

**The 16th IEEE International Symposium on Parallel and Distributed  
Processing with Applications (ISPA 2018)**

**The 11th International conference on Security, Privacy and Anonymity in  
Computation, Communication and Storage (SpaCCS 2018)**

**The 17th IEEE International Conference on Ubiquitous Computing and  
Communications (IUCC 2018)**

**The 8th IEEE International Conference on Big Data and Cloud Computing  
(BDCloud 2018)**

**The 11th IEEE International Conference on Social Computing and  
Networking (SocialCom 2018)**

11-13 December 2018  
Melbourne Australia



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## **Notes:**

Paper presentation time slot: 20 minutes

Keynote time slot: 45 min

Poster: through the whole conference period

Presentation facilities: provided by the conference venue

Wireless Internet: provided by the conference venue

Hotel Phone: (+61) (0)3 9525 5522

# Program at a Glance

## Monday 10 December 2018

16:00-18:00	Pre-Registration (Pre Function Area, Novotel Melbourne St Kilda)
18:00-20:00	Welcome Reception (Pre Function Area, Novotel Melbourne St Kilda)

## Tuesday 11 December 2018

08:00-18:00	Registration (Pre Function Area, Novotel Melbourne St Kilda)				
09:00-09:10	Opening and Welcome (Ballroom, Novotel Melbourne St Kilda) Reps and Prof. Jinjun Chen				
09:10-09:55	Keynote Address 1: (Ballroom) Speaker: Prof. Wanlei Zhou Title: Privacy-preserving in Location-Based Services Chair: Jinjun Chen				
09:55-10:40	Keynote Address 2: (Ballroom) Speaker: Prof. Albert Y. Zomaya Title: Resource Provisioning for the Internet of Things: Open Issues and Challenges Chair: Jinjun Chen				
10:40-11:00	Morning Tea (Pre Function Area)				
11:00 – 12:30	Session 1A: ISPA (Brighton)	Session 1B: ISPA (Hampton)	Session 1C: ISPA (Sandringham)	Session 1D: IUCC&BDCloud (St Kilda)	Session 1E: SocialCom&SpaCCS (Elwood)
12:30-13:30	Lunch (Pre Function Area, Novotel Melbourne St Kilda)				
13:30 – 14:15	Keynote Address 3: (Ballroom) Speaker: Prof. Yonggang Wen Title: Training Acceleration for Distributed Machine-Learning Systems at Scale: A Network-Centric Approach Chair: Tianqing Zhu				
14:15 – 15:00	Keynote Address 4: (Ballroom) Speaker: Prof. Geyong Min Title: Data-Driven Knowledge Discovery for Intelligent Cloud and Network Management Chair: Tianqing Zhu				
15:00-15:30	Afternoon Tea (Pre Function Area)				
15:30-18:00	Session 2A: ISPA (Brighton)	Session 2B: ISPA (Hampton)	Session 2C: ISPA (Sandringham)	Session 2D: IUCC&BDCloud (St Kilda)	Session 2E: SocialCom&SpaCCS (Elwood)

## Wednesday 12 December 2018

08:00-18:00	Registration (Pre Function Area, Novotel Melbourne St Kilda)				
09:00-09:45	Keynote Address 5: (Ballroom) Speaker: Prof. Shahram Dustdar Title: Paradigmatic Research Challenges in IoT Systems Engineering Chair: Deepak Puthal				
09:45-10:30	Keynote Address 6: (Ballroom) Speaker: Prof. Kim-Kwang Raymond Choo Title: Cyber security threat and forensic intelligence Chair: Deepak Puthal				
10:30-11:00	Morning Tea (Pre Function Area)				
11:00-12:30	Session 3A: ISPA (Brighton)	Session 3B: ISPA (Hampton)	Session 3C: ISPA (Sandringham)	Session 3D: SpaCCS&BDCloud (St Kilda)	Session 3E: SocialCom&SpaCCS (Elwood)
12:30-13:30	Lunch (Pre Function Area)				
13:30-14:15	Keynote Address 7: (Ballroom) Speaker: Prof. Xun Yi Title: Blockchain-based online voting Chair: Raymond Choo				
14:15-15:00	Keynote Address 8: (Ballroom) Speaker: Prof. Willy Susilo Title: Security Proof of Digital Signatures Chair: Raymond Choo				
15:00-15:30	Afternoon Tea (Pre Function Area)				
15:30-17:30	Special Session: SpaCCS Security and Privacy Showcase Host: Jinjun Chen Presenters: Joseph Liu, Hua Wang, Yang Xiang, Tianqing Zhu, Zahir Tari				
17:30-18:30	Free time for walking around St Kilda Beach – a must go resort in Melbourne.				
19:00 - 21:30	Banquet (Ballroom with decoration) <b>NB: Please bring your name badge and banquet ticket. Otherwise, you may not be allowed for attendance.</b>				

## Thursday 13 December 2018

08:00-18:00	Registration (Pre Function Area, Novotel Melbourne St Kilda)				
09:00-10:30	Session 4A: ISPA (Brighton)	Session 4B: ISPA (Hampton)	Session 4C: ISPA (Sandringham)	Session 4D: SpaCCS&BDCloud (St Kilda)	Session 4E: SocialCom&SpaCCS (Elwood)
10:30-11:00	Morning Tea (Pre Function Area)				
11:00-12:30	Session 5A: ISPA (Brighton)	Session 5B: ISPA (Hampton)	Session 5C: ISPA (Sandringham)	Session 5D: SpaCCS (St Kilda)	Session 5E: SpaCCS (Elwood)
12:30-13:30	Lunch (Pre Function Area)				
13:30-15:30	Session 6A: ISPA (Brighton)	Session 6B: ISPA (Hampton)	Session 6C: ISPA (Sandringham)	Session 6D: SpaCCS (St Kilda)	Session 6E: SpaCCS (Elwood)
15:30-16:00	Afternoon Tea (Pre Function Area)				
16:00-18:00	Session 7A: ISPA (Brighton)	Session 7B: ISPA (Hampton)	Session 7C: ISPA (Sandringham)	Session 7D: ISPA (St Kilda)	Session 7E: ISPA (Elwood)

# Keynote Speech

**Prof. Wanlei Zhou**

## **Privacy-preserving in Location-Based Services**

In this talk we first systematically present the current research status of the privacy-preserving in Location-Based Services (LBS), including the location privacy definition, the attacks and adversaries, the location privacy preserving mechanisms, the location privacy metrics, and the current status of location based applications. Then we will discuss three application cases. The first application case is to enhance privacy of LBS in wireless vehicular networks, where we develop an LBS privacy-enhancing scheme that is dedicated to the vehicular environment by exploring the unique features of queries from in-vehicle users. In the second application case we present a private Blockchain based method for task payment that effectively preserves individual privacy in the entire crowdsensing system. And in the third application case we deal with the trajectory privacy preserving in mobile crowdsensing, where we develop a location privacy preserving framework based on economic models for mobile crowdsensing applications.

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

# Keynote Speech

**Professor Schahram Dustdar**

## **Paradigmatic Research Challenges in IoT Systems Engineering**

This talk explores the research challenges in the domain of IoT from multiple angles and reflects on the urgently needed collective efforts from various research communities to collaborate on those. Our approach fundamentally challenges the current thinking and understanding of scientific, technological, and political paradigms in tackling the engineering of IoT systems. We discuss technical paradigms and research challenges in the domains of Cloud and Edge Computing as well as the requirements of people in such systems. We will explore how these novel approaches impact application composition utilizing AI and Edge Computing.

**Short Bio:** Schahram Dustdar is Professor of Computer Science heading the Distributed Systems Group at the Technical University of Vienna. From 2004-2010 he was also Honorary Professor of Information Systems at the Department of Computing Science at the University of Groningen (RuG), The Netherlands. From 1999 - 2007 he worked as the co-founder and chief scientist of Caramba Labs Software AG in Vienna (acquired by Engineering NetWorld AG), a venture capital co-funded software company focused on software for collaborative processes in teams. Caramba Labs was nominated for several (international and national) awards: World Technology Award in the category of Software (2001); Top-Startup companies in Austria (Cap Gemini Ernst & Young) (2002); MERCUR Innovationspreis der Wirtschaftskammer (2002).

From Dec 2016 until Jan 2017 he was a Visiting Professor at the University of Sevilla, Spain and from January until June 2017 he was a Visiting Professor at UC Berkeley, USA. He is co-Editor-in-Chief of the new ACM Transactions on the Internet of Things as well as Editor-in-Chief of Computing (Springer). He is an Associate Editor of IEEE Transactions on Services Computing, IEEE Transactions on Cloud Computing, ACM Transactions on the Web, and ACM Transactions on Internet Technology, as well as on the editorial board of IEEE Internet Computing and IEEE Computer. Dustdar is recipient of the ACM Distinguished Scientist award (2009), the IBM Faculty Award (2012), an elected member of the Academia Europaea: The Academy of Europe, where he is chairman of the Informatics Section, as well as an IEEE Fellow (2016).

# Keynote Speech

## Professor C. L. Philip Chen

The University of Sydney, Australia

### **Big Data Analytics: Computational Intelligence Approaches and Prospect in Future Applications**

It is already true that Big Data has drawn huge attention from researchers in information sciences, policy and decision makers in governments and enterprises. A large number of fields and sectors, ranging from economic and business activities to public administration, from national security to scientific researches in many areas, involve with Big Data problems. This talk is aimed to discuss a close-up view about Big Data -- Big Data analytical using computation intelligence approaches, together with Big Data applications, opportunities and challenges, as well as prospect in future applications.

**Short Bio:** Dr. Chen's research areas are in systems, cybernetics and computational intelligence. After being served as the President of IEEE Systems, Man, and Cybernetics Society (SMCS) (2012-2013), where he also has been a distinguished lecturer for many years and received Outstanding Service Awards 4 times, currently, he is the Editor-in-Chief of IEEE Transactions on Systems, Man, and Cybernetics: Systems (2014- ) and an Associate Editor of IEEE Trans on Fuzzy Systems, IEEE Trans on Cybernetics. He was the Chair of TC 9.1 Economic and Business Systems of IFAC (2015-2017).

He is a Fellow of the IEEE, AAAS, IAPR, CAA, HKIE, and a member of Academia Europaea and International Academy of Systems and Cybernetics Science (IASCYS). He is listed as a Highly Cited Researcher in Computer Science in 2018 by Clarivate Analytics (Web of Sciences). Dr. received IEEE Norbert Wiener Award in 2018 for his research contribution in systems, cybernetics, and machine learning.

In education service, he is an ABET (Accreditation Board of Engineering and Technology Education, USA) Program Evaluator for Computer, Electrical, and Software Engineering programs. University of Macau's Engineering and Computer Science programs receiving HKIE's accreditation and Washington/Seoul Accord is his utmost contribution in engineering education for Macau as the former Dean. During his deanship, the engineering and computer science programs both have been ranked at world top 200 in the Times Higher Education (THE) world university ranking. The computer science program is also ranked at world top 161 in the US News and World Report global university ranking. Dr. Chen received Outstanding Electrical and Computer Engineering Award in 2016 from his alma mater, Purdue University, West Lafayette, where he received his Ph.D. degree in 1988, after he received his M.S. degree in electrical engineering from the University of Michigan, Ann Arbor, in 1985.



# Keynote Speech

## Professor Kim-Kwang Raymond Choo

### Cyber security threat and forensic intelligence

Cyber threat intelligence and analytic is among one of the fastest growing interdisciplinary fields of research bringing together researchers from different fields such as digital forensics, political and security studies, criminology, cyber security, big data analytics, machine learning, etc. to detect, contain and mitigate advanced persistent threats and fight against organized cybercrimes. In this presentation, we will discuss some of the challenges underpinning this inter- / trans- /multi-disciplinary field as well as research opportunities (e.g. how can we leverage advances in deep learning to better predict cyber attacks?).

**Short Bio:** Kim-Kwang Raymond Choo received the Ph.D. in Information Security in 2006 from Queensland University of Technology, Australia. He currently holds the Cloud Technology Endowed Professorship at The University of Texas at San Antonio (UTSA). In 2016, he was named the Cybersecurity Educator of the Year – APAC (Cybersecurity Excellence Awards are produced in cooperation with the Information Security Community on LinkedIn), and in 2015 he and his team won the Digital Forensics Research Challenge organized by Germany’s University of Erlangen-Nuremberg. He is the recipient of the 2018 UTSA College of Business Col. Jean Piccione and Lt. Col. Philip Piccione Endowed Research Award for Tenured Faculty, IEEE TrustCom 2018 Best Paper Award, ESORICS 2015 Best Research Paper Award, 2014 Highly Commended Award by the Australia New Zealand Policing Advisory Agency, Fulbright Scholarship in 2009, 2008 Australia Day Achievement Medallion, and British Computer Society’s Wilkes Award in 2008. He is also a Fellow of the Australian Computer Society, an IEEE Senior Member, Co-Chair of IEEE Multimedia Communications Technical Committee (MMTC)’s Digital Rights Management for Multimedia Interest Group, and an Honorary Commander of the 502nd Air Base Wing, Joint Base San Antonio-Fort Sam Houston.

# Keynote Speech

## Professor Yonggang Wen

### Training Acceleration for Distributed Machine-Learning Systems at Scale: A Network-Centric Approach

Distributed machine-learning (ML) systems, in response to big data and big models, play an important role in fueling the emerging artificial intelligence revolution. In this context, the parameter server (PS) framework has been widely used to train models at scale in modern ML systems, such as Petuum, MxNet, TensorFlow and Factorbird. It tackles the big-data problem by having worker nodes perform data-parallel computation, and server nodes maintain globally shared parameters. However, when training models of large size, worker nodes frequently pull parameters from server nodes and push updates to server nodes, often resulting in high communication overhead. Our investigations show that modern distributed ML applications could consume up to 5 times more time on communication than computation. To address this problem, we propose an optimized communication layer for the PS framework, called as Parameter Flow (PF). The PF employs a Swiss-army-knife approach by staking three complementary techniques in the system level. First, we introduce an update-centric communication (UCC) model to exchange data between worker/server nodes via two operations: broadcast and push. Second, we develop a dynamic value-bounded filter (DVF) to reduce network traffic by selectively dropping updates before transmission. Third, we design a tree-based streaming broadcasting (TSB) system to efficiently broadcast aggregated updates among worker nodes. Our proposed PF can significantly reduce network traffic and communication time. Extensive performance evaluations have showed that PF can speed up popular distributed ML applications by a factor of up to 4.3 in a dedicated cluster, and up to 8.2 in a shared cluster, compared to a generic PS system without PF. The PF framework has been used by a few industry partners.

**Short Bio:** Dr. Yonggang Wen is an associate professor with School of Computer Science and Engineering (SCSE) at Nanyang Technological University (NTU), Singapore. He is also the Associate Dean (Research) at College of Engineering (CoE) and the Acting Director of Nanyang Technopreneurship Centre (NTC) at NTU. He received his PhD degree in Electrical Engineering and Computer Science (minor in Western Literature) from Massachusetts Institute of Technology (MIT), Cambridge, USA, in 2008. Previously he has worked in Cisco to lead product development in content delivery network, which had a revenue impact of 3 Billion US dollars globally. Dr. Wen has published over 200 papers in top journals and prestigious conferences. His systems research has gained global recognitions. His work in Multi-Screen Cloud Social TV has been featured by global media (more than 1600 news articles from over 29 countries) and received ASEAN ICT Award 2013 (Gold Medal). His work on Cloud3DView for Data Centre Life-Cycle Management, as the only academia entry, has won the 2015 Data Centre Dynamics Awards – APAC (the ‘Oscar’ award of data centre industry) and 2016 ASEAN ICT Awards (Gold Medal). He is the winner of 2017 Nanyang Award for Innovation and Entrepreneurship, the highest recognition at NTU. He is a co-recipient of Best Paper Awards at 2016 IEEE Globecom, 2016 IEEE Infocom MuSIC Workshop, 2015 EAI Chinacom, 2014 IEEE WCSP, 2013 IEEE Globecom and 2012 IEEE EUC, and a co-recipient of 2015 IEEE Multimedia Best Paper Award. He serves on editorial boards for IEEE Communications Survey & Tutorials, IEEE Transactions on Multimedia, IEEE Transactions on Circuits and Systems for Video Technology, IEEE Wireless Communication, IEEE Transactions on Signal and Information Processing over Networks, IEEE Access Journal and Elsevier Ad Hoc Networks, and was elected as Chair for IEEE ComSoc Multimedia Communication Technical Committee (2014-2016). His research interests include artificial intelligence, blockchain, cloud computing, green data center, big data analytics, multimedia network and mobile computing.

# Keynote Speech

## Professor Willy Susilo

### Security Proof of Digital Signatures

Digital signatures are the foundation of modern cryptography. We prove the security of a signature scheme by reducing an attack to solving an underlying hard problem. An ideal security reduction should be a tight reduction under a standard assumption in the standard security model without random oracles. Unfortunately, it is hard to program a security reduction capturing the above four features. In this talk, I will focus on tight reduction for digital signatures and introduce two different methods towards tight reduction.

**Short Bio:** Willy Susilo is a Professor, the Head of School of Computing and Information Technology and the director of Institute of Cybersecurity and Cryptology (iC2) at the University of Wollongong. He was previously awarded the prestigious ARC Future Fellow by the Australian Research Council (ARC) and the Researcher of the Year award in 2016 by the University of Wollongong. His main research interests include cybersecurity, cryptography and information security. His work has been cited more than 9,000 times in Google Scholar. He is the Editor-in-Chief of the Information journal. He has served as a program committee member in dozens of international conferences. He has published more than 400 research papers in the area of cybersecurity and cryptology.

# Keynote Speech

## Professor Xun Yi

### Blockchain-based online voting

A blockchain is a public, append-only, immutable ledger maintained by a decentralised peer-to-peer network. Whilst first designed for digital currencies without trusted third parties, blockchain technology has now moved into many fields beyond finance. In this talk, we focus on blockchain-based online voting. There are a number of existing proposals for such a system, using the blockchain as a public bulletin board to store the voting data, such as FollowMyVote and TIVI. These proposals achieve voter privacy by involving trusted authorities that obfuscate the relation between real-world identities and keys, or by shuffling encrypted votes before decrypting. We propose a self-tallying online voting system using a smart contract deployed on Ethereum. The system reduces the responsibilities of election authorities to a minimum and allows candidate ranking, instead of just voting for one candidate. The voting mechanism is inspired by score voting, which enables voters to assign points to different candidates directly without any restrictions apart from the total number of available points specified.

**Short Bio:** Xun Yi is currently a Professor with the Computer Science and Software Engineering, School of Science, RMIT University, Australia. His research interests include applied cryptography, computer and network security, mobile and wireless communication security, and data privacy protection. He has published more than 160 research papers in international journals and conference proceedings. He has ever undertaken program committee members for more than 30 international conferences. Recently, he has led some Australia Research Council (ARC) Discovery Projects in data privacy protection.

# Keynote Speech

## Professor Geyong Min

### **Data-Driven Knowledge Discovery for Intelligent Cloud and Network Management**

Aiming at achieving high performance and availability of Cloud computing and networking systems, our vision is to conduct efficient data analysis in order to dig valuable knowledge and actionable insights hidden in network big data for improving the design, operation, and management of Cloud and networks. This talk will present the innovative big data modelling and processing technologies, real-time incremental data analysis tools, and a cost-effective distributed platform we have recently developed to support better decision-making for system design, anomaly detection, resource management and optimization. This talk offers the theoretical underpinning for efficient processing of big data, and also opens up a new horizon of research and development by exploiting the key intelligence and insights hidden in content-rich big data for the design and improvement of Cloud computing and networking systems.

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

# Keynote Speech

## Professor Albert Zomaya

### Resource Provisioning for the Internet of Things: Open Issues and Challenges

Recent technological trends such as Industry 4.0 introduced new challenges that push the limit of current computer and networking architectures. It demands the connection of thousands, if not millions, of sensors and mobile devices coupled with optimized operations to automate various operations inside factories. This led to the new era of Internet of Things (IoTs) where lightweight (possibly mobile) devices are envisaged to send vital information to cloud data centres (mobile and fixed infrastructure) for further processing and decision making.

Current cloud computing systems, however, are not able to efficiently digest and process collected information from IoT devices with strict response requests for two main reasons: (1) the round trip delay between IoT devices to the processing engines of cloud could exceed an application's threshold, and (2) network links to cloud resources could be clogged when IoT devices flush data in an uncoordinated fashion. Fog and Edge Computing are two solutions to address both of the previous problems. Though designed to alleviate the same problem, they have fundamental differences that make adopting one more applicable than the other.

This talk will overview the practical concerns of today's IoT implementations through tackling the most important obstacles that hinder their adoption. First, production of applicable network (fixed and mobile) latency models to capture all elements of IoT platforms. Second, building a holistic platform to orchestrate various inter-related layers of IoT platforms, including connectivity, big-data analytics, and workload optimization. Third, proposing viable solutions that can be actually implemented in IoT-based applications. More details will be provided about the above issues during the talk.

**Short Bio:** Chair Professor of High Performance Computing & Networking and Australian Research Council Professorial Fellow in the School of Information Technologies, Sydney University. He is also the Director of the Centre for Distributed and High Performance Computing which was established in late 2009.

ALBERT Y. ZOMAYA is the Chair Professor of High Performance Computing & Networking and served as Australian Research Council Professorial Fellow (2010-2014) in the School of Information Technologies, Sydney University. He is also the Director of the Centre for Distributed and High Performance Computing which was established in late 2009.

Dr. Zomaya published more than 600 scientific papers and articles and is author, co-author or editor of more than 20 books. He served as the Editor in Chief of the IEEE Transactions on Computers (2011-2014) and was elected recently as a Founding Editor in Chief for the IEEE Transactions on Sustainable Computing. Also, Dr. Zomaya serves as a Co-Founding Editor-in-Chief of IET Cyber-Physical Systems and Associate Editor-in-Chief (Special Issues) of the Journal of Parallel and Distributed Computing. He also serves as an associate editor for 22 leading journals, such as, the ACM Computing Surveys, ACM Transactions on Internet Technology, IEEE Transactions on Cloud Computing, and IEEE Transactions on Computational Social Systems. Dr. Zomaya is the Founding Editor of several book series, such as, the Wiley Book Series on Parallel and Distributed Computing, Springer Scalable Computing and Communications, and IET Book Series on Big Data.

Dr. Zomaya has delivered more than 180 keynote addresses and invited seminars, and delivered many media briefings and has been actively involved, in a variety of capacities, in the organization of more than 700 conferences. Dr. Zomaya is the recipient of the IEEE Technical Committee on Parallel Processing Outstanding Service Award (2011), the IEEE Technical Committee on Scalable Computing Medal for Excellence in Scalable Computing (2011), the IEEE Computer Society Technical Achievement Award (2014), and the ACM SIGSIM MSWiM Reginald A. Fessenden Award (2017). He is a Chartered Engineer, a Fellow of AAAS, IEEE, IET, and a Distinguished Member of the ACM. Dr. Zomaya's research interests are in the areas of parallel, distributed, and mobile computing, networking, and complex systems.

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### Session 1A: ISPA (Brighton)

Session Chair: Ji Wang

#### **Solution Space Adjustable CNF Obfuscation for Privacy-Preserving SAT Solving**

*Ying Qin, XiaoYang Shen and ZhenYue Du*

#### **Joint Optimization of Stateful VNF placement and Routing Scheduling in Software-Defined Networks**

*Jiugen Shi, Ji Wang, Huawei Huang, Lulu Shen, Jin Zhang, Hao Xu*

#### **A Low Cost Method for Determining the Entire Network Path Bandwidths of Indirect High-Performance Computer Networks**

*Baicheng Yan, Yi Zhou, Limin Xiao, Zhang Yang, Hongyu Wu, Bing Wei*

#### **Efficient Parallel CTL Model-Checking for Pushdown Systems**

*Xinyu Chen, Hansheng Wei, Xin Ye, Hao Li, Yanhong Huang, Jianqi Shi*

**Acoustics Simulation on Sunway TaihuLight Based on Solving the Integral of Ffowcs Williams-Hawkings Equation**

*Wenhao Zhu, Bohan Ding, Wu Zhang, Kangle Xu*

**Network Optimizations on Prediction Server with Multiple Predictors**

*Kaho Okuyama, Yuta Tokusashi, Takuma Iwata, Mineto Tsukada, Kazumasa Kishiki and Hiroki Matsutani*

**Session 1B: ISPA 2018 (Hampton)**

**Session Chair: Germán Ceballos**

**An Effective Clustering Method for Finding Density Peaks**

*Rui-dong Qj, Jian-tao Zhou, Xiaoyu Song*

**Tail-PASS: Resource-based Cache Management for Tiled Graphics Rendering Hardware**

*Germán Ceballos, Erik Hagersten, David Black-Schaffer*

**A Truthful Profit-oriented Mechanism for Mobile Crowdsensing**

*Yu Qiao, Yi Gu, Jun Wu, Lei Zhang, Guojun Wang*

**A False-name-proof Protocol for Multicast Routing Auctions**

*Yu Qiao, Yue Song, Jun Wu, Lei Zhang, Guojun Wang, Nan Wang*

**WEAVER: An Energy Efficient, General-Purpose Acceleration Architecture for String Operations in Big Data Applications**

*Wenming Li, Xiaochun Ye, Da Wang, Hao Zhang, Dongdong Wu, Zhimin Zhang, Dongrui Fan*

**Session 1C: ISPA 2018 (Sandringham)**

**Session Chair: Hongli Lu**

**SLA-aware and Energy-efficient VM Consolidation in Cloud Data Centers Using Host States Naive Bayesian Prediction Model**

*Lianpeng Li, Jian Dong, Decheng Zuo*

**Parallel Model Checking on Pushdown Systems**

*Hansheng Wei, Xinyu Chen, Xin Ye, Neng Fu, Jianqi Shi, Yanhong Huang*

**Effective Clustering Analysis based on New Designed CVI and Improved Clustering Algorithms**

*Erzhou Zhu, Binbin Zhu, Feng Liu, No*

**Distributed Parallelizability Analysis of Legacy Code**

*Junfeng Zhao, Zhimei Zhao, Hongji Yang*

**Efficient online stream deduplication for network block storage**

*Hongli Lu, Guangping Xu, Bo Tang, Mian Zhou, Shengli Li*

**Design of a visual front-end for parallel signal processing on underwater search drone**

*Bogusław Cyganek*

**Session 1D: IUCC&BDCloud (St Kilda)**

**Session Chair: Nicolas Verstaevel**

**An ontology based context-aware architecture for smart campus applications**

*Nicolas Verstaevel, Guillaume Garzone, Thierry Monteil, Nawal Guermouche, Johan Barthelemy, Pascal Perez*

**A Technology Assisted Framework For Medical Emergencies Involving Formal and Informal Caregivers**

*Md Akbar Hossain, Sayan Kumar Ray*

**A Hybrid Indoor Localization System Running Ensemble Machine Learning**

*Duy Nguyen Phuong, Thanh Pham Chi*

**Low Dimensional Representation of Space Structure and Clustering of Categorical Data**

*Jianjun Cao, Qibin Zheng, Xingchun Diao, Nianfeng Weng*

**Session 1E: SocialCom&SpaCCS ((Elwood)**

**Session Chair: Shatha Jaradat**

**Estimating Top-k Betweenness Centrality Nodes in Online Social Networks**

*Kazuki Nakajima, Kenta Iwasaki, Toshiki Matsumura, Kazuyuki Shudo*



**Comparing Graph Sampling Methods Based on the Number of Queries**

*Kenta Iwasaki, Kazuyuki Shudo*

**Dynamic CNN Models For Fashion Recommendation in Instagram**

*Shatha Jaradat, Nima Dokoohaki, Kim Hammar, Ummal Wara, Mihhail Matskin*

**The Incorporation of Social Media in an Emergency Supply and Demand Framework in Disaster Response**

*Meng Seng Wong, Nishimoto Hideki, Nishigaki Yasuyuki*

**A Novel Graph Analytic Approach to Monitor Terrorist Networks**

*Kaustav Basu, Chenyang Zhou, Victoria Goliber, Arunabha Sen*

**Session 2A: ISPA (Brighton)**

**Session Chair: Xuyun Zhang**

**A Partition Matching Method for Optimal Attack Path Analysis**

*Hui Xie, Kun Lv, Changzhen Hu*

**Big Data Processing in Fog - Smart Parking Case Study**

*Sang Nguyen, Zoran Salcic, Xuyun Zhang*

**Asynchronous group-based ADMM algorithm under efficient communication structure**

*Jianhui Zhou, Yongmei Lei*

**Heuristic Prefetching Caching Strategy to Enhance QoE in Edge Computing**

*Meng Sun, Haopeng Chen, Buqing Shu, Fei Hu*

**Reducing Time and/or Memory Consumption of The SOG construction in a Parallel Context**

*Hiba Ouni, Kais Klai, Chiheb Ameur Abid, Belhassen Zouari*

**Subgroup Discovery Method Based on User Behavior Analysis**

*Yue Yang, Qiaohong Wang, Jing Yang, Jianpei Zhang, Xiaoyang Ma*

**Loop Perforation In OpenACC**

*Ahmad Lashgar, Ehsan Atoofian, Amirali Baniasadi*

**High-performance and Energy-efficient Fault Tolerance Scheduling Algorithm Based on Improved TMR for Heterogeneous System**

*Shigan Yu, Zhimin Tang, Zhimin Zhang, Xiaochun Ye, Dongrui Fan, Zhiying Jiang*

**Session 2B: ISPA 2018 (Hampton)**

**Session Chair: Eric McCreath**

**An Energy and Robustness Adjustable Optimization Method of File Distribution Services**

*Dongchao Ma, Hongchao Li, Xingguo Sun, Li Ma, Chengan Zhao*

**FLAC Decoding Using GPU Acceleration**

*Haolei Ye, Eric McCreath*

**Neighboring and Non-neighboring Features for Pedestrian Detection**

*Youze Zhu, Yanqin Yang, Wenchao Xu*

**Fisher: An Efficient Container Load Prediction Model with Deep Neural Network in Clouds**

*Xuehai Tang, Qiyang Liu, Yangchen Dong, Jizhong Han, Zhiyuan Zhang*

**Accelerating Blockchain Transfer System Using FPGA-Based NIC**

*Yuma Sakakibara, Yuta Tokusashi, Shin Morishima, Hiroki Matsutani*

**Site-Effect-Based Semi-Synchronous Label Propagation Algorithm for Community Detection**

*Tianqi Liu, Xuefeng Yan, Shenzhi Cen*

**Adaptive Centre-Weighted Oversampling for Class Imbalance in Software Defect Prediction**

*Qj Zhao, Xuefeng Yan, Yong Zhou*

**LogoPhish: A New Two-dimensional Code Phishing Attack Detection Method**

*wenbin yao, yuanhao ding, xiaoyong li*

**Session 2C: ISPA 2018 (Sandringham)**

**Session Chair: Xirong Xu**

**Fault-Tolerant Edge-Pancyclicity of Möbius cube MQn**

*Xirong Xu, Huifeng Zhang, Pir Soomro*

**Acceleration of Anomaly Detection in Blockchain Using In-GPU Cache**

*Shin Morishima, Hiroki Matsutani*

**Gaia Scheduler: A Kubernetes-based Scheduler Framework**

*Shengbo Song, Lelai Deng, Jun Gong, Hanmei Luo*

**Design of A Compact and reconfigurable Onboard Data Handling System**

*Qing Zhou, Qingjie Zhao, Li Zhou, Junshe An, Changbin Xue, Yuyin Tan, Jianing Rao*

**URL2Vec: URL Modeling with Character Embeddings for Fast and Accurate Phishing Website Detection**

*Huaping Yuan, Zhenguo Yang, Chen Xu, Yukun Li, Wenyin Liu*

**Personalized Commodity Recommendations of Retail Business using User Feature based Collaborative Filtering**

*feiran wang, yipin wen, tianhang guo, jinjun chen, Buqing Cao*

**A Transition State Cost Sensitive Virtual Machines Consolidation**

*Najet Hamdi, Walid Chainbi, Mohamed Ali Mahjoub*

**Efficient Coflow Scheduling of Multi-stage Jobs with Isolation Guarantee**

*Zifan Liu, Haipeng Dai, Bingchuan Tian, Wajid Rafique, Wanchun Dou*

**Session 2D: IUCC&BDCloud (St Kilda)**

**Session Chair: Vladimir Vlassov**

**On Scheduling of High-Throughput Scientific Workflows under Budget Constraints in Multi-Cloud Environments**

*Ruxia Li, Chase Q. Wu, Aiqin Hou, Yongqiang Wang, Tianyu Gao, Mingrui Xu*

**Storage-aware Task Scheduling for Performance Optimization of Big Data Workflows**

*Qianwen Ye, Chase Q. Wu, Huiyan Cao, Nageswara S.V. Rao, Aiqin Hou*

**Human Activity Recognition Using Federated Learning**

*Konstantin Sozinov, Vladimir Vlassov, Sarunas Girdzijauskas*

**Radix: Enabling High-Throughput Georeferencing for Phenotype Monitoring over Voluminous Observational Data**

*Maxwell Roselius, Sangmi L. Pallickara*

**Fog computing and its role in development of Smart applications**

*Mandeep Kaur and Rajni Aron*

**Session 2E: SocialCom&SpaCCS ((Elwood)**

**Session Chair: Ericsson Santana Marin**

**On the Usability of Big (Social) Data**

*Sunil Choenni, Niels Netten, Mortaza Shoaee-Bargh*

**Deriving the Political Affinity of Twitter Users from Their Followers**

*Giorgos Stamatelatos, Sotirios Gyftopoulos, George Drosatos, Pavlos S. Efraimidis*

**Predicting Hacker Adoption on Darkweb Forums Using Sequential Rule Mining**

*Ericsson Marin, Mohammed Almukaynizi, Eric Nunes, Jana Shakarian, Paulo Shakarian*

**Negotiating Consumerism and Feminism on Instagram**

*Mathilde Hogsnes and Kjeld S. Hansen*

**Intelligent Walk Authentication: Implicit Authentication When You Walk with Smartphone**

*Huiyong Li, Jiannan Yu*

**Interacting with the Internet of Things using smart contracts and blockchain technologies**

*Nikos Fotiou, Vasilios Siris and George Polyzos*

**DNS traffic of a Tor exit node - An analysis**

*Michael Sonntag*

**SDN Based Secure VANETs Communication with Fog Computing**

*Muhammad Arif, Guojun Wang, Tian Wang, Tao Peng*

## Wednesday 12 December 2018

08:00-18:00	Registration (Pre Function Area, Novotel Melbourne St Kilda)				
09:00-09:45	Keynote Address 5: (Ballroom) Speaker: Prof. Schahram Dustdar Title: Paradigmatic Research Challenges in IoT Systems Engineering Chair: Deepak Puthal				
09:45-10:30	Keynote Address 6: (Ballroom) Speaker: Prof. Kim-Kwang Raymond Choo Title: Cyber security threat and forensic intelligence Chair: Deepak Puthal				
10:30-11:00	Morning Tea (Pre Function Area)				
11:00-12:30	Session 3A: ISPA (Brighton)	Session 3B: ISPA (Hampton)	Session 3C: ISPA (Sandringham)	Session 3D: SpaCCS&BDCloud (St Kilda)	Session 3E: SocialCom&SpaCCS (Elwood)
12:30-13:30	Lunch (Pre Function Area)				
13:30-14:15	Keynote Address 7: (Ballroom) Speaker: Prof. Xun Yi Title: Blockchain-based online voting Chair: Raymond Choo				
14:15-15:00	Keynote Address 8: (Ballroom) Speaker: Prof. Willy Susilo Title: Security Proof of Digital Signatures Chair: Raymond Choo				
15:00-15:30	Afternoon Tea (Pre Function Area)				
15:30-17:30	Special Session: SpaCCS Security and Privacy Showcase Host: Jinjun Chen Presenters: Joseph Liu, Hua Wang, Yang Xiang, Tianqing Zhu, Zahir Tari				
17:30-18:30	Free time for walking around St Kilda Beach – a must go resort in Melbourne.				
19:00 - 21:30	Banquet (Ballroom with decoration) <b>NB: Please bring your name badge and banquet ticket. Otherwise, you may not be allowed for attendance.</b>				

### Session 3A: ISPA (Brighton)

Session Chair: Hugo Daniel Meyer

#### Effective Cooperative UAV Searching using Adaptive STGM Mobility Model in a FANET

*Xianfeng Li, Jianfeng Li, Jie Chen*

#### A Data Related Behaviors Automatic Detection Method for Parallel Software Testing

*Tao Sun, Wenjie Zhong*

#### Improving Branch Prediction Accuracy on Multi-Core Architectures for Big Data

*Jianqiao Ma, Qi Yu, Libo Huang, Hui Guo, Cheng Qian, Zhiying Wang*

#### Improving substrate network resources management in network virtualization by utilizing a software-based network

*Amir Javadpour, Guojun Wang, Xiaofei Xing*

#### On the Effectiveness of Communication-Centric Modelling of Complex Embedded Systems

*Hugo Meyer, Uraz Odyurt, Simon Polstra, Evangelos Paradas, Ignacio Gonzalez Alonso, Andy D. Pimentel*

**Session 3B: ISPA 2018 (Hampton)**

**Session Chair: Deepak Puthal**

**Asymmetric-ReRAM: A Low Latency and High Reliability Crossbar Resistive Memory Architecture**

*Yang Zhang, Dan Feng, Zhipeng Tan, Jingning Liu, Wei Tong, Chengning wang*

**Hierarchical Attention Based Recurrent Neural Network Framework For Mobile MOBA Game Recommender Systems**

*QJONGJIE YAO, XIAOFEI LIAO, HAI JIN*

**Delay-Aware Secure Computation Offloading Mechanism in a Fog-Cloud Framework**

*Yang Yang, Xiaolin Chang, Zhen Han, Lin Li*

**A Comprehensive Detection of Memory Corruption Vulnerabilities for C/C++ Programs**

*Yuhan Gao, Liwei Chen, Fei Zhang*

**Using Centralized I/O Scheduling Service(CISS) to Improve Cloud Object Storage Performance**

*Xiao Shi, Detian Hu, Hongwei Tang, Xiaohui Zheng, Xiaofang Zhao*

**Session 3C: ISPA 2018 (Sandringham)**

**Session Chair: Wenda Tang**

**Adjusting Matching Algorithm to Adapt to Dynamic Subscriptions in Content-based Publish/Subscribe Systems**

*Shiyou Qian, Weichao Mao, Jian Cao, Guangtao Xue, Jiadi Yu, Yanmin Zhu, Minglu Li, Wenjuan Li*

**A Blockchain-Based Offloading Approach in Fog Computing Environment**

*Wenda Tang, Xuan Zhao, Wajid Rafique, Wanchun Dou*

**AALB : Adaptive Algorithm of Load Balance for CAM Physics on Sunway TaihuLight Supercomputer**

*Heng Guo, Zuoning Chen, Xin Liu*

**An Online Sockpuppet Detection Method Based on Subgraph Similarity Matching**

*Jingli Wang, Wei Zhou, Jiacheng Li, Jizhong Han, Songlin Hu*

**Proportion Scheduler to Improve the Mismatched Locality in YARN**

*Jie Xu, Jingyu Wang, Qi Qi, Jianxin Liao*

**Session 3D: SpaCCS&BDCloud (St Kilda)**

**Session Chair: Michael Sonntag**

**Wearable Device Data for Criminal Investigation**

*Sarah McNary, Aaron Hunter*

**Authentication of Skyline Query over Road Networks**

*Xiaoyu Zhu, Jie Wu, Wei Chang, Guojun Wang, Qin Liu*

**A Service Oriented Healthcare Architecture (SOHA-CC) Based on Cloud Computing**

*Syed Qasim Afser Rizvi, Guojun Wang, Jianer Chen*

**Investigation on Unauthorized Human Activity Watching through Leveraging Wi-Fi Signals**

*Md Zakirul Alam Bhuiyan, Md Monirul Islam, Guojun Wang, and Tian Wang*

**E2STA: An Energy-Efficient Spatio-Temporal Query Algorithm for Wireless Sensor Networks**

*Liang Liu, Zhe Xu, Yi-Ting Wang and Xiao-Lin Qin*

**A cloud environment for ubiquitous medical image reconstruction**

*Estefania Serrano, Javier Garcia-Blas, Jesus Carretero*

**Session 3E: SocialCom&SpaCCS ((Elwood)**

**Session Chair: Savio Sciancalepore**

**Research on Multi-focus image fusion algorithm based on quadtree**

*Senlin Wang, Junhai Zhou, Qin Liu and Zheng Qin*

**Uncertainty Evaluation for Big Data of Mass Standards in a Key Comparison**

*Xiaoping Ren and Fang Nan*

**Research on Spectrum Sensing of Wireless Network Based on Machine Learning**  
*Heng Xiao and Xianchun Zhou*

**An Enhanced Security Key Management Scheme for LoRaWAN**

*Jialuo Han and Jidong Wang*

**SOS - Securing Open Skies**

*Savio Sciancalepore, Roberto Di Pietro*

## Thursday 13 December 2018

08:00-18:00	Registration (Pre Function Area, Novotel Melbourne St Kilda)				
09:00-10:30	Session 4A: ISPA (Brighton)	Session 4B: ISPA (Hampton)	Session 4C: ISPA (Sandringham)	Session 4D: SpaCCS&BDCloud (St Kilda)	Session 4E: SocialCom&SpaCCS (Elwood)
10:30-11:00	Morning Tea (Pre Function Area)				
11:00-12:30	Session 5A: ISPA (Brighton)	Session 5B: ISPA (Hampton)	Session 5C: ISPA (Sandringham)	Session 5D: SpaCCS (St Kilda)	Session 5E: SpaCCS (Elwood)
12:30-13:30	Lunch (Pre Function Area)				
13:30-15:30	Session 6A: ISPA (Brighton)	Session 6B: ISPA (Hampton)	Session 6C: ISPA (Sandringham)	Session 6D: SpaCCS (St Kilda)	Session 6E: SpaCCS (Elwood)
15:30-16:00	Afternoon Tea (Pre Function Area)				
16:00-18:00	Session 7A: ISPA (Brighton)	Session 7B: ISPA (Hampton)	Session 7C: ISPA (Sandringham)	Session 7D: ISPA (St Kilda)	Session 7E: ISPA (Elwood)

### Session 4A: ISPA (Brighton) Session Chair: Miguel Areias

**Memory Cache Attacks on Alluxio Impede High Performance Computing**

*Yizhe Yang, Qingni Shen, Wu Xin, Wenjun Qian, Yahui Yang, Zhonghai Wu*

**On Extending a Fixed Size, Persistent and Lock-Free Hash Map Design to Store Sorted**

*Miguel Areias, Ricardo Rocha*

**Wi-Fi Radar Placement for Coverage in Collapsed Structures**

*Muhammad Faizan Khan, Guojun Wang, Md Zakirul Alam Bhuiyan, Shuhong Chen*

**A Hierarchical CPN Model Automatically Generating Method Aiming at Multithreading Program Algorithm Error Detection**

*Tao Sun, Yangyang Liu*

**Exploring Parallelism in Mibench with Loop and Procedure Level Speculation**

*Bu Deqing, Wang Yaobin, Li Ling, Liu Zhiqin, Yu Wenxin, Manasah Musariri*

### Session 4B: ISPA 2018 (Hampton)

Session Chair: Deepak Puthal

**Pricing Cloud Resource based on Multi-Agent Reinforcement Learning in the Competing Environment**

*Bing Shi, Han Yuan, Rongjian Shi*

**GaiaGPU: Sharing GPUs in Container Clouds**

*Shengbo Song, Jing Gu, Hanmei Luo, Ying Li*

**A Revised DNA Computing Model of Inversion and Division over Finite Field  $GF(2^n)$**

*Yongnan Li*

**Parallel software Testing Sequence Generation Method Based on State Pruning**

*Tao Sun, Ting Zhang, Xin Guo*

**A Topology-Based Approach to Pattern Recognition on Graph-Structured Data**

*Jun Chen, Haopeng Chen*

**Session 4C: ISPA 2018 (Sandringham)**

**Session Chair: Jingyuan Hu**

**Re-running Large-scale Parallel Programs Using Two Nodes**

*Yayu Guo, Fang Lin, Yi Liu, Depei Qian*

**A Co-location-based Approach for Business Site Selection Using Ontologies**

*Xuguang Bao, Lizhen Wang*

**Working Set Size Estimation with Hugepages in Virtualization**

*Jingyuan Hu, Xiaokuang Bai, Yingwei Luo, Xiaolin Wang, Zhenlin Wang*

**Web Service Recommendation via Combining Doc2Vec-based Functionality Clustering and DeepFM-based Score Prediction**

*Xiangping Zhang, Jianxun Liu, Buqing Cao, Qiaoxiang Xiao, Yiping Wen*

**Maximizing influence propagation in networks by user-relational iterative ranking algorithm**

*Wenbin Yao, Lijuan Zhang, Xiaoyong Li*

**Session 4D: SpaCCS&BDCloud (St Kilda)**

**Session Chair: Pascal Oser**

**Identifying Devices of the Internet of Things using Machine Learning on Clock Characteristics**

*Pascal Oser, Frank Kargl and Stefan Lüders*

**A Systematic Mapping Study on Security Requirements Engineering Frameworks for Cyber-Physical Systems**

*Shafiq Rehman, Volker Gruhn, Saad Shafiq and Irum Inayat*

**Processing Analysis of Confidential Modes of Operation**

*Yasir Nawaz, Lei Wang, Kamel Ammour*

**Towards New Privacy Regulations in Europe: Users' Privacy Perception in Recommender Systems**

*Itishree Mohallick, Katrien De Moor, Özlem Özgöbek and Jon Atle Gulla*

**SafeTECKS: Protect Data Safety in Things-Edge-Cloud Architecture with Knowledge Sharing**

*Shangfo Huang, Weifeng Lv, Zhipu Xie, Bo Huang and Bowen Du*

**Session 4E: SocialCom&SpaCCS (Elwood)**

**Session Chair: Michael Sonntag**

**A Privacy-preserving Attribute-Based Access Control Scheme**

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

**Checking an Authentication of person depends on RFID with thermal image**

*Ahmed Al-Sudani, Sheng Gao and Sheng Wen*

**Integrating ant colony algorithm and node centrality to improve prediction of information diffusion in social networks**

*Kasra Majbouri Yazdi, Adel Majbouri Yazdi, Saeid Khodayi and Jingyu Hou*

**NTRDM: A new bus network optimization method based on taxi passenger flow conversion**

*Bo Huang, Guixi Xiong, Zhipu Xie, Shangfo Huang and Bowen Du*

**BDCP: A Framework for Big Data Copyright Protection Based on Digital Watermarking**

*Jingyue Yang, Haiquan Wang, Zhaoyi Wang and Jieyi Long*

**Session 5A: ISPA (Brighton)**

**Session Chair: Yiping Teng**

**Performance Optimization of Large Files Writes to Ceph Based on Multiple PipeLines Algorithm**

*zhan ke, xu lili, yuan zimu, zhang weijuan*

**Fast Real-Time Scheduling for Ethernet-based Train Control Networks**

*Qinghan Yu, Tian Wang, Xibin Zhao, Hai Wan, Yue Gao, Chenyang lu, Ming Gu*

**DEARS: A Deep Learning Based Elastic and Automatic Resource Scheduling Framework for Cloud Applications**

*Muhammad Hassan, Haopeng Chen, Yutong Liu*

**Secure Spatial Network Queries on Cloud Platform**

*Yiping Teng, Jinyan Liu, Xiaoting Liu, Guohui Ding, Chunlong Fan*

**A Demand-driven Pointer-range Analysis Technique for Data Transmission Optimization**

*Bo Zhao, Xiaoyan Xu, Peng Liu, Yingying Li, Rongcai Zhao, Ramin Yahyapour*

**Session 5B: ISPA 2018 (Hampton)**

**Session Chair: Ke Yu**

**MalFilter: A Lightweight Real-time Malicious URL Filtering System in Large-scale Networks**

*Guolin Tan, Peng Zhang, Qingyun Liu, Xinran Liu, Chungze Zhu, Chao Zheng*

**Cymbalo: An Efficient Graph Processing Framework for Machine Learning**

*Xinhui Tian, Biwei Xie, Jianfeng Zhan*

**Contract-Based Demand Response Model for High Performance Computing Systems**

*Kishwar Ahmed, Jesse Bull, Jason Liu*

**Towards Energy-Efficient Scheduling with Batch Processing for Instance-Intensive Cloud Workflows**

*Zhibin Wang, Yiping Wen, Jinjun Chen, Buqing Cao*

**Fisher Discriminant Analysis Random Forest for Online Class Incremental Learning**

*Wang Xiong, Yijie Wang, Li Cheng*

**Session 5C: ISPA 2018 (Sandringham)**

**Session Chair: Muhammad Islam**

**Accelerating Lattice QCD on Sunway many-core processor**

*Zhang Zengxiao, Luan Zhongzhi, Gong Ming, Xu Shun*

**Secure Virtual Machine Placement and Load Balancing Algorithms with High Efficiency**

*Yuchen Wong, Qingni Shen*

**PacketCache: Improving OS Stacks for Streaming with Identical Contents**

*Xiaohui Luo, Fengyuan Ren, Danfeng Shan, Tong Zhang*

**Energy-efficient strategy for placement of online services on dynamic availability resources in volunteer Cloud**

*Omar Ben Maaouia, Hazem Fkaier, Christophe Cerin, Mohamed Jemni*

**Optimizing tiled matrix-matrix product according to cache performance enhancement**

*Emna HAMMAMI, Yosr SLAMA*

**Session 5D: SpaCCS (St Kilda)**

**Session Chair: Abdullah Salamai**

**An efficient provable multi-copy data possession scheme with data**

*Zuojie Deng, Shuhong Chen, Xiaolan Tan, Dan Song and Fan Wu*

**Risk Identification-based Association Rule Mining for Supply Chain Big Data**

*Abdullah Salamai, Morteza Saberi, Omar Hussain and Elizabeth Chang*

**TrCMP: An App Usage Inference Method for Mobile Service Enhancement**

*Xuan Zhao, Md Zakirul Alam Bhuiyan, Lianyong Qi, Hongli Nie, Wajid Rafique and Wanchun Dou*

**A High-performance Adaptive Strategy of Container Checkpoint Based on Pre-replication**

*Shuo Zhang, Ningjiang Chen and Hanlin Zhang*

**Cloud Enabled e-glossary System: A Smart Campus Perspective**

*Musaddiq Majid Khan Al-Nadwi, Nadia Refat, Nafees Zaman, Md Arafatur Rahman, Md Zakirul Alam Bhuiyan and Ramdan Bin Razali*



**Session 5E: SpaCCS ((Elwood)**  
**Session Chair: Tariq Mahmood**

**A Dynamic Integrity Transitivity model for the Cloud**

*Rongyu He, Haonan Sun and Yong Zhang*

**Enhancing Dependability in Big Data Analytics Enterprise Pipelines**

*Tariq Mahmood, Hira Zahid and Nassar Ikraam*

**Overview of Logistics Equilibrium Distribution Networks System: An Urban Perspective**

*Wang Wei, Md Arafatur Rahman, Md Jahan Ali, Md Zakirul Alam Bhuiyan and Liu Yao*

**CRAB: Blockchain based Criminal Record Management System**

*Abdullah Al Omar, Maisha Afrida Tasnim, Mohammad Rahman and Md Zakirul Alam Bhuiyan*

**Secure Passive Keyless Entry and Start System Using Machine Learning**

*Usman Ahmad, Hong Song, Awais Bilal, Mamoun Alazab and Alireza Jolfaei*

**Session 6A: ISPA (Brighton)**

**Session Chair: Deepak Puthal**

**Deep Learning for Phishing Detection**

*wenbin yao, yuanhao ding, xiaoyong li*

**Making Userspace TCP Stacks Transparent to Applications**

*Xiaohui Luo, Fengyuan Ren, Dong Liu*

**Robot Patrol Path Planning Based on Combined Deep Reinforcement Learning**

*Wenqi Li, Dehua Chen, Jiajin Le*

**DataFall: A Policy-driven Algorithm for Decentralized Placement and Reorganization of Replicated Data**

*Fereydoun Farrahi Moghaddam, Wubin Li, Abdelouahed Gherbi*

**An Extensible Search Engine Platform for Efficiency Research**

*Zhaohua Zhang, Naiyong Ao, Xiaoguang Liu, Gang Wang*

**S2R: Service trading based response time optimization in mobile edge computing**

*Pritish Mishra, Mayank Tiwary, Laurence T. Yang, Deepak Puthal*

**HLS-based Performance and Resource Optimization of Cryptographic Modules**

*Arthur Silitonga, Florian Schade, Guanru Jiang, Juergen Becker*

**Session 6B: ISPA 2018 (Hampton)**

**Session Chair: Zainab Abbaz**

**CRSP: Network Congestion Control Through Credit Reservation**

*Tianye Yang, Dezun Dong, Cunlu Li, Liqun Xiao*

**Enhanced Self-coding for Available Memcached**

*Liangfeng Cheng, Yuchong Hu, Wei Wei, Renzhi Xiao*

**A Novel Approach for Identifying Lateral Movement Attacks Based on Network Embedding**

*Mingyi Chen, Yepeng Yao, Junrong Liu, Bo Jiang, Liya Su and Zhigang Lu*

**A Parallel Analysis Algorithm for Instruction Dependence Graph based on Multithreading**

*Lei Wang, Yu Deng, Rui Gong, Wei Shi, Zhenyu Zhao, Qiang Dou*

**Deadlock-Free Adaptive Routing Based on The Repetitive Turn Model for 3D Network-on-Chip**

*Yuan Cai, Dong Xiang, Xiang Ji*

**To Compress, or Not to Compress: Characterizing Deep Learning Model Compression for Embedded Inference**

*Qing Qin, Jie Ren, Jialong Yu, Ling Gao, Hai Wang, Jie Zheng, Yansong Feng, Jianbin Fang, Zheng Wang*

**Evaluation of the Use of Streaming Graph Processing Algorithms for Road Congestion Detection**

*Zainab Abbas, Thorsteinn Thorri Sigurdsson, Ahmad Al-Shishtawy, Vladimir Vlassov*

**Session 6C: ISPA 2018 (Sandringham)**

**Session Chair: Yuanyuan Sun**

**Dynamic Data Histogram Publishing Based On Differential Privacy**

*Ruichao Gao, xuebin Ma*

**A CTR Prediction Approach for Advertising based on Embedding Model and Deep Learning**

*Zilong Jiang, Shu Gao, Guanyu Wang, Jinpeng Yuan, Abdoulaye Sidibe*

**Tearing Down the face of Algorithmic Complexity Attacks for DPI Engines**

*Likun Liu, Jiantao Shi, Hongli Zhang, Xiangzhan Yu*

**Effective phishing website detection based on improved BP neural network and dual feature evaluation**

*Erzhou Zhu, Dong Liu, Feng Liu*

**Effective Clustering Analysis Based on New Designed Clustering Validity Index and Revised K-means Algorithm for Big Data**

*Erzhou Zhu, Peng Wen, Feng Liu*

**An On-the-fly Scheduling Strategy for Distributed Stream Processing Platform**

*Wen'an Wang, Chuang Zhang, Xiaojun Chen, Zhao Li, Hong Ding, Xin Wen*

**Routing and Spectrum Allocation for Time Varying Traffic by Artificial Bee Colony Algorithm in Elastic Optical Networks**

*Gang Xu, Xiaoxiao Li, Guojun Yuan, Zhan Wang, Guangming Tan, Xuejun An*

**Session 6D: SpaCCS (St Kilda)**

**Session Chair: Ke Yu**

**The Safety Detection for Double Tapered Roller Bearing Based on Deep Learning**

*Jie Tao, Shaobo Zhang and Dalian Yang*

**Malicious domain name recognition based on deep neural networks**

*Xiaodan Yan, Baojiang Cui and Jianbin Li*

**Indoor Interference Classification Based on WiFi Channel State Information**

*Zhuoshi Yang, Yanxiang Wang, Lejun Zhang and Yiran Shen*

**Secure and Privacy Preserving RFID based Access Control to Smart Buildings**

*Ahmed Al-Sudani, Sheng Wen and Bo Liu*

**A Four-stage Hybrid Feature Subset Selection Approach for Network Traffic Classification based on Full Coverage**

*Jingbo Xia, Jian Shen and Yaoxiang Wu*

**Event-triggered Fault-detection Filter using Coordinate Transformation Approach for Time-varying Stochastic Systems**

*Yunji Li, Xu Liu, Yi Gao and Li Peng*

**Session 6E: SpaCCS (Elwood)**

**Session Chair: Muhammad Islam**

**Matching Sensor Ontologies through Compact Evolutionary Tabu Search Algorithm**

*Xingsi Xue and Shijian Liu*

**Answering the Min-cost Quality-aware Query on Multi-sources in Sensor-Cloud Systems**

*Mohan Li, Yanbin Sun and Zhihong Tian*

**Application of Sensor-Cloud Systems: Smart Traffic Control**

*Chaogang Tang, Xianglin Wei and Jin Liu*

**Balanced Iterative Reducing and Clustering Using Hierarchies with Principal Component Analysis (PBirch) for Intrusion Detection over Big Data in Mobile Cloud Environment**

*Kai Peng, Xiaolong Xu, Lixin Zheng, Tao Lin and Victor C.M. Leung*

**Strategy-Proof Mechanism for Provisioning Non-obedient Resources Without Payment**

*Wei Song, Min Li and Shun You*

**Session 7A: ISPA (Brighton)**  
**Session Chair: Deepak Puthal**

**An Effective Neural Network Phishing Detection Model Based on Optimal Feature Selection**

*Erzhou Zhu, Chengcheng Ye, Feng Liu*

**A Periodic Task-Oriented Job Scheduling Architecture in Cloud Computing**

*peng zhang, lichao xing*

**Bayesian networks-based data publishing method using smooth sensitivity**

*Mingzhu Li, Xuebin Ma*

**Achieving Privacy-Preserving CP-ABE Access Control with Multi-Cloud**

*Chunhua Li, Jinbiao He, Cheng Lei, Chan Guo, Ke Zhou*

**2D Otsu segmentation algorithm improvement based on FOCPSO**

*Yingjie Zhang, Liang Zeng, Ying Zhang, Jie Meng*

**Delay-aware Resource Allocation for Data Analysis in Cloud-Edge System**

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**A Business Site Selection System Using Co-locations and Ontologies**

*Xuguang Bao and Lizhen Wang*

**Session 7B: ISPA 2018 (Hampton)**

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**An Efficient Checkpoint and Recovery Mechanism for Real-Time Embedded Systems**

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**Efficient VM Selection Heuristics for Dynamic VM Consolidation in Cloud Data centers**

*Hammad Qaiser, Gao Shu*

**Redis++: A High Performance In-Memory Database Based on Segmented Memory Management and Two-Level Hash Index**

*peng zhang, lichao xing, guolin tan, chuang zhang*

**An Optimized Assisted Hybridcast Transmission Scheme in Mobile Wireless Relay Networks**

*Hanwu Wang, Weijia Jia*

**FATES: A Framework with Adaptive Track-Explore Strategy for Moving Targets Search by a FANET**

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**Peapods: OS-Independent Memory Confidentiality for Cryptographic Engines**

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**Refactoring OpenMP Code Based on MapReduce Model**

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Georgios Lappas	Technological Educational Institute (T.E.I.) of Western Macedonia, Greece
Guido Barbian	Leuphana University Lueneburg, Germany
Gang Li	Deakin University, Australia

Hamid Rabiee	Purdue University, USA
Haifeng Shen	Flinders University, Australia
Hsin-Chang Yang	National University of Kaohsiung, Taiwan
Iraklis Varlamis	Harokopio University of Athens, Greece
Jason Jung	Yeungnam University, South Korea
Jan Treur	Vrije University, the Netherlands
Jacqui Taylor	Bournemouth University / Psychology Research Group, UK
Jerome Dauw-Song Zhu	National Dong-Hwa University, Taiwan
Jerzy Surma	Warsaw School of Economics, Poland
John Korah	The University of Teas at EL Paso, USA
John Tangney	Office of Naval Research, USA
Jon Dron	Athabasca University, Canada
Karl Cox	University of Brighton, UK
Katarzyna Musial	King's College London, UK
Keisuke Nakao	University of Hawaii at Hilo, USA
Levent Yilmaz	Auburn University, USA
Lilia Georgieva	Heriot-Watt University, UK
Ling-Jyh Chen	Academia Sinica, Taiwan
Lorna Uden	Staffordshire University, UK
Magdalini Eirinaki	San Jose State University, USA
Man-Kwan Shan	National Chengchi University, Taiwan
Marenglen Biba	University of New York Tirana, Albania
Mark Manulis	TU Darmstadt & CASED, Germany
Mehmet Hadi Gunes	University of Nevada, USA
Mauro Conti	Vrije Universiteit Amsterdam, Netherlands
Mehmet Kaya	Firat University, Turkey
Meng Wang	Hefei University of Technology, China
Mehmet Tan	TOBB ETU, Turkey
Min-Yuh Day	Tamkang University, Taiwan
Michael Fire	University of Washington, USA
Mikołaj Morzy	Poznań University of Technology, Poland
Min-Ling Zhang	Southeast University, China
Mi-Yen Yeh	Academia Sinica, Taiwan
Mohamed Chetouani	Pierre and Marie Curie University, France
Nick Letch	University of Western Australia
Nima Dokoohaki	Royal Institute of Technology (KTH) - Stockholm, Sweden
Piotr Bródka	Wroclaw University of Technology, Poland
Panagiotis Karampelas	Hellenic American University, USA
Paul Johannesson	Stockholm University
Peter Mutschke	GESIS - Leibniz Institute for the Social Sciences - Bonn, Germany
Ralf Klamma	RWTH Aachen University, Germany



Ron Sun	Rensselaer Polytechnic Institute, USA
Chuan Shi	BUPT, China
Sangkeun Lee	Korea University, South Korea
Scott Piao	Lancaster University, UK
Shou-de Lin	National Taiwan University, Taiwan
Sotiris Ioannidis	FORTH, Greece
Soon Ae Chun	CUNY, USA
Tzung-Pei Hong	National Univesity of Kaohsiung, Taiwan
Ulrike Lucke	University of Potsdam, Germany
Uwe Glaesser	Simon Fraser University, Canada
William Wallace	Rensselaer Polytechnic Institute, USA
Wai-Tat Fu	University of Illinois at Urbana-Champaign, USA
Wenjun Zhou	Rutgers Business School, USA
Xumin Liu	Rochester Institute of Technology, USA
Yves-Alexandre de Montjoye	MIT Media Lab, USA
Yu Zhang	Trinity University, USA
Yun Huang	Northwestern University, USA

## Appendix 1. Location of conference venue:

Address: Novotel Melbourne St Kilda, 16 The Esplanade, ST KILDA, VIC 3182, Australia  
Phone: (+61) (0)3 9525 5522

