Plaza Beijing Science Park, please get off at Zhichunlu Station and get out using Entrance F.

3. **From Beijing West Railway Station to the Park Plaza Beijing Science Park Hotel**

   (1)Taking Taxi:

   It's about 13.5 km from Beijing West Railway Station to Park Plaza Beijing Science Park.

   (2)Taking Subway:

   If you get off at Beijing West Railway Station, please take Subway Line 9 from Subway Beijing West Railway Station to National Library Station, then take Subway Line 4 from National Library Station to Haidianhuangzhuang Station, then transfer to Subway Line 10, if you want to get to Park Plaza Beijing Science Park, please get off at Zhichunlu Station and get out using Entrance F.

4. **From Beijing South Railway Station to the Park Plaza Beijing Science Park Hotel**

   (1)Taking Taxi:

   It's about 19.1 km from Beijing South Railway Station to Park Plaza Beijing Science Park.

   (2)Taking Subway:

   If you get off at Beijing South Railway Station, please take Subway Line 4 from Subway Beijing South Station to Xizhimen Station, then transfer to Subway Line 13, if you want to get to Park Plaza Beijing Science Park, please get off at Zhichunlu Station and get out using Entrance F.

5. **From Beijing North Railway Station to the Park Plaza Beijing Science Park Hotel**

   Taking Subway:

   If you get off at Beijing North Railway Station, please take Subway Line 13 from Xizhimen Station, if you want to get to Park Plaza Beijing Science Park, please get off at Zhichunlu Station and get out using Entrance F.

Brief Introduction for USTB and SCCE

The University of Science and Technology Beijing (USTB) was founded in 1952 following the amalgamation of the best departments in related fields of five eminent universities as a result of a nationwide reorganization of the higher education system.

Over half a century of remarkable growth,it has developed into one of the most influential key national universities sponsored by the Chinese Ministry of Education.USTB is renowned for its study of metallurgy and materials science.Its main focus is on engineering;At the same time,it maintains a balanced programme of science,management,humanities,economics and law.It was one of the first universities to be entitled to establish state-approved graduate schools and was chosen to be part of China's"211 Project",which is designed to develop a hundred first rate universities in the 21st century.In 2006 it was also selected as one of a select group of pilot universities for the "Platform for National Advanced Disciplines Innovation" program.

The university offers 44 undergraduate programs, 109 Master's programs and 48 doctoral programs. There are 12 national key disciplines in the fields of metallurgy, materials science and engineering, mechanical engineering and mining. Among its teaching staff of 1634, there are 402 professors, 550 associate professors.

In scientific research, USTB hosts two national key laboratories, two national engineering research centers, two national science and technology platform and 20 ministerial open laboratories and research centers. In the two phases of the"211 Project" already completed, USTB has won four First Prize awards in the National Prizes for Progress in Science and Technology, which ranks as a national record. Since 2004 USTB's research fund has been expanding at the pace of nearly 100 million RMB a year. A total of 17 science projects have won national prizes, which is also a national record. In 2007, USTB became the first and only university sponsored by the Chinese Ministry of Education to be responsible for the "National Major Science and Technology Infrastructure Project".

Moreover, the university has strengthened its co-operation with worldwide enterprises in research, academic and educational fields. USTB has so far entered into partnership with nearly 70 foreign universities and institutes from different countries and districts, and invited more than 500 world-renowned academics such as Professor Akihisa INOUE, President of Tohoku University, as its honorary professors.

The university also values its international connections, and has so far entered into partnership with more than 80 foreign universities and institutes from different countries and districts, such as Aachen Technical University, Oak Ridge National Laboratory and the University of Oxford. Since 2004, USTB has received more than 50 Teaching Achievement awards from the Ministry of Education or other Educational Institutes. Twenty-eight of its courses have been listed among National or Ministerial Excellent Courses. Four doctoral dissertations have been recognized as among the "National Top 100 Doctoral dissertations".







For more information, please access: http://en.ustb.edu.cn/.

School of Computer and Communication Engineering, University of Science and Technology Beijing (SCCE) is equipped with the five departments of Computer Science and Technology, Software Engineering, Communication Engineering, Internet of Things and Electronic Engineering, and Information Science, multiple research institutions of Computer and System Science, Knowledge Engineering, Advanced Network Technology and New Business, etc., and "Beijing municipal key laboratory of materials domain knowledge engineering", "Beijing municipal engineering research center of integrated network and ubiquitous business" and "Beijing municipal higher education experiment demonstration center". Besides, the college has a first-class faculty which is reasonably structured in knowledge and age, and is active in academic thought.

For more information, please access: http://scce.ustb.edu.cn/.