2016 International Conference on Computer, Information and Telecommunication Systems

July 6-8, 2016, Kunming, China

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CITS 2016 General Chairs' Message

Welcome to the 2016 International Conference on Computer, Information and Telecommunication Systems (CITS 2016). This year's conference marks the fifth CITS, which is being held on annual basis.

CITS 2016 offers a unique forum for researchers and practitioners from academia, industry, business, and government to share their expertise results and research findings in all areas of Computer, Information and Telecommunication Systems.

This year's conference includes an outstanding technical program, and four distinguished keynote speakers and two invited speakers. We have chosen the campus of the Yunnan Minzu University, Kunming, China as the site for our conference. The city of Kunming is famous in its great weather and historical significance. The site provides excellent meeting facilities and will be a comfortable setting for our conference.

The CITS 2016 technical program consists of several parallel tracks and will last for three days. Each track consists of several sessions of top quality papers. The topics covered in the program include, among others, wireless networks, wireless sensor networks, computer networks and telecommunications, admission control in networking, cyber security, information security, cell networks, 4G and 5G systems, parallel and distributed computing, databases and data mining, hardware/architecture/real-time systems, MIMO systems, modeling and simulation, performance evaluation, digital signal processing, image processing, pattern recognition, multimedia systems and video processing, character and pattern recognition, artificial intelligence, neural networks, fuzzy logic, genetic algorithms, learning automata, cloud computing, web systems, security and information assurance, cryptography, algorithms, biometrics, e-services and e-business, and collaborative learning systems, among others.

This year, we received a large number of quality papers. Only very high quality papers have been accepted. The acceptance ratio is 31.51%. This is indicative of the diligent work of the technical program committee chairs, technical program committee members and reviewers. The accepted papers come from all over the World with representation from academia, industry, business and government.

Many individuals have contributed to the success of this high calibre international conference. Our sincere appreciation goes to all authors including those whose papers were not included in the program. Many thanks are also due to our distinguished keynote speakers for their valuable contribution to the conference.

Many thanks to Vice General Chair, Prof Kuei-Fang (Leila) Hsiao, for her excellent work in various aspects. Special thanks are also due to the senior program chair, Prof. Petros Nicopolitidis, for his superior role in leading the technical program efforts.

Special thanks go to the publication chair, Prof Daniel Cascado Caballero, for his outstanding work and dedication. Thanks to our dedicated Webmaster Antonio Bueno. Special thanks go to the international publicity committee members for their excellent work.

We would like to also thank other members of the organizing committee, especially the local organizing committee under the leadership of Prof. Fan Jing for the good help.

Many thanks also go to the technical program committee members and reviewers for their timely work and efforts. Special thanks are due to the international steering committee of the CITS.

We would like to thank the IEEE Communication Society and SCS for their technical co-sponsorship of the conference.

We like to thank the leadership, faculty, staff and students of the Yunnan Minzu University for their help and support and for hosting the conference.

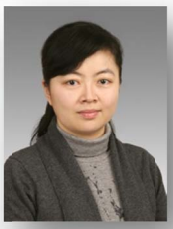
Finally, on behalf of the 2016 IEEE International Conference on Computer, Information and Telecommunication Systems (CITS 2016), and Society for Modeling and Simulation International (SCS), we invite all of you to join us in Kunming, Yunnan, China, at CITS 2016. Enjoy the program and your stay in the beautiful city of Kunming.

Prof. Mohammad S. Obaidat
General Chair, Fellow of IEEE, Fellow of SCS, Past President of the Society for Modeling & Simulation International (SCS)
Fordham University, USA.

Prof. Zan Li
Co-General Chair
Xidian University, Xi'an, China

Prof. Fei Gao
Co-General Chair
Yunnan Minzu Univ., China

Prof. M. S. Obaidat



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Program At a Glance

Wednesday, July 6		Thursday, July 7		Friday, July 8	
08:00 15:40	Registration	08:30 15:10	Registration	08:10 09:50	Registration
09:00 10:00	Opening Session	08:30 10:10	Computer Systems 1 Inf. Technology 1 Security Systems 1	08:10 09:50	Networking Systems 2 Telecomm. Systems 2
10:00 10:50	Keynote Speech 1				
10:50 11:05	Tea break	10:10 10:25	Tea break	09:50 10:05	Tea break
11:05 11:55	Keynote Speech 2	10:25 12:05	Computer Systems 2 Inf. Technology 2 Security Systems 2	10:05 11:45	Networking Systems 3 Telecomm. Systems 3
11:55 14:00	Lunch	12:05 13:30	Lunch	11:45 12:00	Closing Session
14:00 14:50	Keynote Speech 3	13:30 15:10	Computer Systems 3 Inf.Technology 3		
14:50 15:40	Keynote Speech 4	15:10 15:25	Tea break		
15:40 16:00	Tea break	15:25 17:05	Computer Systems 4 Networking Systems 1 Telecomm. Systems 1		
16:00 16:30	Invited talk 1	17:05 19:00	Tour		
16:30 17:00	Invited talk 2	19:00 20:50	Banquet		

Registration Desk will be open as per info below:

- July 6, 2016 from 08:00 to 15:40 in the Golden Hall, Yunnan Minzu University- Except during lunch time

- July 7, 2016 from 08:30 to 15:10 in the Maple Palace Hotel- Except during lunch time

- July 8, 2016 from 08:10 to 09:50 in the Maple Palace Hotel- Except during lunch time

Sessions of July 6 will be in The Golden Hall, Yunnan Minzu University, Yuehua Street, Wu Jiaying-Yuhua Area, Chenggong, District, Kunming, Yunnan, China

Sessions of July 7 and 8 will be in The Maple Palace (FengYeWangFu) Hotel, gate number 4 of Yunnan Minzu University, Yuehua Street, Wu Jiaying-Yuhua Area, Chenggong, District, Kunming, Yunnan, China

Banquette will be in Chennong Ecological Park, Jingming North Road, Chenggong, District, Kunming, Yunnan, China

Schedule

Wednesday, July 6

08:00 – 15:40

Registration

09:00 – 09:40

Opening Session

9:40 - 10:00

Group Photo

10:00 – 10:50

Keynote Speech 1

A Big Data-as-a-Service Framework for Cyber-Physical-Social Systems
Session Chair: Prof. Mohammad S. Obaidat (Fordham University, USA)

Distinguished Keynote Speaker: Prof. Laurence T. Yang
Department of Computer Science of St. Francis Xavier University, Canada

The booming growth and rapid development in embedded systems, wireless communications, sensing techniques and emerging support for cloud computing and social networks have enabled researchers and practitioners to create a wide variety of Cyber-Physical-Social (CPS) Systems that reason intelligently, act autonomously, and respond to the users' needs in a context and situation-aware manner. The CPS systems are the integration of computation, communication and control with the physical world, human knowledge and sociocultural elements. It is a novel emerging computing paradigm and has attracted wide concerns from both industry and academia in recent years.

Generally, CPS systems collect massive data (Volume) from the physical world by various physical perception devices (Variety) in structured/semistructured/unstructured format and respond the users' requirements immediately (Velocity) and provide the proactive services (Veracity) for them in physical space or social space. These collected big data are normally high dimensional, redundant and noisy, and beyond the processing capacity of the computer systems.

This talk will present our latest research about a Big Data-as-a-Service framework which includes data representation, dimensionality reduction, processing (securely) and proactive service layers (including deep computation) aiming at representing and processing the big data generated from CPS systems and providing more valued smart services. Corresponding case studies in some applications such as smart home, campus and traffics will be shown to demonstrate the feasibility and flexibility of the proposed framework.

Short Bio
Laurence T. Yang got his BE in Computer Science and Engineering from Tsinghua University, China and Ph.D in Computer Science from University of Victoria, Canada. He is a professor at School of Computer Science and Technology, Huazhong University of Science and Technology, China, as well as with Department of Computer Science of St. Francis Xavier University, Canada. His research includes parallel and distributed computing, embedded and ubiquitous/pervasive computing, and big data.

He has published around 300 international journal papers in the above areas, of which half on IEEE/ACM Transactions and Journals, others mainly on Elsevier, Springer and Wiley Journals. He has been involved actively in conferences and workshops as a program/general/steering conference chair and numerous conference and workshops as a program committee member. He served as the vice-chair of IEEE CS Technical Committee of Supercomputing Applications (2001-2004), the chair of IEEE CS Technical Committee of Scalable Computing (2008-2011), and the chair of IEEE CIS Task force on Ubiquitous Computing and Intelligence (2009-2013). He was in the steering committee of IEEE/ACM Supercomputing conference series (2008-2011), and was in the National Resource Allocation Committee (NRAC) of Compute Canada (2009-2013), as well as the scientific committee chair (2012-2013) for Engineering, Mathematics and Computing Science of Compute Canada. He was the vice-chair (2014) and the chair (2015) of IEEE Canada Atlantic Section. Now he is the chair of IEEE SMC Technical Committee on Cybermatics (2016-) and vice-chair of IEEE CIS Task Force on Smart World (2016-).

In addition, he is the editors-in-chief of several international journals. He is serving as an editor for many international journals (such as IEEE Systems Journal, IEEE Access, Future Generation of Computer Systems (Elsevier), Information Sciences (Elsevier), Information Fusion (Elsevier), Big Data Research (Elsevier), etc). He has been acting as an author/co-author or an editor/co-editor of more than 25 books from well-known publishers. The book “Mobile Intelligence” from Wiley 2010 received an Honorable Mention by the American Publishers Awards for Professional and Scholarly Excellence (The PROSE Awards). He has been invited to give around 32 keynote talks at various international conferences and symposia.

10:50 – 11:05

Tea Break

11:05 – 11:55

Keynote Speech 2

Internet of Things: Wireless Sensor Networking, Sensorless Sensing, and Battery-less Networking

Session Chair: Prof. Fei Gao (Yunnan Minzu University, China)

Distinguished Keynote Speaker: Prof. Xiang-Yang Li
School of Computer Science and Technology,
University of Science and Technology of China, China

Internet of Things was proposed about a decade ago, and since then has attracted many research interests in both academia and industry. In the last few years, the industry has picked up the steam and developed a number of real-world applications with specialized hardware and system development.

In this talk, I will give a brief overview on our effort in designing some basic theory related Internet of Things (or wireless networking and mobile computing in general), developing related prototype systems for verifying the theoretical results, and visioning future research directions in this area. I will use sensing and localization as running examples to illustrate our effort and endeavors in this fast-growing area.

In this talk, I will first give a quick review of our collaborated projects on large scale wireless sensor networking systems. I will then present our object localization and tracking using COTS RFID tags and readers. Tracking mobile RFID tags in real time has been a daunting task, especially challenging for achieving millimeter-level accuracy. I present several RFID-based systems for locating objects. One category is device-based where RFID tag is attached to the object-to-be-localized, and the other category is device-free method where no RFID tag is attached the object at all. For lab environment, we can track the mobile tags in real time with accuracy to a median of 5mm along the moving direction. In our year-long large-scale trial

studies in real luggage sortation systems of two airports, our results show that Tagoram can achieve accuracy to a median of 63.5mm in these real deployments. The results are collaborated with research groups at Tsinghua University.

Short Bio
Dr. Xiang-Yang Li is a professor and Dean at School of Computer Science and Technology, USTC. He is an IEEE fellow (2015), an ACM Distinguished Scientist (2014). He was a full professor at Computer Science Department of IIT, and an EMC Visiting Chair Professor at Tsinghua University (2013-2016). He is a recipient of China NSF Outstanding Overseas Young Researcher (B). Dr. Li received MS (2000) and PhD (2001) degree at Department of Computer Science from University of Illinois at Urbana-Champaign. He received a Bachelor degree at Department of Computer Science from Tsinghua University, P.R. China, in 1995. He published a monograph "Wireless Ad Hoc and Sensor Networks: Theory and Applications". He also co-edited the book "Encyclopedia of Algorithms".

His research interests include wireless networks, mobile computing, privacy and security, cyber physical systems, social networking, and algorithms. He has published more than 120 papers in top-tier journals, and 200 papers in well-known international conferences. His Google-scholar citation is more than 12,000, and H-index is 57. Dr. Li and his students won five best paper awards (IEEE GlobeCom 2016, IEEE IPCCC 2014, ACM MobiCom 2014, COCOON 2001, IEEE HICSS 2001), one best demo award (ACM MobiCom 2012) and was selected as best paper candidates three times (BigCom 2015, ACM MobiCom 2008, ACM MobiCom 2005).

Dr. Li has served or is serving as an editor of several journals, including IEEE/ACM Transaction on Networking, IEEE Transaction on Parallel and Distributed Systems, and IEEE Transaction on Mobile Computing. He served at various capacities (conference chair, TPC chair, or local arrangement chair) in a number of conferences, including TPC chair of ACM MobiHoc 2014. His research has been supported by NSF, NSFC, and RGC HongKong. He has graduated eleven PhD students since 2004. For more information about Prof. XiangYang Li, please check his webpage http://staff.ustc.edu.cn/~xiangyangli/

11:55 – 14:00

Lunch

14:00 – 14:50

Keynote Speech 3

Toward Efficient Radio Spectrum Utilization: User Cooperation in Cognitive Radio Networking
Session Chair: Prof. Zan Li (Xidian University, China)

Distinguished Keynote Speaker: Prof. Qinyu Zhang
School of Electronic & Information Engineering
Harbin Institute of Technology, Shenzhen, China

In a cooperative cognitive radio network, secondary users are able to negotiate with primary users for dedicated transmission opportunities through providing tangible service. Two novel and simple user cooperation frameworks are introduced to improve the spectral efficiency and utilization. To this end, an orthogonal signaling-based cooperation technology for leveraging the degrees of freedom in two-dimensional modulation is discussed. In the proposed framework, an SU is enabled to simultaneously transmit its own data and relay another user's packets in two orthogonal channels. Specifically, in the framework of user cooperation between PUs and SUs, a cross-layer design for cooperative communications between an active PU and an SU is first investigated. In the framework of cooperative spectrum leasing by a group of SUs, a cross-layer design for cooperation among SUs is then presented.

Short Bio

Dr. Qinyu Zhang received the bachelor degree in Communication Engineering from Harbin Institute of Technology (HIT) in 1994, and PhD degree in Biomedical & Electrical Engineering from the University of Tokushima, Japan, in 2003. From 1999 to 2003, he was an assistant professor at the University of Tokushima. From 2003 to 2005, he was an associated professor at HIT Shenzhen Graduate School, and was the founding director of Communication Engineering Research Center in the School of Electronic & Information Engineering (EIE). Since 2005, he has been a full professor, and serves as the Dean of EIE School.

He is an IEEE Senior Member and on the editorial-board of some academic journals, such as Journal on Communications, KSII Transactions on Internet and Information Systems, Science China: Information Sciences, etc. He was the TPC Co-chair of IEEE/CIC ICCC'15, Symposium Co-chair of IEEE VTC'16 Spring, Associate Chair for Finance of ICMMT'12, Symposium Co-chair of CHINACOM'11, etc. He has been a TPC member for INFOCOM, ICC, GLOBECOM, WCNC and other flagship conferences in communications. He was the Founding Chair of the IEEE Communications Society Shenzhen Chapter.

He has been awarded the National Science Fund for Distinguished Young Scholars, Young and Middle-aged Leading Scientist of China, the Chinese New Century Excellent Talents in University, etc., and obtained three scientific and technological awards from governments.

His research interests include aerospace communications and networks, wireless communications and networks, cognitive radios, signal processing and biomedical engineering.

14:50 – 15:40

Keynote Speech 4

Internet of Things: From Hype to Reality

Session Chair: Prof. Kuei-Fang (Leila) Hsiao (Ming-Chuan University, Taiwan)

Distinguished Keynote Speaker: Prof. Sudip Misra
Department of Computer Science and Engineering
Indian Institute of Technology Kharagpur, India

The advent of IoT, a few years back, opened up new avenues for smart-technology deployment which posed newer research challenges, having wide ramifications, affecting application and deployment scenarios in transportation, logistics, energy, health, cities and even, homes. Initially, these domains seemed too futuristic and unrealizable. They seemed too good to be true, with most of them being signed off as hype. However, with rapid advances in technology, as well as exposure of the populace to these technologies, has enabled the realization of these myths into actual technologies. These technologies are rapidly challenging the traditional approaches of transportation, logistics, healthcare, living and business. The rise in popularity, advancements and rapid commercialization of technologies such as smartphones, wearables, 3D printing, drones, cyber-physical systems, connected and autonomous vehicles, among many others, have caused the rise in popularity of IoT and has made it an essential technology for functioning of these previously mentioned technologies. The world is on the brink of an explosion of fully connected, autonomous and intelligent devices, with the capability of sensing its surroundings, making decisions and acting upon the decisions made and communication using the Internet as its backbone. These devices not only need minimal human supervision but, they may do away with the human supervision completely, in the near future. This trend is clearly visible with the rapid indulgence of technology powerhouses such as Google, Microsoft, Baidu and others into the domain of IoT, cloud and autonomous devices. The hypes of the past are rapidly converging into reality, with the use of IoT as the main driving force.

Short Bio

Dr. Sudip Misra is an Associate Professor in the Department of Computer Science and Engineering at the Indian Institute of Technology Kharagpur. Prior to this he was associated with Cornell University (USA), Yale University (USA), Nortel Networks (Canada) and the Government of Ontario (Canada). He received his Ph.D. degree in Computer Science from Carleton University, in Ottawa, Canada, and the masters and bachelor's degrees, respectively, from the University of New Brunswick, Fredericton, Canada, and the Indian Institute of Technology, Kharagpur, India. Dr. Misra has several years of experience working in the academia, government, and the private sectors in research, teaching, consulting, project management, software design and product engineering roles.

His current research interests include mobile ad hoc and sensor networks, internet of things (IoT), computer networks, and learning systems. Dr. Misra is the author of over 260 scholarly research papers, of which over 150 of them are in distinguished journals. He has won nine research paper awards in different international conferences. He was awarded the 3rd Prize in the Samsung Innovation Award (2014) at IIT Kharagpur, and also the IEEE ComSoc Asia Pacific Outstanding Young Researcher Award at IEEE GLOBECOM 2012, Anaheim, California, USA. He was also the recipient of several academic awards and fellowships such as the Young Scientist Award (National Academy of Sciences, India), Young Systems Scientist Award (Systems Society of India), Young Engineers Award (Institution of Engineers, India), (Canadian) Governor General's Academic Gold Medal at Carleton University, the University Outstanding Graduate Student Award in the Doctoral level at Carleton University and the National Academy of Sciences, India – Swarna Jayanti Puraskar (Golden Jubilee Award). He was also awarded the Canadian Government's prestigious NSERC Post Doctoral Fellowship and the Humboldt Research Fellowship in Germany.

Dr. Misra is the Editor-in-Chief of the International Journal of Communication Networks and Distributed Systems (IJCNDS), Inderscience, U.K.. He has also served (is serving) as the Associate Editor of the IEEE Transactions on Mobile Computing, Telecommunication Systems Journal (Springer), Security and Communication Networks Journal (Wiley), International Journal of Communication Systems (Wiley), and the EURASIP Journal of Wireless Communications and Networking. He is also an Editor/Editorial Board Member/Editorial Review Board Member of the IET Communications Journal, IET Wireless Sensor Systems, and Computers and Electrical Engineering Journal (Elsevier).

Dr. Misra has published 10 books in the areas of opportunistic networks, wireless ad hoc networks, wireless sensor networks, wireless mesh networks, communication networks and distributed systems, network reliability and fault tolerance, and information and coding theory, published by reputed publishers such as Springer, Cambridge University Press, Wiley, and World Scientific.

He was invited to chair several international conference/workshop programs and sessions. He served in the program committees of several international conferences. Dr. Misra was also invited to deliver keynote/invited lectures in over 30 international conferences in USA, Canada, Europe, Asia and Africa.

15:40 – 15:55

Tea Break

16:00 – 16:30

Invited talk 1

Low-Cost Massive MIMO：From Theory to Practice

Session Chair: Prof. Jing Fan (Yunnan Minzu University, China)

Distinguished Invited Speaker: Prof. Shi Jin
National Mobile Communications Research Laboratory
Southeast University, China

5G mobile communication puts forward higher request to the wireless transmission rate, spectrum efficiency and power efficiency. Massive MIMO wireless communication in cellular networks can deeply exploit the spatial dimension wireless resources and thereby significantly improve frequency efficiency and power efficiency of wireless communications. In recent years, there has been substantial theoretical progress. However there exist challenging problems in both fundamental theory and key technique to be investigated. In this talk, we systematically investigate low-cost massive MIMO wireless communication in cellular networks by considering many important aspects which include hardware cost, power consumption, and computational complexity. We will firstly review the basic massive MIMO characteristics and clarify some fundamental limits that prevent the realization of this technology in practice. Then the framework of low-cost massive MIMO will be described based on our recent research findings. This talk will also introduce key components of low-cost massive MIMO which include hybrid precoding schemes, quantized OFDM, and low resolution receiver. We aim to make clear the new features of low-cost massive MIMO channels, and overcome the bottleneck problem for channel information acquisition, complexity problem for system implementation. In addition, we will also consider some key problems in low-cost massive MIMO systems with hardware imperfections. Performance limits and optimization will be investigated for this system in this talk.

Short Bio

Shi Jin received the Ph.D. degree in communications and information systems from the Southeast University, Nanjing, in 2007. From June 2007 to October 2009, he was a Research Fellow with the Adastral Park Research Campus, University College London, London, U.K. He is currently with the faculty of the National Mobile Communications Research Laboratory, Southeast University. His research interests include space time wireless communications, random matrix theory, and information theory. He serves as an Associate Editor for the IEEE Transactions on Wireless Communications, and IEEE Communications Letters, IET Communications, and a member in SPCOM-TC. Dr. Jin and his co-authors have been awarded the 2011 IEEE Communications Society Stephen O. Rice Prize Paper Award in the field of communication theory and a 2010 Young Author Best Paper Award by the IEEE Signal Processing Society.

16:30 – 17:00

Invited talk 2

Fog Computing Based Radio Access Networks for 5G

Session Chair: Prof. Zan Li (Xidian University, China)

Distinguished Invited Speaker: Prof.Mugen Peng
Beijing University of Posts and Telecommunications, Beijing, China

Compared with the fourth generation cellular systems, the fifth generation (5G) wireless communication systems are anticipated to provide spectral and energy efficiency growth by a factor of at least 10, and the area throughput growth by a factor of at least 25. To achieve these goals, a fog computing based radio access network (F-RAN) is presented recently as the advanced wireless access network paradigm, where edge cloud computing is used to fulfill the distributed cooperative processing and delivering the local content for decreasing the latency and burdens on the fronthaul/backhaul. The state-of-the-art research achievements in aspects of system architecture and key technologies for F-RANs are briefly introduced in this talk. In particular, the system architecture evolution from C-RANs and H-CRANs to F-RANs will be discussed, and the key technologies including the edge cache driven performance analysis and cooperative radio resource allocation will be presented. Some challenges and open issues will be discussed.

Short Bio

Mugen Peng received the B.E. degree in electronics engineering from the Nanjing University of Posts and Telecommunications, Nanjing, China, in 2000, and the Ph.D. degree in communication and information systems from the Beijing University of Posts and Telecommunications (BUPT), Beijing, China, in 2005. Afterward, he joined BUPT, where he has been a Full Professor with the School of Information and Communication Engineering since 2012. In 2014, he was an Academic Visiting Fellow with Princeton University, Princeton, NJ, USA. He leads a Research Group focusing on wireless transmission and networking technologies with the Key Laboratory of Universal Wireless Communications (Ministry of Education), BUPT. His main research areas include wireless communication theory, radio signal processing, and convex optimizations, with a particular interest in cooperative communication, self-organization networking, heterogeneous networking, cloud communication, and internet of things. He has authored/coauthored over 60 refereed IEEE journal papers and over 200 conference proceeding papers.

Dr. Peng was a recipient of the 2014 IEEE ComSoc AP Outstanding Young Researcher Award, and the best paper award in IEEE WCNC 2015, WASA 2015, GameNets 2014, IEEE CIT 2014, ICCTA 2011, IC-BNMT 2010, and IET CCWMC 2009. He received the First Grade Award of the Technological Invention Award in the Ministry of Education of China for the hierarchical cooperative communication theory and technologies, and the First Grade Award of Technological Invention Award from the China Institute of Communications for the contributions to the self-organizing networking technology in heterogeneous networks. He is on the Editorial/Associate Editorial Board of the IEEE Communications Magazine, IEEE ACCESS, IET Communications, International Journal of Antennas and Propagation (IJAP), and China Communications. He has been the guest leading editor for special issues in IEEE Wireless Communications, IEEE Access, and IET Communications.

THURSDAY, JULY 7

08:30 - 10:10

Computer Systems I

Session Chairs: Dr. Dunling Li (BTS Software Solutions, USA), Mr. Yu Guo (University of Science and Technology Beijing, China)

A Dynamic Approach for Industrial Alarm Systems
Marcio Silva, Carlos E Pereira and Marcelo Götz (Federal University of Rio Grande do Sul, Brazil)

Missile Weapon System-of-systems Optimization Method Based on Information Entropy
Xiaochuan Guo (High-tech Institute, China); Xingchang Liu and Guiming Chen (High-tech Institute of Xi'an, China); Leilei Chang (National University of Defense Technology, China); Xiang Li (Equipment Academy of PLA, China)

Air Pollution Source Estimation Profiling via Mobile Sensor Networks
Xue Yang, Junzhao Du, Sicong Liu, Rui Li and Hui Liu (Xidian University, China)

Specific Hardware Implementation for Cofactorization in GNFS
Haibo Yu (Tsinghua University); Guoqiang Bai (The Institute of Microelectronics, Tsinghua University)

On the Improved Implementations and Performance Evaluation of Digit-by-Digit Integer Restoring and Non-Restoring Cube Root Algorithms
Yamin Li (Hosei University, Japan); Wanming Chu (University of Aizu, Japan)

08:30 – 10:10

Information Technology I

Session Chairs: Dr. Liwei Ren (Trend Micro, USA), Dr. Zhuang Jiayu (Agricultural Information Institute, Chinese Academy of Agricultural Sciences, China)

Mining Co-location Patterns with Spatial Distribution Characteristics
Jiasong Zhao, Lizhen Wang and Xuguang Bao (Yunnan University, China); Yaqing Tan (Yunnan Agricultural University, China)

Spatial Co-location Pattern Ordering
Gongsheng Yuan, Lizhen Wang, Peizhong Yang and Lan Chen (Yunnan University, China)

Mining Top-k-size Maximal Co-location Patterns
Xuguang Bao, Lizhen Wang and Jiasong Zhao (Yunnan University, China)

On the Performance of LT Codes over BIAWGN Channel
Amrit Kharel and Lei Cao (The University of Mississippi, USA)

Improved Decoding for Raptor Codes with Short Block-lengths over BIAWGN Channel
Amrit Kharel and Lei Cao (The University of Mississippi, USA)

08:30 – 10:10

Security Systems I

Session Chairs: Prof. Xueqin Jiang (Donghua University, China), Dr. Feifei Gao (Tsinghua University, China)

Secure Message Communication Among Vehicles Using Elliptic Curve Cryptography in Smart Cities

Amit Dua (Thapar University & Thapar University, India); Neeraj Kumar (Thapar University Patiala, India); Mukesh Singh (Thapar University Patiala (Punjab), India); Mohammad S. Obaidat (Fordham University, USA); Kuei-Fang Hsiao (Ming Chuan University, Taiwan)

Differential Distribution Properties of the SIMON Block Cipher Family

Xiang-zhong Dong and Jie Guan (Information Science and Technology Institute, China)

The Impact of Relative Distance on Artificial-Noise-Aided Secure Transmission

Hao Deng and Hui-Ming Wang (Xi'an Jiaotong University, China); Yi Zhang (Xi'an Jiaotong University); Qian Yang (Xi'an Jiaotong University, China); Xueqin Jiang (Donghua University, China); Wenjie Wang (Xi'an Jiaotong University, China)

STRESS: an IPv6 to IPv4 Converter for Sniffing Software

Haolin Jin (Fudan University, China); Chengrong Wu (Teacher, China); Shiyong Zhang (Fudan University, China)

Behavior Analysis of Self-Evolving Botnets

Takanori Kudo (Setsunan University, Japan); Tomotaka Kimura (Tokyo University of Science, Japan); Yoshiaki Inoue (Osaka University, Japan); Hirohisa Aman (Ehime University, Japan); Kouji Hirata (Kansai University, Japan)

10:10 – 10:25

Tea Break

10:25 – 12:05

Computer Systems 2

Session Chairs: Dr. Sudip Misra (Indian Institute of Technology Kharagpur, India), Mr. Leilei Chang (National University of Defense Technology, China)

An Improved Root-MUSIC Algorithm and MSE Analysis

Dijie Wang (ChongQing University of Posts and Telecommunications, China); Rong Chai (Chongqing University of Posts and Telecommunications, China); Feifei Gao (Tsinghua University, China)

A Flight Path Planning Method Based On Improved Artificial Potential Field

Fanrong Sun and Songchen Han (Nanjing University of Aeronautics and Astronautics, China)

Near-Threshold SRAM Design with Dynamic Write-Assist Circuitry

Chengzhi Jiang and Dayu Zhang (China Academy of Space Technology, China); Song Zhang (China Academy of SPACE technology(CAST), China); He Wang (China Academy of Space Technology, China)

A Study on Transient Electromagnetic Signal Acquisition and Processing for Exploring Hidden Disaster-causing Factors in Coalmine
Bin Sun (SDIC Qujing Coal Development Co., Ltd, China); Haiying Li (Yunnan Minzu University, China)

A design method for an improved soft core of ARMv4 instruction set based on FPGA
Qing-ming Yi, Min Shi and Ming-min Chen (Jinan University, China); Song Li (DongGuan Techtotop Microelectronics Co., Ltd, China)

10:25 – 12:05

Information Technology 2

Session Chairs: Dr. Dunling Li (BTS Software Solutions, USA), Mr. Guangyong Yang (Yunnan Minzu University, China)

Mining Causal Rules Hidden in Spatial Co-locations based on Dynamic Spatial Databases
Junli Lu (Yunnan Minzu University, China); Lizhen Wang and Yuan Fang (Yunnan University, China)

Chunk-Wise Face Model Based Gaze Correction in Conversational Videos with Single Camera
Jichuan Lu, Xiaoming Tao, Linhao Dong and Ning Ge (Tsinghua University, China)

Improving The ScSPM Model with Log-Euclidean Covariance Matrix for Scene Classification
JiangFeng Yang and Chuanxi Xing (Yunnan Minzu University, China); Yuebin Chen (Yunnan Minzu University, Taiwan)

Detecting First-Order Leakages Against The Tower Field Masking Scheme
Miao Yuan and Guoqiang Bai (Tsinghua University, China)

Deep Semantic Understanding of High Resolution Remote Sensing Image
Bo Qu (Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences, University of the Chinese Academy of Sciences, China); Xuelong Li (Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences, China); Dacheng Tao (University of Technology, Sydney, Australia); Xiaoqiang Lu (Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences)

10:25 – 12:05

Security Systems 2

Session Chairs: Prof. Xueqin Jiang (Donghua University, China), Dr. Liwei Ren (Trend Micro)

Improving Physical Layer Security in Underlay D2D Communication via Stackelberg Game Based Power Control
Wanbing He, Wei Zhang and Wei Bai (Institute of Communications Engineering, PLA UST, China); Yueming Cai (Institute of Communications Engineering, PLAUST, China); Xinrong Guan (Institute of Communications Engineering, China); Junyue Qu (College of Communications Engineering, China)

Improved Soft Fusion-Based Cooperative Spectrum Sensing Defense Against SSDF Attacks
Ting Peng (Yunnan Minzu University, China); Yuebin Chen (Yunnan Minzu University, Taiwan)

A Generic Attack against White Box Implementation of Block Ciphers
Yin Jia, Tingting Lin and Xuejia Lai (Shanghai Jiao Tong University, China)

Design and Implementation of a New Web Anti-attack Method Based on URL Randomization
Wei Liu (Fudan University, China); Chengrong Wu (Teacher, China); Haolin Jin and Shiyong Zhang (Fudan University, China)

A Residual Error Analysis based Secure CS Approach for Malicious Node Attack
Yangqin Cao and Jun Yan (Nanjing University of Posts and Telecommunications, China); Wei-Ping Zhu (Concordia University, Canada)

12:05 – 13:30

Lunch

13:30 – 15:10

Computer Systems 3

Session Chairs: Prof. Laurence T. Yang (St. Francis Xavier University, Canada), Dr. Feifei Gao (Tsinghua University, China)

Robust Object Tracking Via Diverse Templates
Siyuan Wu (Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences & University of the Chinese Academy of Sciences, China); Xuelong Li (Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences, China); Xiaoqiang Lu (Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences)

Deep Object Tracking with Multi-modal Data
Xuezhi Zhang (Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences & University of the Chinese Academy of Sciences, China); Yuan Yuan and Xiaoqiang Lu (Chinese Academy of Sciences, China)

The design of an intelligent food consumption data collection and analysis system
Zhuang Jiayu, Zhang Yongen, Li Zhemin and Chen Wei (Agricultural Information Institute, Chinese Academy of Agricultural Sciences, China); Liu Jiajia (Agricultural Information Institute of Chinese Academy of Agricultural Sciences, China); Zhang Heng (Institute of Software, Chinese Academy of Sciences, China)

A Temporal Self-Organizing Neural Network for Adaptive Sub-sequence Clustering and Case Studies
Dong Wang, Yanfang Long, Zhu Xiao and Zhiyang Xiang (Hunan University, China); Wenjie Chen (Central South University of Forestry and Technology, China)

Credit scoring using incremental learning algorithm for SVDD
Yongquan Cai and Yuchen Jiang (Beijing University of Technology, China)

13:30 – 15:10

Inf. Technology 3

Session Chairs: Dr. Dunling Li (BTS Software Solutions), Mr. Yu Guo (University of Science and Technology Beijing, China)

GBAS Heavy-tail Error Overbounding with GARCH Model
Kun Fang and Rui Xue (Beihang University, China); Yanbo Zhu (Aviation Data Communication Cooperation, China)

The recognition of Laos organization name based on a cascaded conditional random fields
Shaopeng Duan (Kunming University of Science and Technology & Kunming University of Science and Technology, China); Lanjiang Zhou and Feng Zhou (Kunming University of Science and Technology, China)

A Novel Descriptor Optimization Method for Multispectral Images
Zhitao Fu (Wuhan University, China)

Design and Realization of IMA/DIMA System Management Based on Avionics Switched Network

Yukai Hao, Xiaohong Zhang, Xining Cui and Baolei Huang (Aeronautics Computing Technique Research Institute, China)

Image De-fencing with Hyperspectral Camera

Qi Zhang (Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences & University of the Chinese Academy of Sciences, China); Yuan Yuan and Xiaoqiang Lu (Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences)

15:10 – 15:25

Tea Break

15:25 – 17:05

Computer Systems 4

Session Chairs: Prof. Yamin Li (Hosei University, Japan), Mr. Zhitao Fu (Wuhan University, China)

Trust-based Collaborative Filtering Algorithm in Social Network

Xinxin Chen and Yu Guo (University of Science and Technology Beijing, China); Yang Yang (University of Science and Technology, China); Zhenqiang Mi (University of Science and Technology Beijing, China)

Optimal Backup Strategy in Cloud Disaster Tolerance

Xu Liu and Xiaoqiang Di (Changchun University of Science and Technology, China); Jinqing Li (Changchun University Science and Technology, China); Hui Qi, Huamin Yang and Ligang Cong (Changchun University of Science and Technology, China)

Economy-Efficient Resource Allocation in Cloud Radio Access Networks with Fronthaul Capacity Constraints

Yayun Wang (Beijing University of posts & Telecommunications); Mugen Peng (Beijing University of posts & Telecommunications, China); Kecheng Zhang (Beijing University of Posts and Telecommunication, China)

A Smart Home Control System Based on Indoor Location and Attitude Estimation

Mingliang Xiong, Yiming Wu, Yipeng Ding, Xueyu Mao, Zhengyi Fang and Hai ping Huang (Nanjing University of Posts and Telecommunications, China)

Computational Efficient Variational Bayesian Gaussian Mixture Models via Coreset

Min Zhang (Mayo Clinic, USA); Yinlin Fu (Arizona State University, USA); Kevin Bennett (University of Hawaii at Manoa, USA); Teresa Wu (Arizona State University, USA)

15:25 – 17:05

Networking Systems 1

Session Chairs: Prof. LiZhen Wang (Yunnan University, China), Dr. Zhen Liu (Guangdong Pharmaceutical University, China),

Learning Automata based Decision Making Algorithm for Task Offloading in Mobile Cloud Computing

P. Venkata Krishna (Sri Padmavati Mahila University, India); Sudip Misra (Indian Institute of Technology-Kharagpur, India); Nagaraju Dasari and V Saritha (VIT University, India); Mohammad S. Obaidat (Fordham University, USA)

A Priority Based Message Forwarding Scheme for Opportunistic Networks
Deepak Sharma and Sanjay Dhurandher (NSIT, University of Delhi, India); Mohammad S. Obaidat (Fordham University, USA); Sahil Pruthi (NSIT, University of Delhi, India); Balqies Sadoun (Al-Balqa' Applied University, Jordan)

A Distributed Coverage Optimization and Connectivity Maintenance Strategy based on Unknown Sensors in WSAN
Yu Guo, Yun Zhang and Zhenqiang Mi (University of Science and Technology Beijing, China); Yang Yang (University of Science and Technology, China); Mohammad S. Obaidat (Fordham University, USA)

A Min-Actor Algorithm for Connected Dominating Set Formation in WSAN
Yun Zhang, Yu Guo and Zhenqiang Mi (University of Science and Technology Beijing, China); Yang Yang (University of Science and Technology, China); Mohammad S. Obaidat (Fordham University, USA)

Transmission Sequence Reconstruction and Allocation for VANET
Lingling Cai and Zhexin Xu (Fujian Normal University, China); Yi Wu (Fujian normal university, China); Xiao Lin (Fujian Normal University, China)

15:25 – 17:05

Telecommunication Systems 1

Session Chairs: Prof. Haifeng Wu (Yunnan Minzu University, China), Ms. Yu Zeng (Yunnan Minzu University, China)

Robust Power Control for Cognitive Radio Networks under Spectrum Sensing Errors
Ling Zhu, Xiaohui Zhao and Yongjun Xu (Jilin University & College of Communication Engineering)

The Impact of Device-to-Device Communication on the Capacity of Cellular Systems
Min Wang (University of Science & Technology Beijing(USTB) & Beijing Engineering and Technology Center for Convergence Networks and Ubiquitous Services, China); Xianxian Wang and Xiaomeng Chai (University of Science and Technology Beijing (USTB), China); Wei Huangfu

A Visible Light Communication Indoor localization Algorithm in Rotated Environments
Jun Yan and Bingcheng Zhu (Nanjing University of Posts and Telecommunications, China)

A Relay Node Placement for Free Space Optical Communication System Under Multi-user Environments
Genfa Zhang, Jun Yan and Bingcheng Zhu (Nanjing University of Posts and Telecommunications, China); Wei-Ping Zhu (Concordia University, Canada)

Multilayer Perceptron for Modulation Recognition Cognitive Radio System
Minglong Xue, Haifeng Wu and Yu Zeng (Yunnan Minzu University, China)

17:05 – 19:00

Short Tour

19:00 – 20:50

Awarding Ceremony and Banquette

FRIDAY, JULY 8

8:10 - 9:50

Networking Systems 2

Session Chairs: Prof. Balqies Sadoun (Al-Balqa' Applied Univ., Jordan), Dr. Jiangfeng Yang (Yunnan Minzu University, China)

Improved Distributed Compressed Sensing for Smooth Signals in Wireless Sensor Networks
Boyu Li, Fei Gao, Xiaoyu Liu and Xia Wang (Yunnan Minzu University, China)

Joint Link State and Forwarding Quality: A Novel Geographic Opportunistic Routing in VANETs
Weiwei Dong, Changle Li and Zhifang Miao (Xidian University, China)

Feedback Method for Estimation and Compensation of Carrier Frequency Offset in LTE Uplink
Saadullah Kalwar (Mehran University of Engineering & Technology, Jamshoro Pakistan, Pakistan); Fahim Umrani (Mehran University of Engineering and Technology, Pakistan); Maurizio Magarini (Politecnico di Milano, Italy)

Study of Cooperative Diversity Scheme Based on Visible Light Communication in VANETs
Zongmin Cui, Peng Yue and Yao Ji (Xidian University, China)

Optimization of small cell deployment in heterogeneous wireless networks
Wenjie Chen (Central South University of Forestry and Technology, China); Huashan Li, Zhongfeng Li, Zhu Xiao and Dong Wang (Hunan University, China)

8:10 - 9:50

Telecomm. Systems 2

Session Chairs: Mr. Saadullah Kalwar (Mehran University of Engineering & Technology, Jamshoro Pakistan), Ms. Cui-Qin Dai (Chongqing University of Posts and Telecommunications, China)

Joint Hierarchical Modulation and Network Coding for Asymmetric Data Transmission in Wireless Cooperative Communication
Cui-Qin Dai, Nan-Nan Huang and Hai-Xia Ran (Chongqing University of Posts and Telecommunications, China)

Research on the methods of multipath separation for shallow water wideband signal based on Warping transformation
Chuanxi Xing (Yunnan Minzu University, China); Guofang Dong (Shool of Physics and Electronic Engineering, Yunnan Nationalities University, China); Lingling Kong (Yunnan Minzu University, China); Tianyu Gao (Harbin Institute of Technology, China)

Comparison results of Stochastic Resonance effects realized by coherent and non-coherent receiver
Linlin Liang, Zan Li, Danyang Wang and Wenchao Zhai (Xidian University, China); Nina Zhang (Shaanxi Municipal People's Armed Police Force, China)

Time Delay Estimation of Co-Frequency Signals in TDOA Localization Based on WSN
Pengwu Wan, Zan Li and Benjian Hao (Xidian University, China)

An Improved Indoor Localization Based on RSSI and Feedback Correction of Anchor Node for WSN
Xiaochao Dang, Yili Hei and Zhanjun Hao (Northwest Normal University, China)Mr. Saadullah Kalwar (Mehran University of Engineering & Technology, Jamshoro Pakistan), Ms. Cui-Qin Dai (Chongqing University of Posts and Telecommunications, China)

09:50 – 10:05

Tea Break

10:05 – 11:45

Networking Systems 3

Session Chairs: Dr. Liwei Ren (Trend Micro), Ms. Hongzhen Shi (Yunnan Minzu Univ., China)

On Mitigating Interference Under Device-to-Device Communication in Macro-Small Cell Networks
Wenjie Chen (Central South University of Forestry and Technology, China); Tong Li, Zhu Xiao and Dong Wang (Hunan University, China)

Research on Mobile Network Traffic Taxonomy
Zhen Liu (Guangdong Pharmaceutical University, China); Ruoyu Wang (South China University of Technology, China); Deyu Tang (Guangdong Pharmaceutical University, China)

Wide Area and Wide Band Spectrum Monitoring System Based on Sensor Networks
Weilong Hu, Zan Li and Linlin Liang (Xidian University, China)

Synchronized Contention Windows-based Backoff Algorithm in IEEE 802.11 Wireless Networks
Yangchao Huang, Yujun Wang, Rui Zhu, Xihao Chen and Qingwei Meng (Air Force Engineering University, China)

Joint APs Selection and Resource Allocation for Self-Healing in Ultra Dense Network
Yiming Liu (Beijing University of Posts and Telecommunicaitons, China); Xi Li, Hong Ji, Ke Wang and Heli Zhang (Beijing University of Posts and Telecommunications, China)

10:05 - 11:45

Telecommunication Systems 3

Session Chairs: Ms. Tingting Lu (Ocean University of China, China), Mr. Saadullah Kalwar (Mehran University of Engineering & Technology, Jamshoro Pakistan)

An Error Correction Method with Adaptive Time Slot for AGV's Magnet-induced Marker Sensor
Yang Guangyong, Cui Lin and Chong Shan (Yunnan Minzu University, China)

Recursive Construction of Quasi-Cyclic Cycle LDPC Codes based on Replacement Products
Jiayi Huang and Xueqin Jiang (Donghua University, China); Zhang Xiao-Dong (Shanghai Jiao Tong University, China); Huiming Wang (XJTU, China); Wei Duan (ChonBuk National University, Korea)

Advantage Distillation Over MIMO Wiretap Channels Based on Generalized Extended Orthogonal Space-Time Block Codes
Yuwen Cao and Xueqin Jiang (Donghua University, China); Hui-Ming Wang (Xi'an Jiaotong University, China); Bai Enjian (Donghua University, China); Jun Li (Chonbuk National University, Korea)

A Simple Frequency-Domain Equalizer Over Doubly-Selective Channel Without Feedback
Zhuo Ma and WanWan Gao (Xidian University, China); Shuanyi Du (Xidian university, China); Bo Kang (TBEA Xi'an Electric Technology Co Ltd, China)

Accuracy analysis of an impulse radio 60 GHz positioning system
Tingting Lu and Hao Zhang (Ocean University of China, China); Xuerong Cui (China University of Petroleum, China); Jing Cui (Qingdao Municipal Center for Disease Control and Prevention, China); T. Aaron Gulliver (University of Victoria, Canada)

Cooperative Spectrum Sensing Using Discrete Goodness of Fit Testing for Multi-Antenna Cognitive Radio System

Yuxin Li, Yinghui Ye, Guangyue Lu and Cai Xu (Xi'an University of Posts and Telecommunications, China)

11:45 – 12:00

Closing Session