

**The 12th IEEE International Conference on  
Trust, Security and Privacy in Computing and  
Communications (IEEE TrustCom-13)**

**The 11th IEEE International Symposium on  
Parallel and Distributed Processing with  
Applications (ISPA-13)**

**The 12th IEEE International Conference on  
Ubiquitous Computing and Communications  
(IUCC-2013)**

16-18 July, 2013

Melbourne, Australia

Conference Program and Information Booklet



**Organizers and Sponsors**

Deakin University, School of Information Technology, Network Security and Computing Lab  
IEEE, IEEE Computer Society, IEEE Technical Committee on Scalable Computing, Trend Micro



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## TrustCom / ISPA / IUCC 2013 Program Overview

Monday 15 July 2013	
15:00-17:30	Registration (Parkview Lounge, 4 <sup>th</sup> Floor)
18:00-21:00	Welcome Reception (Parkview Lounge & Pool Deck)

Tuesday 16 July 2013								
08:00-17:30	Registration (Parkview Lounge, 4 <sup>th</sup> Floor)							
08:00-08:30	Opening and Welcome (Rathdowne/Bouverie Rooms)							
08:30-09:20	Keynote 1: Prof Bhavani Thuraisingham, Cloud-Centric Assured Information Sharing (Rathdowne/Bouverie Rooms)							
09:20-10:10	Keynote 2: Prof Albert Zomaya, Cloud Bursting for Cost-Performance Efficiencies (Rathdowne/Bouverie Rooms)							
10:10-10:30	Morning Tea (Parkview Lounge, Pool Deck & Blue's Bar & Grill)							
10:30-12:30	Session 1A: TrustCom (Rathdowne)	Session 1B: TrustCom (Bouverie)	Session 1C: TrustCom (Lygon)	Session 1D: TrustCom (Lincoln)	Session 1E: ISPA (Argyle)	Session 1F: TrustID (Queensberry)	Session 1G: IUCC (Pelham)	Session 1H: TSCloud (Faraday)
12:30-13:30	Lunch (Parkview Lounge, Pool Deck & Blue's Bar & Grill)							
13:30-14:20	Keynote 3: Prof Gene Tsudik, Secure and Minimal Architecture for Remote Attestation of Embedded Devices (Rathdowne/Bouverie Rooms)							
14:20-15:10	Keynote 4: Prof Yi Pan, Cloud Computing Programming Models - Challenges and Solutions (Rathdowne/Bouverie Rooms)							
15:10-15:30	Afternoon Tea (Parkview Lounge, Pool Deck & Blue's Bar & Grill)							
15:30-17:30	Session 2A: TrustCom (Rathdowne)	Session 2B: TrustCom (Bouverie)	Session 2C: TrustCom (Lygon)	Session 2D: TrustCom (Lincoln)	Session 2E: ISPA (Argyle)	Session 2F: TrustID (Queensberry)	Session 2G: IUCC (Pelham)	Session 2H: UbiSafe (Faraday)

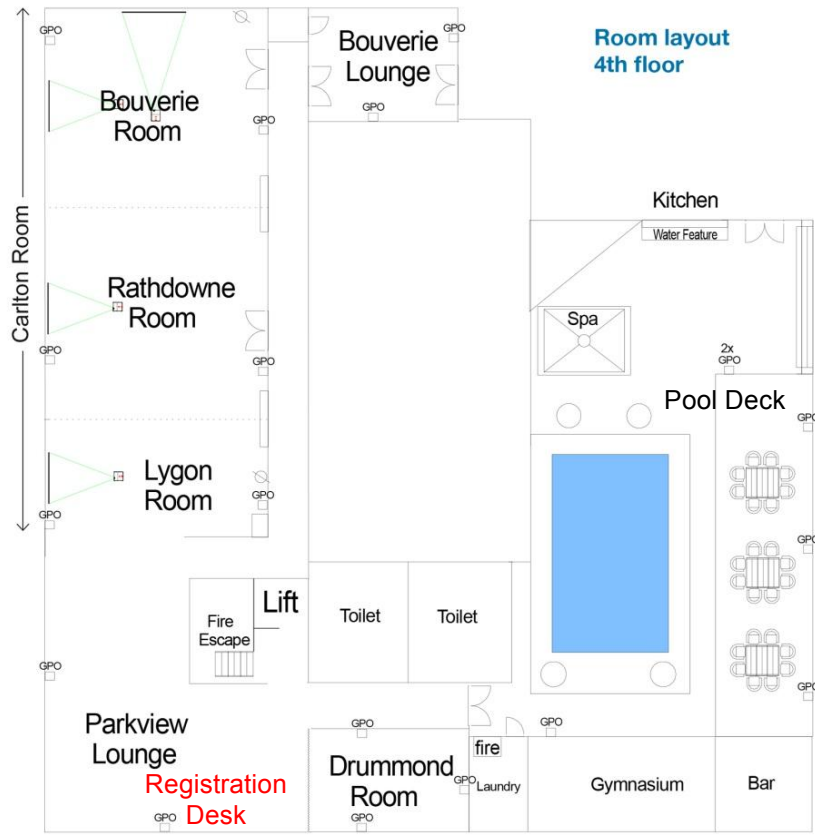
## Wednesday 17 July 2013

08:30-17:30	Registration (Parkview Lounge, 4 <sup>th</sup> Floor)							
08:30-09:20	Keynote 5: Prof Hai Jin, Cloud Security: Challenge and Practice (Rathdowne/Bouverie Rooms)							
09:20-10:10	Keynote 6: Dr Jonathan Oliver, On Cybercriminal Professionalism (Rathdowne/Bouverie Rooms)							
10:10-10:30	Morning Tea (Parkview Lounge, Pool Deck & Blue's Bar & Grill)							
10:30-12:30	Session 3A: TrustCom (Rathdowne)	Session 3B: TrustCom (Bouverie)	Session 3C: TrustCom (Lygon)	Session 3D: TrustCom (Lincoln)	Session 3E: ISPA (Argyle)	Session 3F: ISPA (Queensberry)	Session 3G: IUCC (Pelham)	Session 3H: ACS (Faraday)
12:30-13:30	Lunch (Parkview Lounge, Pool Deck & Blue's Bar & Grill)							
13:30-14:20	Keynote 7: Prof Vijay Varadharajan, Living Dangerously in the Cyber World (Rathdowne/Bouverie Rooms)							
14:20-15:10	Keynote 8: Prof Ivan Stojmenovic, IoT/CPS: M2M Communication, Actuation and Coordination Challenges (Rathdowne/Bouverie Rooms)							
15:10-15:30	Afternoon Tea (Parkview Lounge, Pool Deck & Blue's Bar & Grill)							
15:30-17:30	Session 4A: TrustCom (Rathdowne)	Session 4B: TrustCom (Bouverie)	Session 4C: TrustCom (Lygon)	Session 4D: TrustCom (Lincoln)	Session 4E: ISPA (Argyle)	Session 4F: ISPA (Queensberry)	Session 4G: IUCC (Pelham)	Session 4H: WNM (Faraday)
18:00-21:30	Conference Banquet (Rathdowne/Bouverie/Lygon Rooms)							

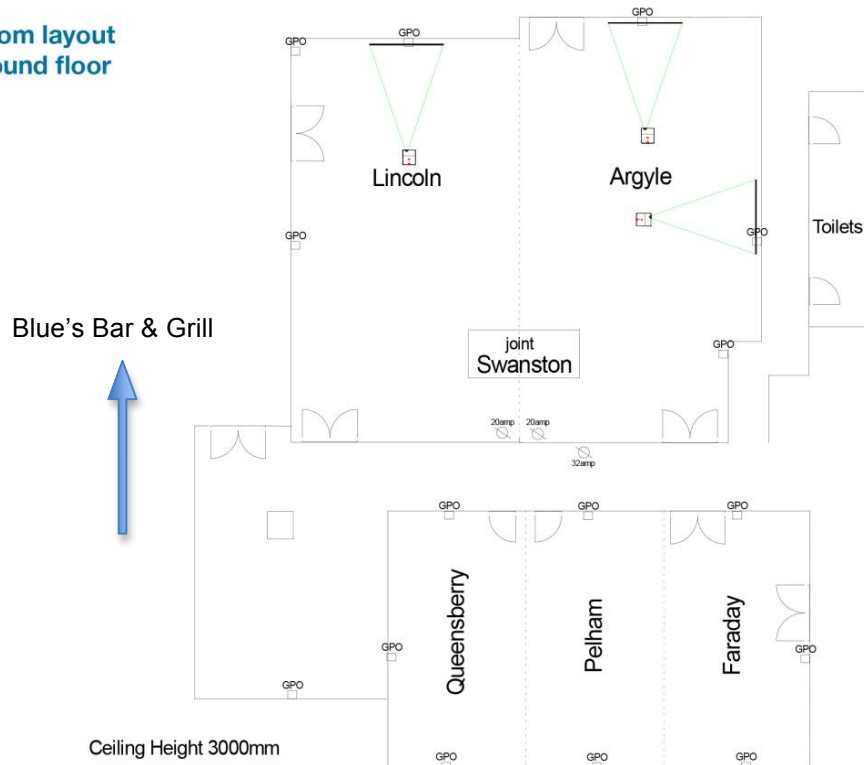
## Thursday 18 July 2013

08:30-17:30	Registration (Parkview Lounge, 4 <sup>th</sup> Floor)							
08:30-09:20	Keynote 9: Prof Geyong Min, Performance Modelling and Analysis of Data-Centre Networks under Bursty and Batch Arrival Traffic (Rathdowne/Bouverie Rooms)							
09:20-10:10	Keynote 10: Prof Laurence T. Yang, A Data-as-a-Service Framework for IoT Big Data (Rathdowne/Bouverie Rooms)							
10:10-10:30	Morning Tea (Parkview Lounge, Pool Deck & Blue's Bar & Grill)							
10:30-12:30	Session 5A: TrustCom (Rathdowne)	Session 5B: TrustCom (Bouverie)	Session 5C: TrustCom (Lygon)	Session 5D: ISPA (Lincoln)	Session 5E: ISPA (Argyle)	Session 5F: IWCDM (Queensberry)	Session 5G: IUCC (Pelham)	Session 5H: M2A2 (Faraday)
12:30-13:30	Lunch (Parkview Lounge, Pool Deck & Blue's Bar & Grill)							
13:30-14:20	Keynote 11: A/Prof Jinjun Chen, Privacy preserving in Cloud with Big Data applications (Rathdowne/Bouverie Rooms)							
14:20-15:10	Panel: Grand Challenges from Big Data: Processing, Communication, Security, and Privacy (Rathdowne/Bouverie Rooms)							
15:10-15:30	Afternoon Tea (Parkview Lounge, Pool Deck & Blue's Bar & Grill)							
15:30-17:30	Session 6A: TrustCom (Rathdowne)	Session 6B: TrustCom (Bouverie)	Session 6C: ISPA (Lygon)	Session 6D: ISPA (Lincoln)	Session 6E: ISPA (Argyle)	Session 6F: IWCDM (Queensberry)	Session 6G: ISSR/SPIoT (Pelham)	Session 6H: M2A2 (Faraday)

# Conference Rooms Floor Plan



## Room layout ground floor



## **Message from TrustCom-2013 General Chairs**

As the General Chairs and on behalf of the Organizing Committee of the 12th IEEE International Conference on Trust, Security and Privacy in Computing and Communications (TrustCom-2013), we would like to express our cordial welcome and gratitude for all participants that attend the conference and associated workshops/symposia in Melbourne, Australia, 16 - 18 July, 2013.

The beautiful Melbourne has been constantly ranked as the world's most livable city in ratings published by the Economist Group's Intelligence Unit. We are pleased that the TrustCom conference is held in Melbourne this year. TrustCom has become a premier international conference in the trust, security and privacy areas, aiming at bringing together researchers and practitioners working on trusted computing and communications to present and discuss emerging ideas and trends in this highly challenging research field. TrustCom-2013 has attracted many high-quality research papers which highlight the foundational work that strives to push beyond limits of existing technologies, including experimental efforts, innovative systems, and investigations that identify weaknesses in the existing trust, security and privacy services.

TrustCom-2013 is sponsored by IEEE, IEEE Computer Society, IEEE Technical Committee on Scalable Computing (TCSC), and School of Information Technology, Deakin University. TrustCom-2013 consists of the main conference and 7 international workshops/symposia.

Many individuals have contributed to the success of this high caliber international conference. We would like to express our special appreciation to Guojun Wang and Laurence T. Yang, the Steering Committee Chairs, for giving us this opportunity to hold this prestigious conference and for their guidance on the conference organization. Special thanks to the Program Chairs, Yang Xiang, Bhavani Thuraisingham, and Gregorio Martinez, for their outstanding work on the technical program. Thanks also to the Workshop Chairs, Nektarios Georgalas, Yulei Wu, and Matthew Smith, for their excellent work in organizing the attractive workshops/symposia. We would like to give our thanks to all the members of the Organizing Committee and Program Committee members for their efforts and support.

We are grateful to all the authors who submitted their papers to the TrustCom-2013 conference and workshops/symposia. We truly hope all the participants find the conference stimulating and constructive and at the same time enjoy the stay in Melbourne.

**Wanlei Zhou**, Deakin University, Australia  
**Audun Josang**, University of Oslo, Norway  
**General Chairs of TrustCom-2013**

## Message from TrustCom-2013 Program Chairs

On behalf of the Program Committee of the 12th IEEE International Conference on Trust, Security and Privacy in Computing and Communications (TrustCom-2013), we would like to welcome you to join the conference in Melbourne, Australia.

TrustCom-2013 aims at bringing together researchers and practitioners in the world from both academia and industry who are working on trusted computing and communications in computer systems and networks. The conference will feature keynote speeches, a panel, technical presentations, symposiums and workshops, where the technical presentations from both the research community and industry will cover various aspects including trust, security, privacy, reliability, dependability, survivability, availability, and fault tolerance.

TrustCom-2013 received 382 submissions for the main conference. All submissions received at least three reviews from a high-quality review process involving 230 program committee members and 68 additional reviewers. According to the review results, 106 papers are selected for oral presentation at the conference, giving an acceptance rate of 27.7%.

We would like to offer our gratitude to the Steering Committee Chairs, Guojun Wang and Laurence T. Yang, and the General Chairs, Wanlei Zhou and Audun Josang, for their excellent support and invaluable suggestions to make the success of the final program. In particular, we would like to thank all researchers and practitioners who submitted their manuscripts, and thank the Program Committee members and the additional reviews for their tremendous efforts and timely reviews.

We sincerely hope that the conference will provide a very good opportunity for you to share your brilliant ideas with each other. Enjoy the conference, both technically and socially.

**Yang Xiang**, Deakin University, Australia

**Bhavani Thuraisingham**, The University of Texas at Dallas, USA

**Gregorio Martinez**, University of Murcia, Spain

**Program Chairs of TrustCom-2013**



## Message from TrustCom-2013 Steering Chairs

On behalf of the IEEE TrustCom Steering Committee, we welcome you to attend the 12th IEEE International Conference on Trust, Security and Privacy in Computing and Communications (TrustCom- 2013), 16-18 July, 2013, Melbourne, Australia.

This conference aims at bringing together researchers and practitioners in the world working on trusted computing and communications, with regard to trust, security, privacy, reliability, dependability, survivability, availability, and fault tolerance aspects of computer systems and networks, and providing a forum to present and discuss emerging ideas and trends in this highly challenging research field.

Many thanks to many people who have made this conference a great success! First, we would like to say special thanks to Wanlei Zhou and Yang Xiang from the Deakin University, Australia, who have been serving as the leading General Chair and Program Chair of TrustCom-2013. They are so enthusiastic for this conference. From the very beginning when they decided to host this conference and throughout the months of days that they have been running this conference, we can see that this conference will be no problem toward a great success!

Then, we would like to thank the powerful organizing committee, including the General Co-Chair (Audun Josang, University of Oslo, Norway), the Program Co-Chairs (Bhavani Thuraisingham, The University of Texas at Dallas, USA, and Gregorio Martinez, University of Murcia, Spain), the Workshop Co-Chairs (Nektarios Georgalas, British Telecom, UK, Yulei Wu, Chinese Academy of Sciences, China, and Matthew Smith, Leibniz Universitat Hannover, Germany), the Publicity Co-Chairs (Kejie Lu, University of Puerto Rico at Mayaguez, Puerto Rico, Roberto Di Pietro, Roma Tre University of Rome, Italy, and Xiaofei Liao, Huazhong University of Science and Technology, China), the Publication Co-Chairs (Jemal Abawajy, Deakin University, Australia, and Muhammad Khurram Khan, King Saud University, Kingdom of Saudi Arabia).

Finally, we would like to take this opportunity to thank all the members of the steering committee and technical program committee, as well as all of the authors who have submitted papers to this conference.

**Guojun Wang**, Central South University, China  
**Laurence T. Yang**, St Francis Xavier University, Canada  
**Steering Chairs of IEEE TrustCom-2013**

## Message from TrustCom-2013 Workshop/Symposium Chairs

Welcome to the workshops and Symposia held in conjunction with the 12th IEEE International Conference on Trust, Security and Privacy in computing and Communications held in Melbourne, Australia on 16-18 July, 2013. The program of this year consists of two workshops and five symposia that cover a wide range of research topics addressing issues and challenges on the leading edge of research on trust, security and privacy in computing and communications:

1. The 3rd IEEE International Symposium on Trust and Identity in Mobile Internet, Computing and Communications (TrustID 2013)
2. The 3rd IEEE International Symposium on Trust and Security in Cloud Computing (IEEE TSCloud 2013)
3. The 5th IEEE International Workshop on Security in e-Science and e-Research (ISSR 2013)
4. The 5th IEEE International Symposium on UbiSafe Computing (IEEE UbiSafe-13)
5. The 3rd IEEE International Symposium on Security and Privacy in Internet of Things (IEEE SPIoT-13)
6. The 3rd IEEE International Symposium on Anonymity and Communication Systems (IEEE ACS-13)
7. The 1st International Workshop on Cloud Data Mining (IWCDM-2013)

These workshops are valuable complement to the overall scope of TrustCom-2013 and give additional values and interests. We hope that all of the selected papers will have a significant impact on future research in the respective research.

We offer our sincere gratitude to the workshop organizers for their hard work in designing the call-for-papers, assembling the program committee, managing the peer-review process for the selection of papers, and planning the workshop program. We are grateful to the workshop program committees, external reviewers, session chairs, contributing authors, and attendees. Our special thanks go to the Organization Committees of TrustCom-2013 for their strong support.

Finally, we hope that you find the workshops and symposia quite interesting and stimulating, and also enjoy TrustCom-2013 and the beautiful city of Melbourne, Australia.

**Nektarios Georgalas**, British Telecom, UK  
**Yulei Wu**, Chinese Academy of Sciences, China  
**Matthew Smith**, Leibniz Universitat Hannover, Germany  
**Workshop Chairs of TrustCom-2013**

## **Message from the ISPA 2013 General Chairs**

On behalf of the organizing committees, it is our pleasure to welcome you to the 11th IEEE International Symposium on Parallel and Distributed Processing with Applications (ISPA-2013), held in Melbourne, Australia, 16-18 July, 2013.

ISPA-2013 is the next event in a series of highly successful symposia on parallel and distributed computing and networking, previously held as ISPA-2012 (Leganes, Spain), ISPA-2011 (Busan, Korea), ISPA-2010 (Taipei, Taiwan), ISPA-2009 (Chengdu, China), ISPA-2008 (Sydney, Australia), ISPA-2007 (Niagara Falls, Canada), ISPA-2006 (Sorrento, Italy), ISPA-2005 (Nanjing, China), ISPA-2004 (Hong Kong), and ISPA-2003 (Aizu, Japan).

This year the value, breadth, and depth of the ISPA symposium continues to strengthen and grow in importance for both the academic and industrial communities. This strength is evidenced this year by having a high number of submissions resulting in a selective program.

We sincerely thank all of our chairs and committee members, in particular, the Program Chairs, Ivan Stojmenovic, University of Ottawa, Canada, Michael Hobbs, Deakin University, Australia, and Lorenzo Mossucca, Istituto Superiore Mario Boella (ISMB), Italy. Without their hard work, the success of ISPA-2013 would not have been possible. We hope you find ISPA-2013 enjoyable and please let us know if you have any suggestions for improvement.

**Wanlei Zhou**, Deakin University, Australia  
**Andrzej Goscinski**, Deakin University, Australia  
**Christine Morin**, INRIA, France  
**General Chairs of ISPA-2013**

## Message from the ISPA 2013 Program Chairs

Welcome to the 11<sup>th</sup> IEEE International Symposium on Parallel and Distributed Processing with Applications (ISPA-2013), held in Melbourne, Australia, 16-18 July, 2013. ISPA-2013 fosters state-of-the-art research in the area of parallel and distributed computing and networking, including reliability, fault tolerance, and security issues as well as algorithms and performance evaluation and measurement in parallel and distributed computing environments. ISPA-2013 also provides an opportunity for academic and industry professionals to discuss the latest issues and progress in the area of parallel and distributed computing and networking.

ISPA-2013 received a total of 137 paper submissions from more than 50 countries. Out of these, after a rigorous peer review process, we accepted 56 articles for the ISPA-2013 proceedings, published by the IEEE. All submitted papers have undergone reviews by three or more reviewers from the technical program committee, which consists of leading researchers from around the globe. Without their hard work, achieving such a high-quality proceedings would not have been possible. We take this opportunity to thank them for their great support and cooperation.

The program is completed with the following international workshops:

1. The 4<sup>th</sup> International Workshop on Wireless Networks and Multimedia (WNM-2013)
2. The 5<sup>th</sup> IEEE International Workshop on Multicore and Multithreaded Architectures and Algorithms (M2A2 2013)

We would like to express our thanks to the organizing committees of these workshops for their hard work. Finally, we would like to thank all of you for your participation in the symposium, and also thank all the authors, reviewers, and organizing committee members. Thank you and enjoy the symposium!

**Ivan Stojmenovic**, University of Ottawa, Canada

**Michael Hobbs**, Deakin University, Australia

**Lorenzo Mossucca**, Istituto Superiore Mario Boella (ISMB), Italy

**Program Chairs of ISPA-2013**

## Message from IUCC-2013 General Chairs

On behalf of the Organizing Committee of the 12th IEEE International Conference on Ubiquitous Computing and Communications (IUCC), it is our great pleasure to welcome you to IUCC-2013, in Melbourne, a beautiful city in Australia.

The technologies of computing and communications have undergone a series of evolutionary innovation over the past decades and improved the quality of human life significantly. Ubiquitous Computing and Communications is a revolutionary paradigm that aims to provide pervasive and reliable computing solutions and communication services anytime and anywhere. It has drawn significant interests from both academia and industry and continues to attract tremendous research efforts due to its promising new business opportunity in information technology and engineering.

IUCC offers an important international platform and brings together the scientists, engineers, researchers, and students from academy and industry all over the world to share their latest work, exchange experiences and discuss the state-of-the-art challenges of ubiquitous computing and communications.

We would like to take this opportunity to thank the IUCC Organizing Committee for their hard and unfailing work. The Program Chairs, Yang Xiang, Deakin University, Australia, Ahmed Al-Dubai, Edinburgh Napier University, UK, and Yulei Wu, Chinese Academy of Sciences, China, handled all aspects of paper submission, coordinated the reviewing process, and created the program. All the committee members volunteered many hours and did a magnificent job!

Special thanks go to all the authors who submitted papers, and also to all those who attended this meeting. Their participation has made this event a truly worthwhile experience for us and for all of the organizers of IUCC-2013.

We hope that you enjoy the conference and your stay in Melbourne, Australia. If you have any questions, concerns, or comments, please do not hesitate to speak with us or any member of the Organizing Committee.

**Wanlei Zhou**, Deakin University, Australia

**Beniamino Di Martino**, Seconda Università di Napoli, Italy

**Geyong Min**, University of Bradford, UK

**General Chairs of IUCC-2013**

## Message from IUCC-2013 Program Chairs

On behalf of the Program Committee, it is our great pleasure to welcome you to the 12th IEEE International Conference on Ubiquitous Computing and Communications (IUCC-2013) held in Melbourne, a popular tourist city destination in Australia. The beautiful Melbourne has been constantly ranked as the world's most livable city in ratings published by the Economist Group's Intelligence Unit.

IUCC-2013 is in a series of highly successful international events, previously held as IUCC'2012 (Liverpool, UK, June 2012), IUCC'2011 (Dalian, China, August 2011), PME0-UCNS'2010 (Atlanta, USA, April 2010), PME0-UCNS'2009 (Rome, Italy, May 2009), PME0-UCNS'2008 (Miami, USA, April 2008), PME0-PDS'2007 (Long Beach, USA, March 2007), PME0-PDS'2006 (Rhodes Island, Greece, April 2006), PME0-PDS'2005 (Denver, USA, April 2005), PME0-PDS'2004 (Santa Fe, USA, April 2004), PME0-PDS'2003 (Nice, France, April 2003), PME0-PDS'2002 (Fort Lauderdale, USA, April 2002).

This year the Conference attracted 138 submissions addressing research challenges and advances towards the design, implementation and evaluation of ubiquitous computing and communications technologies, systems and applications. Although the reviewing process ran into a very tight schedule, most papers ended up with three reviews. In some cases we commissioned a fourth even fifth review where the opinion was divided. Based on the critical reviews of the referees and subsequent discussion among members of the Program Committee, 28 high-quality papers with authors from more than twenty countries over five continents (Oceania, North America, Europe, North Africa and Asia) were finally accepted, indicating an acceptance rate of less than 20.3%.

We are very grateful to the General Chairs, Wanlei Zhou, Deakin University, Australia, Beniamino Di Martino, Seconda Universita di Napoli, Italy, and Geyong Min, University of Bradford, UK, for their constant support and kind guidance that make the Conference possible. We highly appreciate the members of the Program Committee, as well as the additional reviewers they called upon, for their valuable time and profound expertise for reviewing papers. We would also like to thank all the authors who submitted papers to the Conference.

Finally, we hope that you enjoy the conference program, as well as your stay in Melbourne, Australia.

**Yang Xiang**, Deakin University, Australia

**Ahmed Al-Dubai**, Edinburgh Napier University, UK

**Yulei Wu**, Chinese Academy of Sciences, China

**Program Chairs of IUCC-2013**

## Message from the TrustID-2013 Symposium Chairs

Welcome to TrustID-2013! This is the Third International Symposium on Trust and Identity in Mobile Internet, Computing and Communications, being held in conjunction with IEEE TrustCom-2013 on July 16-18, 2013 in Melbourne, Australia.

Trust and identity have become important factors that influence the success of our mobile life. Researchers have already recognized the cruciality of trust and identity in order to achieve a trustworthy mobile system. But we are still facing a number of issues and challenges, e.g., trustworthiness of trust/identity management, usability and robustness of trust/identity management, trust and identity management with privacy enhancement, anonymous trust evaluation, privacy preserved trust authentication, etc. Due to dynamically changed computing environments, mobility, limited computing capability, restricted user interface for human-device interaction, instant communication characteristics and user privacy requirements, these challenges are more difficult to overcome in the context of mobile internet, computing and communications. Following the success of TrustID 2011 and TrustID 2012, TrustID 2013 continuously provides a forum for discussing the latest academic and industrial research results related to trust and identity in the area of mobile internet, computing and communications.

All manuscripts submitted to TrustID-2013 underwent a rigorous peer review process to ensure that accepted papers are of high quality. Specifically, each submission was reviewed by at least three referees from the technical program committee. The manuscripts were then ranked according to their original contribution, technical strength, presentation, literature review, practical significance and relevance to the main theme of the workshop. Finally, 10 papers were selected for presentation and inclusion in the conference proceedings.

We are very grateful to the IEEE TrustCom2013 Organizing Committee for giving us this opportunity to organize TrustID-2013. We deeply appreciate all Program Committee members for providing timely and in-depth reviews. Our thanks also go to the authors for their great contributions. Last but not least, we thank the attendees of this workshop and hope you will enjoy the program.

**Zheng Yan**, Xidian University, China/Aalto University, Finland

**Peng Zhang**, Xi'an University of Post and Telecommunications, China

**Valtteri Niemi**, Turku University, Finland

**Program Chairs of TrustID-2013 Symposium**

## Message from TSCLoud-2013 Chairs

Welcome to the 3rd IEEE TSCLoud 2013 Symposium, an integral symposium of IEEE TrustCom which brings together researchers with an interest in theoretical foundations and practical approaches to trust and security in cloud computing. This year, we received several high-impact, novel/adopted theories and paradigms that address mathematical and logical underpinnings in trust and security in cloud computing.

Following the success of the first two TSCLoud symposiums in Changsha and Liverpool, this year's TSCLoud focuses on "Top Problems in Achieving Cloud Computing Security and Trust". Accepted papers in our track cover several emerging and important cloud specific challenges. Topics include privacy policy enforcements, authorization complexities, privacy preserving auditing for data integrity, trust management mechanisms, automated security compliance tools and a coverage of possible DDoS attacks on IaaS clouds. We would like to thank the authors for their contributions. Their papers indicate a general trend towards a maturity of the computing industry. As cloud computing develops into a mainstream technology and computing business model, the security of both data and infrastructures cannot be understated. We are hopeful that some, if not all, of our papers will have a direct impact on making the cloud a safer place to work and play.

May you have an enjoyable TSCLoud 2013 in Melbourne. Thank you.

**Ryan Ko**, University of Waikato, New Zealand  
**Leonardo Martucci**, Kalstard University, Sweden  
**Markus Kirchberg**, Visa Inc, Singapore  
**Co-Chairs of TSCLoud-2013**



## **Message from the WNM-2013 Workshop Chairs**

Welcome to The 4th International Workshop on Wireless Networks and Multimedia (WNM-2013) held in conjunction with the 11th IEEE International Symposium on Parallel and Distributed Processing with Applications (ISPA-2013) at Melbourne, Australia, 16 - 18 July, 2013.

The wireless communication technologies have evolved quickly over the past years. As the explosive growth in broadband wireless networks, multimedia applications will dominate the future wireless communication society, resulting in non-trivial problems in terms of available capacity, reliability, quality-of-service, delay, and throughput. To successfully support wireless multimedia applications, it is necessary to improve the state-of-the-art techniques (such as radio resource management, mobility, handoff, and location management, etc.) in the multimedia transmission over wireless networks in order to provide quality-of-service guarantees between the end-users and achieve a high quality-of-experience for end-users. This workshop addresses the important problems and challenges caused by the transmission of multimedia applications over wireless networks. The workshop aims to bring together computer scientists and engineers in different disciplines to share and exchange their experience and ideas and discuss state-of-the-art and in-progress research on all aspects of wireless networks and multimedia applications.

All manuscripts submitted to WNM-2013 are carefully peer-reviewed and ranked according to their original contribution, quality, presentation and relevance to the themes of the workshop. Finally, 8 papers were selected for presentation at the workshop and inclusion in the conference proceedings.

We would like to take this opportunity to thank the authors for submitting their research work and the Program Committee of WNM-2013 for managing the reviews of the workshop papers in such a short time period. Also, we would like to give special thanks to the ISPA-2013 Organizing Committee.

We believe the workshop complements perfectly the topical focus of ISPA-2013 and provides additional breadth and depth to the main conference. Finally, we hope you enjoy the workshop and have a fruitful meeting in Melbourne, Australia.

**Yulei Wu**, Chinese Academy of Sciences, China

**Geyong Min**, University of Bradford, UK

**Ahmed Al-Dubai**, Edinburgh Napier University, UK

**Workshop Chairs of WNM-2013**

# TrustCom-2013 Organizing and Program Committees

## General Chairs

Wanlei Zhou, Deakin University, Australia  
Audun Josang, University of Oslo, Norway

## Program Chairs

Yang Xiang, Deakin University, Australia  
Bhavani Thuraisingham, The University of Texas at Dallas, USA  
Gregorio Martinez, University of Murcia, Spain

## Steering Committee

Guojun Wang, Central South University, China (Chair)  
Laurence T. Yang, St. Francis Xavier University, Canada (Chair)  
Jiannong Cao, Hong Kong Polytechnic University, Hong Kong  
Hsiao-Hwa Chen, National Cheng Kung University, Taiwan  
Minyi Guo, Shanghai Jiao Tong University, China  
Weijia Jia, City University of Hong Kong, Hong Kong  
Jie Li, University of Tsukuba, Japan  
Jianhua Ma, Hosei University, Japan  
Peter Mueller, IBM Zurich Research Laboratory, Switzerland  
Maria S. Perez-Hernandez, Universidad Politecnica de Madrid, Spain  
Indrakshi Ray, Colorado State University, USA  
Kouichi Sakurai, Kyushu University, Japan  
Srinivas Sampalli, Dalhousie University, Canada  
Ivan Stojmenovic, University of Ottawa, Canada  
Bhavani Thuraisingham, The University of Texas at Dallas, USA  
Jie Wu, Temple University, USA  
Wanlei Zhou, Deakin University, Australia

## Publicity Chairs

Kejie Lu, University of Puerto Rico at Mayaguez, Puerto Rico  
Roberto Di Pietro, Roma Tre University of Rome, Italy  
Xiaofei Liao, Huazhong University of Science and Technology, China

## Workshop Chairs

Nektarios Georgalas, British Telecom, UK  
Yulei Wu, Chinese Academy of Sciences, China  
Matthew Smith, Leibniz Universitat Hannover, Germany

## Publication Chairs

Jemal Abawajy, Deakin University, Australia  
Muhammad Khurram Khan, King Saud University, Kingdom of Saudi Arabia

## Program Committees

### Trust Track:

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Lan Wang, University of Huddersfield, UK  
Junjie Xiong, Chinese University of Hong Kong, China  
Junfeng Xu, China Information Technology Security Evaluation Center, China  
Zheng Yan, Aalto University, Finland/XiDian University, China  
Xinqing Yan, North China University of Water Resources and Electric Power, China  
Daqiang Zhang, Tongji University, China  
Yunpu Zhu, University of Lethbridge, Canada

## Keynote Address 1

### Cloud-Centric Assured Information Sharing



**Professor Bhavani Thuraisingham**

The University of Texas at Dallas  
USA

**Abstract:** Daniel Wolfe (formerly of the National Security Agency) defined assured information sharing (AIS) as one that “provides the ability to dynamically and securely share information at multiple classification levels among U.S., allied and coalition forces.” More recently National Security Agency CIO Lonny Anderson has stated that the agency is focusing on a “cloud-centric” approach to information sharing with other agencies. To address the needs of the DoD, our project is developing technologies and tools for cloud-centric assured information sharing funded by the Air Force Office of Scientific Research (AFOSR).

We initially developed two types of cloud data managers, one based on semantic web data and the other based on relational data, which are utilized as the engine for assured information sharing. Current frameworks do not scale for large RDF graphs and as a result do not address these challenges. Here, we developed a framework using Hadoop to store and retrieve large numbers of RDF triples by exploiting the cloud computing paradigm. We developed algorithms using the Hadoop/MapReduce framework to answer the SPARQL queries. We implemented XACML-based policy management and integrated it with our query processing strategies. For secure query processing for relational data we utilized the HIVE framework.

More recently we have developed demonstration systems with our European partners: Kings College, University of London and the University of Insubria Italy who are funded by EOARD (The European Office of Aerospace Research and Development). The first demonstration illustrates how information may be shared in our cloud, based on policies specified in XACML. In the second demonstration we implementing a semantic web-based policy engine and show how multiple social networks may share information on our cloud based on semantic web-based policies. For both demonstrations, we use the secure cloud data managers we have implemented.

The presentation will discuss the development we have made in cloud-based assured information sharing and discuss opportunities for international collaboration.

#### **Professor Bhavani Thuraisingham’s Biography**

Dr. Bhavani Thuraisingham is the Louis A. Beecherl, Jr. Distinguished Professor in the Erik Jonsson School of Engineering and Computer Science at The University of Texas at Dallas (UTD) and the executive director of UTD’s Cyber Security Research and Education Institute. Her current research is

on integrating cyber security, cloud computing and big data analytics. Prior to joining UTD in October 2004 she worked at the MITRE Corporation for 16 years including a three year stint as a Program Director at the National Science Foundation (NSF). At MITRE she led team efforts on developing secure data management systems and data mining tools. She initiated the Data and Applications Security program at NSF and was part of the Cyber Trust theme. Prior to MITRE she worked for the commercial industry for six years conducting research in data security, data management and distributed systems. She is the recipient of numerous awards including the IEEE Computer Society's 1997 Technical Achievement Award, the ACM SIGSAC 2010 Outstanding Contributions Award, the IEEE SMC and Transportation Systems Societies' 2010 joint award on Research Leadership in Intelligence and Security Informatics, the Society for Design and Process Science (SDPS) 2012 Transformative Achievement Gold Medal for interdisciplinary research on integrating computer sciences with social sciences and a 2013 IBM Faculty Award. She is a Fellow of IEEE, AAAS and the British Computer Society. She has published over 100 journal articles, over 200 conference papers and 12 books and has delivered over 100 keynote and invited addresses. She has five patents and is the founder of Knowledge and Security Analytics, LLC. Dr. Thuraisingham received her PhD from the University of Wales, Swansea in Theory of Computation and her earned higher doctorate (Doctor of Engineering) from the University of Bristol, England for her published work in Data Security.



## Keynote Address 2

### Cloud Bursting for Cost-Performance Efficiencies



**Professor Albert Y. Zomaya**

The University of Sydney  
Australia

**Abstract:** Dynamic expansion to public clouds for overwhelming workloads (workload surges) is an appealing alternative to static provisioning of local/private computer systems. The primary benefit of such cloud bursting is cost efficiency that can be interpreted as the performance to cost ratio. For example, in the case of a given application, the cost effectiveness in using public clouds might be best realized when resource usage (or resource rental) is minimized with satisfactory application performance. In this talk, I will discuss how to scale out bag-of-tasks applications using public cloud resources of different types in terms of cost efficiency. Bag-of-tasks applications are a very common type of application in science and engineering. These applications often consist of a large number of independent tasks that can run in parallel. I will show how these tasks can be cost efficiently assigned to resources across multiple clouds, i.e., local system and public clouds.

#### **Professor Albert Y. Zomaya's Biography**

Albert Y. Zomaya is currently the Chair Professor of High Performance Computing & Networking and Australian Research Council Professorial Fellow in the School of Information Technologies, The University of Sydney. He is also the Director of the Centre for Distributed and High Performance Computing which was established in late 2009. Professor Zomaya is the author/co-author of seven books, more than 450 papers, and the editor of 14 books and 19 conference proceedings. He is the Editor in Chief of the IEEE Transactions on Computers and Springer's Scalable Computing Journal serves as an associate editor for 20 leading journals. Professor Zomaya is the recipient of the Meritorious Service Award (in 2000) and the Golden Core Recognition (in 2006), both from the IEEE Computer Society. Also, he received the IEEE TCPP Outstanding Service Award and the IEEE TCSC Medal for Excellence in Scalable Computing, both in 2011. Professor Zomaya is an ACM Distinguished Speaker, a Chartered Engineer, a Fellow of AAAS, IEEE, IET (U.K.), and a Distinguished Engineer of the ACM.

## Keynote Address 3

### Secure and Minimal Architecture for Remote Attestation of Embedded Devices



**Professor Gene Tsudik**

University of California, Irvine  
USA

**Abstract:** Remote attestation is the process of securely verifying internal state of a remote hardware platform. It can be achieved either statically (at boot time) or dynamically, at run-time. Generally, software-based attestation techniques lack concrete security guarantees, while hardware-based approaches involve dedicated security co-processors that are too costly for low-end devices. In this work, we develop a new primitive (called SMART) based on bottom-up hardware/software co-design. SMART represents a simple, efficient and secure approach for establishing a dynamic root of trust in a remote embedded device. It is aimed at low-end micro-controller units (MCUs) that lack specialized memory management or protection features. SMART requires minimal changes to existing MCUs and assumes few restrictions on adversarial capabilities. Finally, we show that a systematic top-down approach to minimal attestation architecture yields a design extremely similar to SMART.

#### Professor Gene Tsudik's Biography

Gene Tsudik is a Chancellor's Professor of Computer Science at the University of California, Irvine (UCI). He received his PhD in Computer Science from USC in 1991. Before coming to UCI in 2000, he was at IBM Zurich Research Laboratory (1991-1996) and USC/ISI (1996-2000). Over the years, his research interests included many topics in security, privacy and applied cryptography. He serves as the Editor-in-Chief of ACM Transactions on Information and Systems Security (TISSEC).

## Keynote Address 4

### Cloud Computing Programming Models - Challenges and Solutions



**Professor Yi Pan**

Georgia State University  
USA

**Abstract:** Cloud computing has emerged rapidly as a growing paradigm of on-demand access to computing, data and software utilities using a usage-based billing model. Users essentially rent resources and pay for what they use and everything including software, platform, and infrastructure is as a service. In this talk, I will give a review of supercomputing, cluster computing, grid computing and cloud computing. Comparisons of these computing domains and programming models, their limitations and potential solutions will be included in this talk. In particular, I will point out the shortcomings and limitations of current cloud computing programming models and propose possible solutions. Current MapReduce model and its variants have succeeded in data-parallel applications such as database operations and web searching; however, they are still not effective for compute-intensive applications such as many graph applications. We propose several approaches to solving this problem through extension of current programming models, automatic translation from sequential codes to cloud codes, simple API and framework built on current cloud models, detection of data and task parallelism, and their efficient scheduling. Some preliminary theoretical and experimental results will also be reported in this talk.

#### **Professor Yi Pan's Biography**

Yi Pan is a Distinguished University Professor and Chair of the Department of Computer Science at Georgia State University, USA. He is also a "Changjiang Scholar" Visiting Chair Professor at Central South University, an IV-endowed visiting chair professor at Tsinghua University, and a guest professor at Beijing University in China. Dr. Pan received his B.Eng. and M.Eng. degrees in computer engineering from Tsinghua University, China, in 1982 and 1984, respectively, and his Ph.D. degree in computer science from the University of Pittsburgh, USA, in 1991. His profile has been featured as a distinguished alumnus in both Tsinghua Alumni Newsletter and University of Pittsburgh CS Alumni Newsletter. Dr. Pan's research interests include parallel and cloud computing, wireless networks, and bioinformatics. Dr. Pan has published more than 150 journal papers with over 50 papers published in various IEEE journals. In addition, he has published over 150 papers in refereed conferences. He has also co-authored/co-edited 37 books. His work has been cited more than 3950 times. Dr. Pan has served as an editor-in-chief or editorial board member for 15 journals including 7 IEEE Transactions. He is the recipient of many awards including IEEE Transactions Best Paper Award, IBM Faculty Award, JSPS Senior Invitation Fellowship, IEEE BIBE Outstanding Achievement Award, NSF Research Opportunity Award, and AFOSR Summer Faculty Research Fellowship. He has organized many international conferences and delivered more than 20 keynote speeches at various international conferences around the world.

## Keynote Address 5

### Cloud Security: Challenge and Practice



**Professor Hai Jin**

Huazhong University of Science and Technology  
China

**Abstract:** Cloud computing represents the trend of information technology. The development of cloud computing is facing several challenges. Security issues are at the top of the list. This talk deeply analyzes the security problems of cloud computing. Cloud security problems are fundamental rooted in the cloud characteristics- service outsourcing, sharing of computing infrastructure, dynamic complexity, superlarge system scale, multi-tendency, highly centralized resources and the open federated structure. The talk lists several key security challenges to cloud computing, such as trust relationships, access control, user behavior monitoring and privacy protection.

#### **Professor Hai Jin's Biography**

Hai Jin is a Cheung Kung Scholars Chair Professor of computer science and engineering at Huazhong University of Science and Technology (HUST) in China. He is now Dean of the School of Computer Science and Technology at HUST. Jin received his PhD in computer engineering from HUST in 1994. In 1996, he was awarded a German Academic Exchange Service fellowship to visit the Technical University of Chemnitz in Germany. Jin worked at The University of Hong Kong between 1998 and 2000, and as a visiting scholar at the University of Southern California between 1999 and 2000. He was awarded Excellent Youth Award from the National Science Foundation of China in 2001. Jin is the chief scientist of ChinaGrid, the largest grid computing project in China, and the chief scientist of National 973 Basic Research Program Project of Virtualization Technology of Computing System.

Jin is a senior member of the IEEE and a member of the ACM. Jin is the member of Grid Forum Steering Group (GFSG). He has co-authored 15 books and published over 400 research papers. His research interests include computer architecture, virtualization technology, cluster computing and grid computing, peer-to-peer computing, network storage, and network security.

Jin is the steering committee chair of International Conference on Grid and Pervasive Computing (GPC), Asia-Pacific Services Computing Conference (APSCC), International Conference on Frontier of Computer Science and Technology (FCST), and Annual ChinaGrid Conference. Jin is a member of the steering committee of the IEEE/ACM International Symposium on Cluster Computing and the Grid (CCGrid), the IFIP International Conference on Network and Parallel Computing (NPC), and the International Conference on Grid and Cooperative Computing (GCC), International Conference on Autonomic and Trusted Computing (ATC), International Conference on Ubiquitous Intelligence and Computing (UIC).

## Keynote Address 6

### On Cybercriminal Professionalism



**Dr. Jonathan Oliver**

Trend Micro  
Australia

**Abstract:** Recently cybercriminals have made significant advances in the way they go about their attacks. Many of these advances do not involve using new technologies - rather these advances are based on the systematic approaches being used. Some of the changes that reflect this cybercriminal professionalism include the careful tracking of every aspect of attacks and the presentation of this tracking in user interfaces. Based on the information provided in these interfaces, cybercriminals have optimized the form of their attacks to maximise the chance that they can infect users.

In this talk, I will look at these user interfaces and tracking mechanisms and look at the subsequent changes in cybercriminal behaviour.

#### **Dr. Jonathan Oliver's Biography**

Dr. Jonathan Oliver leads the Board of Architect at Trend Micro. He has worked in the computer security area for 10 years focusing on antispam and web reputation research and solutions. Before joining Trend Micro, he was Chief Spam-fighter at Mailfrontier.

Jonathan holds a doctorate in machine learning from Monash University. Prior to entering the computer security area, he performed Postdoctoral research in Australia and the U.K. and acted as a data-mining consultant in the Silicon Valley for organizations such as NASA, the FAA and eBay.

## Keynote Address 7

### Living Dangerously in the Cyber World



**Professor Vijay Varadharajan**

Macquarie University  
Australia

**Abstract:** Security issues have become increasingly significant over the years and expected to continue to dominate the technology scene with the increased focus on digital economy and dramatic growth in social networking and the adoption of technologies such as cloud computing by businesses.

This talk will begin with a brief look at current trends in the technology scenery and some of the key security issues that are impacting on business and society. In particular, first I will describe what I refer to as “increasing threat velocity”, with more and more attacks and their dynamic nature, an evolving set of bad guys with different motives and sophisticated easy to use tools readily available for ordinary users to conduct severe attacks.

Then the talk will briefly outline the risks in cloud computing, where issues of security, trust and accountability are particularly significant. Cloud computing with its shared multi-tenancy environment aggravates the traditional security threats. Trust that cloud providers will provide proper security measures to counteract the security threats and ensure availability of services has become paramount.

Then the talk will look at security issues in cloud data storage and in the provision of services in the cloud. In cloud data storage, we will address policy based access to secured data stored in the cloud. We will describe a new role based encryption scheme which integrates cryptographic techniques with role based access control. In the provision of secure services, we will describe a comprehensive security architecture that brings together access control, intrusion detection and trust management for cloud services using distributed virtualisation based architectures.

#### **Professor Vijay Varadharajan’s Biography**

Dr. Vijay Varadharajan is the Microsoft Chair Professor in Innovation in Computing in Australia at Macquarie University. He is also the Director of Information and Networked System Security Research (INSS) Group at Macquarie University. Before this he was Chair of Computing and Head of School of Computing and IT at University of Western Sydney. Previously, Vijay headed Security Research worldwide for Hewlett-Packard Labs based at European Headquarters at HP Labs Bristol, UK. He led and managed several research projects in UK, US, Germany, France and Italy and under his leadership several security research technologies were transferred into commercially successful

HP products. He also headed the Technical Security Strategy Initiative at HP under the Senior Vice President of HP. Earlier, he was Research Manager of Data Security Lab at British Telecom Research Labs. U.K., Research Fellow and Lecturer in Computer Science at Plymouth and Reading Universities.

Vijay was an inaugural Board Member of International Advisors of TCPA, USA, (originally formed by HP, Microsoft, Intel, Sun and Compaq). He is on the Trustworthy Computing Advisory Board (Microsoft, USA) (announced by Bill Gates), the International Security Advisory Board SAP (Germany), Research and Technology Advisory Board SAP (USA), Australian Government's Peak Security Advisory Group for the Minister of Broadband, Communications and Digital Economy, Australia. He is a member of the Australian Government Research Council College of Experts in Engineering, Mathematics and Informatics. He has been the Technical Board Director of Computer Science at Australian Computer Society, and Chair of the National Taskforce on E-Security.

Vijay has been on the Editorial Board of several journals including the IEEE Transactions in Dependable and Secure Computing, IEEE Transactions in Information Forensics and Security, IEEE Transactions in Computers, IEEE Transactions in Cloud Computing, the ACM Transactions on Information Systems Security, Springer International Journal of Information Security and IEEE Security and Privacy.

Vijay has had several visiting positions at different institutions over the years including Senior Research Scientist at Microsoft Research Cambridge UK, Senior Research Scientist at the Institute of Mathematical Sciences at National University of Singapore, Invited Professor at French National Research Labs (INRIA), Invited Professor at the Indian Inst. of Technology, Research Scientist at Fujitsu Research Labs, Fellow at British Telecom Research Labs., UK, Visiting Professor at eScience Institute, Edinburgh University and Visiting Professor at the Chinese Academy of Sciences.

Vijay has published over 320 papers in International Journals and Conferences, has co-authored and edited 9 books and holds 3 patents. His research work over the years has contributed to the development of several successful secure commercial systems and has generated billions of dollars of revenue. His current areas of research interest include Web Services Security, Secure Distributed Applications, Trusted Computing, Wireless and Mobile Security, Cloud Computing and Security, Internet Security, Cyber Security Attacks, Secure Social Computing, Security Policies and Architectures.

Vijay is a Fellow of the British Computer Society (FBCS), a Fellow of the IEE (FIEE), a Fellow of the Institute of Mathematics, UK (FIMA), a Fellow of the Australian Institute of Engineers (FIEAust) and a Fellow of the Australian Computer Society (FACS). He also holds a Senior Fellowship from the Australian Academy of Science.

## Keynote Address 8

### IoT/CPS: M2M Communication, Actuation and Coordination Challenges



**Professor Ivan Stojmenovic**

University of Ottawa  
Canada

**Abstract:** Existing machine-to-machine (M2M) communications incorporate a central point for gathering information, making decision, and acting. Large scale cyber-physical systems (CPS) beyond M2M concept are envisioned with the distributed actuation and in-network processing. Machine-to-machine communication aspects include data dissemination, data aggregation, reporting mechanisms for monitoring, cooperative access. Other related issues that would be explored are modeling, inter-dependency and topology control, and security and privacy. This lecture emphasizes actuation as one of important tools in the future applications of Internet of Things and Cyber Physical Systems architectures. Various existing models for wireless sensor and actuator networks are elaborated. It then concentrates on the network layer issues in wireless sensor and sensor-actuator networks. Coordination between sensors and robots, and robot to robot coordination are then covered with some concrete problem formulations. These include robot dispersion, communication aspects of robot coordination, robot task allocation, and sensor placement and relocation to improve sensing area coverage.

#### Professor Ivan Stojmenovic's Biography

Ivan Stojmenovic received his Ph.D. degree in mathematics in 1985. He earned a third degree prize at the International Mathematics Olympiad for high school students in 1976. He is Full Professor at the University of Ottawa, Canada. He also held regular or visiting positions in Serbia, Japan, USA, France, Spain, Brazil, Hong Kong, Taiwan, China (Distinguished Professor, Tsinghua University in Beijing and Dalian University of Technology, 2010-2), UK (Chair in Applied Computing, EECE, University of Birmingham, 2007/8).

Stojmenovic is Fellow of the IEEE (Communications Society, class 2008), and Canadian Academy of Engineering (since 2012), and Member of the Academia Europaea (The Academy of Europe), from 2012 (section: Informatics). He was IEEE CS Distinguished Visitor 2010-11. He received 2012 Distinguished Service Award from IEEE ComSoc Communications Software TC. He was cited >13000 times. His h-index is 56 (he is among 250 computer scientists with  $h \geq 50$ ; top h-index in Canada for mathematics and statistics). ESI Special Topics listed him #3 in papers, #9 in cites/paper, and #20 in total cites among all authors Wireless/Mobile Networks 1995-2005. One of his articles, on broadcasting in ad hoc wireless networks, was recognized as the Fast Breaking Paper, for October 2003 (as the only one for all of computer science), by Thomson ISI Essential Science Indicators <http://esi-topics.com/fbp/fbp-october2003.html>. Google Scholar lists him as the top



researcher in parallel and distributed systems by citations, and among the top ten in two more fields: wireless networks and algorithms. He received four best paper awards at conferences (IFIP PWC 2004, SENSORCOMM 2008, CSA 2009, ICA3PP 2011) and Excellence in Research Award of the University of Ottawa for 2009. He presented a number of tutorials and invited talks. He is Tsinghua 1000 Plan Distinguished Professor (2012- 5). He is recipient of the Royal Society Research Merit Award, UK, 2007-8.

He published >300 different papers in referred journals and conferences; >40 are in IEEE or ACM journals. He co-authored 'Wireless Sensor and Actuator Networks' (Wiley, 2010), and (co)edited five books with Wiley: 'Handbook of Wireless Networks and Mobile Computing' (2002), 'Mobile Ad Hoc Networking' (IEEE/Wiley, 2004), 'Handbook of Sensor Networks'(2005), 'Handbook of Applied Algorithms' (2008), 'RFID Systems' (2010). He co-authored over 40 book chapters. He collaborated with >100 co-authors with Ph.D. and a number of their graduate students from 25 different countries. He (co)supervised >60 graduate students. His current research interests are mainly in wireless ad hoc, sensor, vehicular, actuator and robot networks. His research interests also include security, parallel computing, multiple- valued logic, evolutionary computing, neural networks, combinatorial algorithms, computational geometry, graph theory, computational chemistry, image processing, programming languages, and computer science education. Stojmenovic received (as PI or co-PI) about 30 grants from Serbia, Canada, Mexico, China, USA, UK, Japan and EU, including four NSERC Collaborative Research Development and/or Strategic Grants. He was Director of the Ottawa-Carleton Institute for Computer Science (2002-2004).

He is editor-in-chief of IEEE Transactions on Parallel and Distributed Systems (2010- 2013), Journal of Multiple-Valued Logic and Soft Computing (received Certificate of Appreciation from IEEE Computer Society in 2002 for establishing and maintaining the journal), International Journal of Parallel, Emergent and Distributed Systems (T& F), and Ad Hoc & Sensor Wireless Networks (OCP), and editor of several journals including IEEE Network and ACM Wireless Networks. He recently guest edited special issues in several journals including IEEE TAC, IEEE JSAC, IEEE TPDS, IEEE Computer Magazine, IEEE Networks, IJDSN, Wireless Communications and Mobile Computing, Ad Hoc Networks.

Stojmenovic founded several workshops: WWASN at IEEE ICDCS, WiSARN at IEEE WoWMoM, IEEE/ACM CPSCom, IEEE MASS and IEEE INFOCOM, FOWANC at ACM MOBIHOC, LOCAN at IEEE MASS and MSN, LOCALGOS at IEEE DCOSS, and organized several research workshops. He is/was program chair for >30 events, including conferences FCST 2010, AdHocNow 2008, IEEE PIMRC 2008, EUC 05,08,09,10, IEEE AINA-07, IEEE MASS-04, and -07, InterSense-06, WONS-05, MSN-05 and -06, ISPA-05 and -07, and workshops at IEEE ICDCS 2003-07; IEEE LCN-05-06, HICSS, 2000, 2002, 2003; ICPDS-02; ICPP-00. He was also general co-chair, organizer, steering committee member, advisor, award, or workshop chair for ≈60 events since 2002, including IEEE ICDCS, IEEE INFOCOM, IEEE MASS, IEEE DCOSS, ACM Mobicom/Mobihoc, IEEE ICPADS, IEEE IPDPS, IFIP WMNC, IFIP WSAN, IFIP PWC. Stojmenovic served as member of >200 program committees.

## Keynote Address 9

### Performance Modelling and Analysis of Data-Centre Networks under Bursty and Batch Arrival Traffic



**Professor Geyong Min**

University of Bradford  
U.K

**Abstract:** Traffic burstiness is a ubiquitous phenomenon in modern communication networks and can deteriorate considerably the system performance and Quality-of-Service. Modelling and analysis of bursty traffic have drawn significant interest and received tremendous research efforts from both academia and industry. This talk will present various traffic models for capturing the traffic characteristics in real-world computer networks and report a new analytical performance model for Data-Centre Networks (DCNs) in the presence of bursty and batch arrival traffic that is modelled by the Compound Poisson Process with geometrically distributed batch sizes. The validity and accuracy of the model are demonstrated by comparing analytical results with those obtained through extensive simulation experiments. The analytical model is then used as a cost-effective tool to investigate the effects of bursty and batch arrival traffic on the design and performance of DCNs. Finally, the related emerging issues and future directions will be presented and discussed.

#### Professor Geyong Min's Biography

Professor Geyong Min is a Chair in Computer Science in the Department of Computing at the University of Bradford, UK. He received the PhD degree in Computing Science from the University of Glasgow, UK, and the BSc degree in Computer Science from Huazhong University of Science and Technology, China. His research interests include Next Generation Internet, Data-Centre Networks, Multimedia Systems, Modelling and Performance Engineering.

His recent research has been supported by European FP, UK EPSRC, Royal Society, Royal Academic of Engineering, and industrial partners. He has published over 200 research papers in prestigious international journals, including IEEE Transactions on Computers, IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on Communications, IEEE Transactions on Wireless Communications, and IEEE Transactions on Multimedia, and in reputable international conferences, such as ICDCS and IPDPS.

Prof. Min is an Editorial Board member of 9 international journals and serves as the Guest Editor for 18 international journals. He has chaired/co-chaired 30 international conferences/workshops. He received the Outstanding Leadership Awards from IEEE International conferences HPCC'2012, TrustCom'2012, CIT'2010, ScalCom'2009, and HPCC'2008.

## Keynote Address 10

### A Data-as-a-Service Framework for IoT Big Data



**Professor Laurence T. Yang**

Huazhong University of Science and Technology, China  
St Francis Xavier University, Canada

**Abstract:** Internet of Things (IoT) has been widely used in our daily life. In the IoT, these smart sensing devices generate a huge amount of sensing data. The sharp increase of the diverse sensing devices has led to the various heterogeneous data types and the booming growth of the data. Practically, the valuable information, as a service for users, is mined through analyzing and processing the big data. However, a lot of challenges arise along.

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

#### **Professor Laurence T. Yang's Biography**

Dr. Laurence T. Yang is a professor at School of Computer Science and Technology, Huazhong University of Science and Technology, China and Department of Computer Science of St. Francis Xavier University, Canada. His current research includes parallel and distributed computing, embedded and ubiquitous/pervasive computing.

He has published many papers in various refereed journals, conference proceedings and book chapters in the above areas including around 140 international journal papers such as IEEE and ACM Transactions. 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 Technical Committee of Supercomputing Applications (2001-2004), the chair of IEEE Technical Committee of Scalable Computing (2008-2011), and the chair of IEEE Task force on Ubiquitous Computing and Intelligence (2009-now). He was in the steering committee of IEEE/ACM Supercomputing (SC-XY) conference series (2008-2011), and currently is in the National Resource Allocation Committee (NRAC) of Compute Canada (2009-now).

In addition, he is the editors-in-chief of several international journals. He is serving as an editor for many international journals. 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 won several Best Paper Awards (including IEEE Best and Outstanding Conference Awards such as the IEEE 20th International Conference on Advanced Information Networking and Applications (IEEE AINA-06), etc); one Best Paper Nomination; Distinguished Achievement Award, 2005, 2011; Canada Foundation for Innovation Award, 2003. He has been invited to give around 20 keynote talks at various international conferences and symposia.

## Keynote Address 11

### Privacy preserving in Cloud with Big Data applications



**Associate Professor Jinjun Chen**

University of Technology, Sydney  
Australia

**Abstract:** Cloud computing promises an open environment where customers can deploy IT services in pay-as-you-go fashion while saving huge capital investment in their own IT infrastructure. While cloud provides a promising infrastructure for big data applications such as medical data analysis, privacy preserving becomes critical because otherwise users may eventually lose the confidence of deploying cloud computing in practice. In this talk, we will discuss privacy preserving in general and then propose our solution to address a particular type of privacy preserving in cloud with big data applications.

#### **Associate Professor Jinjun Chen's Biography**

Dr Jinjun Chen is an Associate Professor from Faculty of Engineering and IT, University of Technology Sydney (UTS), Australia. He is the Director of Lab of Cloud Computing and Distributed Systems at UTS. He holds a PhD in Computer Science and Software Engineering from Swinburne University of Technology, Australia. Dr Chen's research interests include cloud computing, big data, workflow management, privacy and security, and related various research topics. His research results have been published in more than 100 papers in high quality journals and at conferences, including IEEE Transactions on Service Computing, ACM Transactions on Autonomous and Adaptive Systems, ACM Transactions on Software Engineering and Methodology (TOSEM), IEEE Transactions on Software Engineering (TSE), and IEEE Transactions on Parallel and Distributed Systems (TPDS).

He received Swinburne Vice-Chancellor's Research Award for early career researchers (2008), IEEE Computer Society Outstanding Leadership Award (2008-2009) and (2010-2011), IEEE Computer Society Service Award (2007), Swinburne Faculty of ICT Research Thesis Excellence Award (2007). He is an Associate Editor for IEEE Transactions on Parallel and Distributed Systems. He is the Vice Chair of IEEE Computer Society's Technical Committee on Scalable Computing (TCSC), Vice Chair of Steering Committee of Australasian Symposium on Parallel and Distributed Computing, Founder and Coordinator of IEEE TCSC Technical Area on Workflow Management in Scalable Computing Environments, Founder and steering committee co-chair of International Conference on Cloud and Green Computing, and International Conference on Big Data and Distributed Systems.

## **Panel - Grand Challenges from Big Data: Processing, Communication, Security, and Privacy**

With the arrival of Big Data Era, properly utilizing the power of big data is becoming increasingly essential for the strength and competitiveness of businesses and organizations. We are facing grand challenges from big data from different perspectives, such as processing, communication, security, and privacy. In the panel we will explore, with the outstanding international speakers, the following key issues faced in the process of turning large data into high value:

- Processing the high volume and heterogeneity of data
- Communication technologies to transfer the big data, and
- Security and privacy issues of big data

The following world-renowned researchers will speak during the panel:



**Professor Albert Y. Zomaya**  
The University of Sydney  
Australia



**Professor Ivan Stojmenovic**  
University of Ottawa  
Canada



**Professor Vijay  
Varadharajan**  
Macquarie University  
Australia



**Professor Hai Jin**  
Huazhong University of  
Science and Technology  
China



**Professor Jiankun Hu**  
University of New South Wales  
at the Australian Defence Force  
Academy, Australia



**Dr Michael Hobbs (Chair)**  
Deakin University  
Australia

## TrustCom / ISPA / IUCC 2013 Program

### Monday 15 July 2013

15:00-17:30	Registration (Parkview Lounge, 4 <sup>th</sup> Floor)
18:00-21:00	Welcome Reception (Parkview Lounge & Pool Deck)

### Tuesday 16 July 2013

08:00-17:30	Registration (Parkview Lounge, 4 <sup>th</sup> Floor)							
08:00-08:30	Opening and Welcome (Rathdowne/Bouverie Rooms)							
08:30-09:20	Keynote 1: Prof Bhavani Thuraisingham, Cloud-Centric Assured Information Sharing (Rathdowne/Bouverie Rooms)							
09:20-10:10	Keynote 2: Prof Albert Zomaya, Cloud Bursting for Cost-Performance Efficiencies (Rathdowne/Bouverie Rooms)							
10:10-10:30	Morning Tea (Parkview Lounge, Pool Deck & Blue's Bar & Grill)							
10:30-12:30	Session 1A: TrustCom (Rathdowne)	Session 1B: TrustCom (Bouverie)	Session 1C: TrustCom (Lygon)	Session 1D: TrustCom (Lincoln)	Session 1E: ISPA (Argyle)	Session 1F: TrustID (Queensberry)	Session 1G: IUCC (Pelham)	Session 1H: TSCloud (Faraday)
12:30-13:30	Lunch (Parkview Lounge, Pool Deck & Blue's Bar & Grill)							
13:30-14:20	Keynote 3: Prof Gene Tsudik, Secure and Minimal Architecture for Remote Attestation of Embedded Devices (Rathdowne/Bouverie Rooms)							
14:20-15:10	Keynote 4: Prof Yi Pan, Cloud Computing Programming Models - Challenges and Solutions (Rathdowne/Bouverie Rooms)							
15:10-15:30	Afternoon Tea (Parkview Lounge, Pool Deck & Blue's Bar & Grill)							
15:30-17:30	Session 2A: TrustCom (Rathdowne)	Session 2B: TrustCom (Bouverie)	Session 2C: TrustCom (Lygon)	Session 2D: TrustCom (Lincoln)	Session 2E: ISPA (Argyle)	Session 2F: TrustID (Queensberry)	Session 2G: IUCC (Pelham)	Session 2H: UbiSafe (Faraday)

#### Session 1A: TrustCom (Rathdowne) – Privacy in Cloud Computing

**Session Chair:** *Prof. Kutylowski Miroslaw, Wroclaw University of Technology, Poland*

A Privacy-Leakage-Tolerance based Noise Enhancing Strategy for Privacy Protection in Cloud Computing

*Gaofeng Zhang, Yun Yang, Jinjun Chen*

An Iterative Hierarchical Key Exchange Scheme for Secure Scheduling of Scientific Applications in Cloud Computing

*Chang Liu, Xuyun Zhang, Chengfei Liu, Yun Yang, Jinjun Chen*

A Fuzzy Modeling Approach for Risk-based Access Control in eHealth Cloud

*Juan Li, Yan Bai, Nazia Zaman*

Scalable and Privacy-Preserving Variants of the Austrian Electronic Mandate System in the Public Cloud

*Bernd Zwattendorfer, Daniel Slamanig*

KP-ABE based Verifiable Cloud Access Control Scheme

*Xiaolin Si, Pengpian Wang, Liwu Zhang*

#### Session 1B: TrustCom (Bouverie) – Security and Trust in Network Routing

**Session Chair:** *Dr. William Liu, Auckland University of Technology, New Zealand*

Light-weight Trust-based On-demand Multipath Routing Protocol for Mobile Ad Hoc Networks

*Chuanhao Qu, Zhiping Jia, Lei Ju, Huaqiang Xu*

Garbled Routing (GR): Towards Unification of Anonymous Networks

*Shaahin Madani, Ibrahim Khalil*

Security Routing Based Network Coding in Wireless Sensor Network  
*Jing Chen, Ruiying Du, Qingyun Lin*

TIGER: A Trust-based Intelligent Geographical Energy-aware Routing for Smart Grid Communication Networks  
*Ming Xiang, William Liu, Quan Bai*

AFC: An Effective Metric for Reliable Routing in Wireless Mesh Networks  
*Rakesh Matam, Somanath Tripathy*

**Session 1C: TrustCom (Lygon) – Trust in Mobile and Wireless Networks**  
**Session Chair: Prof. Yunchan Jung, Catholic University of Korea, South Korea**

Performance Evaluation of Trust-based Collaborative Sanctioning in MANETs  
*Marcin Seredynski, Krzysztof Szczypiorski, Djamel Khadraoui*

Novel Physically-Embedded Data Encryption for Embedded Device  
*Fangyong Hou, Nong Xiao, Hongjun He, Fang Liu*

Server Assisted Key Establishment Protocol for WSN: A MIKEY- Ticket Approach  
*Aymen Boudguiga, Alexis Olivereau, Nouha Oualha*

A Fully-secure RFID Authentication Protocol from Exact LPN Assumption  
*MSI Mamun, A Miyaji*

Determining Similar Recommenders using Improved Collaborative Filtering in MANETs  
*Raihana Ferdous, Vallipuram Muthukkumarasamy, Elankayer Sithirasanen*

**Session 1D: TrustCom (Lincoln) – Privacy in Mobile and Wireless Networks**  
**Session Chair: Dr. Shui Yu, Deakin University, Australia**

Privacy-Preserving Wireless Medical Sensor Network  
*Xun Yi, Jan Willemsen, Farid Nait-Abdesselam*

A Threat to Mobile Cyber-physical Systems: Sensor-based Privacy Theft Attacks on Android Smartphones  
*Lingguang Lei, Yuewu Wang, Jian Zhou, Lei Wang, Zhongwen Zhang*

Protocol Formats Reverse Engineering Based on Association Rules in Wireless Environment  
*Wang Yong, Zhang Nan, Wu Yanmei, Su Binbin, Liao Yongjian*

Power Based Malicious Code Detection Techniques for Smartphones  
*Bryan Dixon, Shivakant Mishra*

A Privacy-Preserved Joint Group Time Scheduling Mechanism for Mobile Social Applications  
*Yu-Jia Chen, Chia-Yu Lin, Li-Chun Wang*

**Session 1E: ISPA (Argyle) – Networking and Modeling**  
**Session Chair: Dr. Michael Hobbs, Deakin University, Australia**

Local Monitoring and Maintenance for Operational Wireless Sensor Networks  
*Md Zakirul Alam Bhuiyan, Guojun Wang, Jiannong Cao, Jie Wu*

A Probabilistic Model for Estimating the Power Consumption of Processors and Network Interface Cards  
*Waltenegus Dargie, Jianjun Wen*

Automatic Locality Exploitation in the Codelet Model  
*Chen Chen, Yao Wu, Joshua Suetterlein, Long Zheng, Minyi Guo, Guang R. Gao*

GPU Acceleration of Interior Point Methods in Large Scale SVM Training  
*Tao Li, Hua Li, Xuechen Liu, Shuai Zhang, Kai Wang, Yulu Yang*

An Analysis of Driver Domain Offload for Paravirtualized Communication  
*Chung Lee, Peter Strazdins*

Energy-Performance Analysis and Optimization for Networks-on-Chip  
*Shuai Zhang, Fenglong Song, Dongrui Fan, Zhiyong Liu*

**Session 1F: TrustID (Queensberry) – Trust Management**  
**Session Chair: Prof. Zheng Yan, Xidian University, China**

A Trust Evaluation Method for Supplier Selection  
*Xiaofeng Qiu, Lei Cao, Pengfei Li, Liang Zhao*

A Trusted Remote Attestation Model based on Trusted Computing  
*Yue Yu, HuaiMin Wang, Gang Yin, Bo Liu*

Achieving Collaborative Wi-Fi Sharing without Changing Current Technologies  
*Carlos Ballester Lafuente, Jean-Marc Seigneur*

Multivalued trust routing based on topology level for wireless sensor networks  
*Zhongwei Chen, Ruihua Zhang*

A Research Model for Trustworthy Pervasive Social Networking  
*Zheng Yan, Peng Zhang, Valtteri Niemi, Raimo Kantola*

**Session 1G: IUCC (Pelham) – Ubiquitous Computing**  
**Session Chair: Prof. Neil Bergmann, University of Queensland, Australia**

Context-Aware Routing Algorithm for WSNs Based on Unequal Clustering  
*Longpeng Zheng, Zhiping Jia, Ruihua Zhang, Hui Xia*

SMC: A shared memory based SpaceWire Controller Solution  
*Qingfeng Yu, Yijiao Chen, Xilong Mao, Baokang Zhao*

LogicCrowd: a Declarative Programming Platform for Mobile Crowdsourcing  
*Jurairat Phuttharak, Seng Loke*

Conflict and Interference Resolution for Physical Annotation Systems  
*Ahmad A. Alzahrani, Seng W. Loke, Hongen Lu*

Normal Vector based Fault-Tolerant Event Boundary Detection in Wireless Sensor Networks  
*Wei Wang, Ruihua Zhang*

**Session 1H: TSCLoud (Faraday) – Trust and Security in Cloud Computing**  
**Session Chair: Dr. Ryan Ko, University of Waikato, New Zealand**

Complete Privacy Preserving Auditing for Data Integrity in Cloud Computing  
*Y Govinda Ramaiah, G Vijaya Kumari*

On the Complexity of Authorization of Temporal RBAC in Cloud Computing Service  
*Wenkang Wu, Zhuo Tang, Renfa Li*

On Subjective Trust for Privacy Policy Enforcement in Cloud Computing  
*Karthick Ramachandran, Hanan Lutfiyya, Mark Perry*

A Reliability-based Trust Management Mechanism for Cloud Services  
*Wenjuan Fan, Harry Perros*



Towards Building an Automated Security Compliance Tool for the Cloud  
*Kazi Wali Ullah, Abu Shohel Ahmed, Jukka Ylitalo*

**Session 2A: TrustCom (Rathdowne) – Security in Mobile and Wireless Networks**  
**Session Chair: *Dr. Daniel Migault, Francetelecom, France***

ChainDroid: Safe and Flexible Access to Protected Android Resources Based on Call Chain  
*Qihui Zhou, Dan Wang, Yan Zhang, Bo Qin, Aimin Yu*

DroidAnalytics: A Signature Based Analytic System to Collect, Extract, Analyze and Associate Android Malware  
*Min Zheng, Mingshen Sun, John C.S. Lui*

Securing Domain Name System combined with MIPv6 for Mobile Hosts  
*Yunchan Jung, Marnel Peradilla, J. William Atwood*

Securing Mobile Mashups with SCCM  
*Florent Batard, Karima Boudaoud, Michel Riveill*

Secure Data Aggregation with MAC Authentication in Wireless Sensor Networks  
*Abdelbasset Trad, Hani Alzaid*

**Session 2B: TrustCom (Bouverie) – Trust and Security in Social Networks**  
**Session Chair: *Prof. Gwan-Hwan Hwang, National Taiwan Normal University, Taiwan***

Modeling Malware Propagation in Smartphone Social Networks  
*Sancheng Peng, Guojun Wang, Shui Yu*

Unwanted Content Control via Trust Management in Pervasive Social Networking  
*Zheng Yan, Raimo Kantola, Gaowa Shi, Peng Zhang*

TISON: Trust Inference computation for online Social Networks  
*Sana Hamdi, Amel Bouzeghoub, Alda Lopes Gancarski, Sadok Ben Yahia*

Fine-Grained Trust Assertions for Privacy Management in the Social Semantic Web  
*Owen Sacco, John G. Breslin, Stefan Decker*

Preserving Utility in Social Network Graph Anonymization  
*Mohd Izuan Hafez Ninggal, Jemal H. Abawajy*

**Session 2C: TrustCom (Lygon) – Network Security**  
**Session Chair: *Dr. Dan (Dongseong) Kim, University of Canterbury, New Zealand***

DDoS Attack Detection at Local Area Networks Using Information Theoretical Metrics  
*Yuan Tao, Shui Yu*

Towards an Information-Theoretic Approach for Measuring Intelligent False Alarm Reduction in Intrusion Detection  
*Yuxin Meng, Lam-for Kwok*

Rational Secret Sharing Information-theoretically Secure Against Adaptive Adversaries  
*Yang Yu, Zhanfei Zhou*

What Is the Pattern of a Botnet?  
*Wang Tianzuo, Wang Huaimin, Liu Bo, Shi Peichang*

Analyzing Malware by Abstracting the Frequent Itemsets in API call Sequences  
*Yong Qiao, Yuexiang Yang, Jie He, Chuan Tang*

## **Session 2D: TrustCom (Lincoln) – Attack and Defense**

**Session Chair:** *Prof. Alex James, Nazarbayev University, Kazakhstan*

Kappa-Fuzzy ARTMAP: A Feature Selection Based Methodology to Intrusion Detection in Computer Networks

*Nelcileo Araujo, Ruy de Oliveira, Ed'Wilson Ferreira, Valtemir Nascimento, Ailton Shinoda, Bharat Bhargava*

Visual Analytics Model for Intrusion Detection in Flood Attack

*Jinson Zhang, Mao Lin Huang*

A Regional Statistics Detection Scheme against Sybil Attacks in WSNs

*Mingxi Li, Yan Xiong, Xuangou Wu, Xiancun Zhou, Yuhui Sun*

A Framework for Improving the Accuracy of Unsupervised Intrusion Detection for SCADA System

*Abdulmohsen Almalawi, Zahir Tari, Adil Fahad, Ibrahim Khalil*

Security Aspects of Military Sensor-based Defence Systems

*Robert Thompson, Michael Johnstone*

## **Session 2E: ISPA (Argyle) – Parallel and Distributed Applications**

**Session Chair:** *Dr. Luigi Grimaudo, Politecnico di Torino, Italy*

SciHive: Array-based query processing with HiveQL

*Yifeng Geng, Xiaomeng Huang, Meiqi Zhu, Guangwen Yang*

Multivalued and Deterministic Peer-to-Peer Polling in Social Networks with Reputation Conscious Participants

*Burkhard Englert, Reza Gheissari*

Static or Dynamic: Trade-offs for Task Dependency Analysis for Heterogeneous MPSoC

*Qi Guo, Chao Wang, Xuehai Zhou, Xi Li*

CFIO: A Fast I/O Library for Climate Models

*Wencan Wang, Xiaomeng Huang, Haohuan Fu, Yong Hu, Shizhen Xu, Guangwen Yang*

Automatic Loop-based Pipeline Optimization on Reconfigurable Platform

*Qi Guo, Chao Wang, Xiaojing Feng, Xuehai Zhou*

## **Session 2F: TrustID (Queensberry) – Identity Management Systems and Applications**

**Session Chair:** *Dr. Ryan Ko, University of Waikato, New Zealand*

The Affect of Familiarity on The Usability of Recognition-based Graphical Password-Cross cultural Study Between Saudi Arabia and The United Kingdom

*Hani Moaiteq Aljahdali, Ron Poet*

Disability Parking Permit

*Mirosław Kutylowski, Piotr Lipiak*

Evaluating the Trust of Android Applications through an Adaptive and Distributed Multi-Criteria Approach

*Gianluca Dini, Fabio Martinelli, Ilaria Matteucci, Marinella Petrocchi, Andrea Saracino, Daniele Sgandurra*

Continuous Mobile Authentication Using Virtual Key Typing Biometrics

*Tao Feng, Xi Zhao, Bogdan Carbunary and Weidong Shi*

Studies in Socio-Technical Security Analysis: Authentication of Identities with TLS Certificates

*Ana Ferreira, Rosario Giustolisi, Jean-Louis Huynen, Vincent Koenig, Gabriele Lenzini*

## **Session 2G: IUCC (Pelham) – Ubiquitous Communications**

**Session Chair:** *Dr. Adrian Holzer, EPFL, Switzerland*

Proximity-based Service Beyond 4G Network: Peer-aware Discovery and Communication Using E-UTRAN and WLAN

*Yi-Hsueh Tsai, Yi-Ting Lin, Kan-Chei Loa, Tsung-Yu Tsai, Chun-Che Chien, Dun-Cheih Huang, Shiann-Tsong Sheu*

Characterization of OSPF Convergence with Correlated Failures

*Dan Zhao, Chunqing Wu, Xiaofeng Hu, Baokang Zhao*

Fast Intra Mode Decision Algorithm Based on Spatial-domain Energy for H.264/AVC

*Yinbo Liu, Xingang Liu, Zhixin Shen, Laurence Yang*

A Location Management algorithm for LEO Satellite Networks

*Yanpeng Ma, Wei Peng, Xiaofeng Wang, Baokang Zhao, Jinshu Su, Chunqing Wu*

A Distributed Routing Algorithm for LEO Satellite Networks

*Yanpeng Ma, Wei Peng, Wanrong Yu, Baokang Zhao, Jinshu Su, Chunqing Wu*

Communication and Collaboration Service Components For Ubiquitous Communication Applications

*Ki-Sook Chung, Young-Mee Shin*

## **Session 2H: UbiSafe (Faraday) – UbiSafe Computing**

**Session Chair:** *Dr. Shawkat Ali, Central Queensland University, Australia*

A Comprehensive Approach to Abusing Locality in Shared Web Hosting Servers

*Seyed Ali Mirheidari, Sajjad Arshad, Saeidreza Khoshkdahan, Rasool Jalili*

Crime Toolkits: The Productisation of Cybercrime

*Ammar Alazab, Micheal Hobbs, Jemal Abawajy, Robert Layton, Ansam khraisat*

Shear-based Spatial Transformation to Protect Proximity Attack in Outsourced Database

*Al Amin Hossain, Eui-Nam Huh*

Authorization policies: Using Decision Support System for context-aware protection of user's private data

*Arnaud Oglaza, Romain Laborde, Pascale Zaraté*

Case Study: On the Security of Key Storage on PCs

*Roberto Gallo, Henrique Kawakami, Ricardo Dahab*

A Power Model Combined of Architectural Level and Gate Level for Multicore Processors

*Manman Peng and Yan Hu*

Defend against Collusive SSDF Attack using Trust in Cooperative Spectrum Sensing Environment

*Jingyu Feng, Yuqing Zhang, Guangyue Lu and Liang Zhang*

Efficient Random Key based Encryption System for Data Packet Confidentiality in WSNs

*Kashif Saleem*

## Wednesday 17 July 2013

08:30-17:30	Registration (Parkview Lounge, 4 <sup>th</sup> Floor)							
08:30-09:20	Keynote 5: Prof Hai Jin, Cloud Security: Challenge and Practice (Rathdowne/Bouverie Rooms)							
09:20-10:10	Keynote 6: Dr Jonathan Oliver, On Cybercriminal Professionalism (Rathdowne/Bouverie Rooms)							
10:10-10:30	Morning Tea (Parkview Lounge, Pool Deck & Blue's Bar & Grill)							
10:30-12:30	Session 3A: TrustCom (Rathdowne)	Session 3B: TrustCom (Bouverie)	Session 3C: TrustCom (Lygon)	Session 3D: TrustCom (Lincoln)	Session 3E: ISPA (Argyle)	Session 3F: ISPA (Queensberry)	Session 3G: IUCC (Pelham)	Session 3H: ACS (Faraday)
12:30-13:30	Lunch (Parkview Lounge, Pool Deck & Blue's Bar & Grill)							
13:30-14:20	Keynote 7: Prof Vijay Varadharajan, Living Dangerously in the Cyber World (Rathdowne/Bouverie Rooms)							
14:20-15:10	Keynote 8: Prof Ivan Stojmenovic, IoT/CPS: M2M Communication, Actuation and Coordination Challenges (Rathdowne/Bouverie Rooms)							
15:10-15:30	Afternoon Tea (Parkview Lounge, Pool Deck & Blue's Bar & Grill)							
15:30-17:30	Session 4A: TrustCom (Rathdowne)	Session 4B: TrustCom (Bouverie)	Session 4C: TrustCom (Lygon)	Session 4D: TrustCom (Lincoln)	Session 4E: ISPA (Argyle)	Session 4F: ISPA (Queensberry)	Session 4G: IUCC (Pelham)	Session 4H: WNM (Faraday)
18:00-21:30	Conference Banquet (Rathdowne/Bouverie/Lygon Rooms)							

### Session 3A: TrustCom (Rathdowne) – Trusted Computing Algorithms

**Session Chair:** *Dr. Shawkat Ali, Central Queensland University, Australia*

A Secure and Efficient Fault-Tolerant Group Key Agreement Protocol  
*Anmin Fu, Gongxuan Zhang, Zhenchao Zhu*

MDS-based Trust Estimation Model for Vehicular Ad-hoc Network  
*TRaghuVamsi Krishna, Rajesh Barnwal, Soumya Ghosh*

sEncrypt: An Encryption Algorithm Inspired From Biological Processes  
*Oliver Bonham-Carter, Abhishek Parakh, Dhundy Bastola*

A Scalable Architecture for Highly Reliable Certification  
*Xavier Bonnaire, Rudyar Cortés, Fabrice Kordon, Olivier Marin*

A Secure and Trusted Channel Protocol for the User Centric Smart Card Ownership Model  
*Raja Naeem Akram, Konstantinos Markantonakis, Keith Mayes*

### Session 3B: TrustCom (Bouverie) – Privacy and Trust

**Session Chair:** *Dr. Gaofeng Zhang, Swinburne University of Technology, Australia*

A Model for Context-Aware Location Identity Preservation using Differential Privacy  
*Roland Assam, Thomas Seidl*

P3MCF: Practical Privacy-Preserving Multi-Domain Collaborative Filtering  
*Toru Nakamura, Shinsaku Kiyomoto, Ryu Watanabe, Yutaka Miyake*

On the Use of LSH for Privacy Preserving Personalization  
*Armen Aghasaryan, Makram Bouzid, Dimitre Kostadinov, Mohit Kothari, Animesh Nandi*

Improving the Utility of Differentially Private Data Releases via k-Anonymity  
*Jordi Soria-Comas, Josep Domingo-Ferrer, David Sánchez, Sergio Martínez*

Scheme of User Privacy Protection Applied to Online Marketing  
*Maria Oliveira, Ruy Queiroz*

An Effective Differentially Private Data Releasing Algorithm for Decision Tree  
*Tianqing Zhu*

**Session 3C: TrustCom (Lygon) – Security Models and Frameworks**  
**Session Chair: Dr. Poet Ronald, University of Glasgow, UK**

An Application Security Framework for Near Field Communication  
*Dirar Abu-Saymeh, Dhiah el Diehn I. Abou-Tair, Ahmad Zmily*

Scalable Attack Representation Model Using Logic Reduction Techniques  
*Jin B. Hong, Dong Seong Kim, Tadao Takaoka*

Formalizing and Modeling Fairness for Benefit Distribution in Collaborations  
*Florian Volk, Florian Sokoli, Sascha Hauke, Max Mühlhäuser*

Attribute-based Mining Process for the Organization-Based Access Control Model  
*Ahmad Samer Wazan, Gregory Blanc, Hervé Debar, Joaquin Garcia-Alfaro*

Private Multiparty Set Intersection Protocol in Rational Model  
*Mohammad Rahman, Atsuko Miyaji, Keita Emura*

**Session 3D: TrustCom (Lincoln) – Trust and Security in Cloud Computing**  
**Session Chair: Dr. Chen Wang, CSIRO, Australia**

A Mutual Nonrepudiation Protocol for Cloud Storage with Interchangeable Accesses of a Single Account from Multiple Devices  
*Gwan-Hwan Hwang, Jenn-Zjone Peng, Wei-Sian Huang*

Privacy-Enhanced Keyword Search in Clouds  
*Miao Zhou, Mu Yi, Willy Susilo, Man Ho Au*

iPEKS: Fast and Secure Cloud Data Retrieval from the Public-key Encryption with Keyword Search  
*Fu-Kuo Tseng, Rong-Jaye Chen, Bao-Shuh Lin*

A Trust-aware Framework for Evaluating Security Controls of Service Providers in Cloud Marketplaces  
*Sheikh Habib, Vijay Varadharajan, Max Muehlhaeuser*

Reputation Attacks Detection for Effective Trust Assessment Among Cloud Services  
*Talal H. Noor, Quan Z. Sheng, Abdullah Alfazi*

**Session 3E: ISPA (Argyle) – Parallel and Distributed Systems**  
**Session Chair: Dr. Karolina Sarnowska-Upton, University of Virginia, USA**

Register Allocation by Incremental Graph Colouring for Clustered VLIW Processors  
*Xuemeng Zhang, Hui Wu, Haiyan Sun*

TxSnoop: Power-Aware Transactional Snoop  
*Ehsan Atoofian*

Regional Consistency: Programmability and Performance for Non-Cache-Coherent Systems  
*Bharath Ramesh, Calvin J. Ribbens, Srinidhi Varadarajan*

A Comparative Study of Job Scheduling Strategies in Large-Scale Parallel Computational Systems  
*Aftab Ahmed Chandio, Cheng-Zhong Xu, Nikos Tziritas, Kashif Bilal, Samee U. Khan*

Bicriteria Load Balancing for Online Placement in Heterogeneous Servers with Pareto Upper Bounds  
*Savio Tse*

**Session 3F: ISPA (Queensberry) – Parallel and Distributed Algorithms**  
**Session Chair: Dr. Rubing Duan, Institute of High Performance Computing, Singapore**

Collaborative Parallel Local Search for Simplified Protein Structure Prediction  
*Mahmood A Rashid, M.A.Hakim Newton, Abdul Sattar*

On Change Detection of XML Schemas

*Abdullah Baqasah, Eric Pardede, Irena Holubova, J. Wenny Rahayu*

Deadlock-Free Fully Adaptive Routing in Irregular Networks without Virtual Channels

*Dong Xiang, Zhigang Yu, Jie Wu*

Quantitative Analysis of Inter-block dependence in speculative execution

*Junrui Zhou, Hong An, Yanyan Zou, Tao Sun*

Heterogeneous Multiconstraint Application Partitioner (HMAP)

*Servesh Muralidharan, Aravind Vasudevan, Avinash Malik, David Gregg*

### **Session 3G: IUCC (Pelham) – Ubiquitous Systems**

**Session Chair:** *Dr. Marcin Seredynski, CRP Tudor, Luxembourg*

Quantitative Risk Analysis for Mobile Cloud Computing: a Preliminary Approach and a Health Application Case Study

*Javeria Samad, Seng Loke, Karl Reed*

Thermal-Aware On-Chip Memory Architecture Exploration

*Yang Li, Zhiping Jia, Yi Wang, Zili Shao*

Quality Assessment for Stereoscopic Image based on DCT frequency Information

*Chao Sun, Xingang Liu, Kai Kang, Laurence T. Yang*

Hope: A fault-tolerant distributed Pub/Sub architecture for large-scale dynamic network environment

*Xiaochuan Yu, Alvin Chan*

Design of The Farmer's Experience based Greenhouse Operating Systems

*Aekyung Moon*

Validation of a Rowing Oar Angle Measurement System based on an Inertial Measurement Unit

*Franz Gravenhorst, Timothy Turner, Conny Draper, Richard M. Smith, Gerhard Troester*

### **Session 3H: ACS (Faraday) – Anonymity and Communication Systems**

**Session Chair:** *Prof. Xun Yi, Victoria University, Australia*

Mutual Chip Authentication

*Lucjan Hanzlik, Kamil Kluczniak, Lukasz Krzywiecki, Mirosław Kutylowski*

Celerity Hardware Implementation of the AES with Data Parallel and Pipelining Architecture inside the Round Function

*Hui Li, Xiaotao Zhang, Shouwen Yang*

Toward coercion-resistant end-to-end verifiable electronic voting systems

*Wagner Santos, Ruy Queiroz, Carlos Saraiva, Gleudson Junior*

Server-aided verification proxy re-signature

*Zhiwei Wang, Wei Lv*

Cryptanalysis of 'An Improved Remote Password Authentication Scheme with Smartcard'

*Muhammad Khurram Khan, Debiao He*

Trust and Adaptation in STRATUS

*Paul Robertson, Robert Laddaga, Mark Burstein*

Using Secure Multiparty Computation for Collaborative Information Exchange

*Dennis Tütze, Hans Hofinger and Peter Schoo*

Pseudonymous smart metering without a trusted third party  
*Soeren Finster, Ingmar Baumgart*

**Session 4A: TrustCom (Rathdowne) – Cloud Application Security**  
**Session Chair: *Dr. Xinfeng Ye, Auckland University, New Zealand***

Hierarchical Attribute-based Access Control with Authentication to Outsourced Data in Cloud Computing  
*Xuejiao Liu, Yingjie Xia, Shasha Jiang, Fubiao Xia*

Access Control Management for Cloud  
*Mansura Habiba, Md. Rafiqul Islam, A B M Shawkat Ali*

Cloud Computing: Insider Attacks on Virtual Machines During Migration  
*Adrian Duncan, Michael Goldsmith, Sadie Creese, Jamie Quinton*

A Hybrid Approach for Sub-Tree Anonymization over Big Data using MapReduce on Cloud  
*Xuyun Zhang, Chang Liu, Surya Nepal, Wanchun Dou, Jinjun Chen*

A Framework for Authentication and Authorization Credentials in Cloud Computing  
*Nelson Mimura Gonzalez, Marco Antônio Torrez Rojas, Marcos Vinicius Maciel da Silva, Fernando Redigolo, Tereza Cristina Melo de Brito Carvalho, Charles Christian Miers, Mats Näslund, Abu Shohel Ahmed*

**Session 4B: TrustCom (Bouverie) – Trust Management**  
**Session Chair: *Prof. Burkhard Englert, California State University Long Beach, USA***

On the Design of a Trust Enhanced Distributed Authorisation Architecture for Service Oriented Architectures  
*Aarthi Krishna, Vijay Varadharajan, Nathan Torr*

On the Application of Supervised Machine Learning to Trustworthiness Assessment  
*Sascha Hauke, Sebastian Biedermann, Dominik Heider*

Building Confidence in Information-Trustworthiness Metrics for Decision Support  
*Jason Nurse, Ioannis Agraftotis, Sadie Creese, Michael Goldsmith, Koen Lamberts*

Efficient Fair UC-Secure Two-Party Computation on Committed Inputs  
*Ou Ruan, Cai Fu, Jing Zhou, Lansheng Han, Xiao-Yang Liu*

Trust Enhanced Security Architecture for Detecting Insider Threats  
*Udaya Tupakula, Vijay Varadharajan*

**Session 4C: TrustCom (Lygon) – Data Security and Privacy**  
**Session Chair: *Dr. Weiyu Jiang, Chinese Academy Sciences, China***

Integrating Trust with Cryptographic Role-based Access Control for Secure Cloud Data Storage  
*Lan Zhou, Vijay Varadharajan, Michael Hitchens*

An Online Query Authentication System for Outsourced Databases  
*Ying Zhou, Chen Wang*

Word N-gram Based Classification for Data Leakage Prevention  
*Sultan Alneyadi, Elankayer Sithirasenan, Vallipuram Muthukumarasamy*

Privacy Protected Data Forwarding in Human associated Delay Tolerant Networks  
*Longxiang Gao, Ming Li, Wanlei Zhou, Wen Shi*

S2Logger: End-to-End Data Tracking Mechanism for Cloud Data Provenance  
*Chun Hui Suen, Ryan K L Ko, Yu Shyang Tan, Peter Jagadpramana, Bu Sung Lee*

**Session 4D: TrustCom (Lincoln) – Cyber Security and Privacy****Session Chair: *Dr. Karima Boudaoud, CNRS/University of Nice Sophia Antipolis, France***

A Direct Insight into Victims of Cybercrime

*Nicholas Patterson, Michael Hobbs, Darren Palmer*

Card-present Transactions On The Internet Using The Smart Card Web Server

*Lazaros Kyrillidis, Keith Mayes, Boris Chazalet, Konstantinos Markantonakis*

Single Sign-on Schemes Constructed from Nominative Signatures

*Jingquan Wang, Guilin Wang, Willy Susilo*

Profiling Phishing Email Based on Clustering Approach

*Isredza Rahmi A Hamid, Jemal H. Abawajy*

Developing an Empirical Algorithm for Protecting Text-based CAPTCHAs against Segmentation Attacks

*Lei Pan, Yan Zhou*

**Session 4E: ISPA (Argyle) – High-performance Computing****Session Chair: *Dr. Cal Ribbens, Virginia Tech, USA***

A Hypercubic Overlay Using Bloom-Filter Based Addressing for A Non-Dedicated Distributed Tag-Based Pub/Sub System

*Xiaochuan Yu, Alvin Chan*

KVM-Loongson: An efficient hypervisor on MIPS

*Yunfang Tai, Wanwei Cai, Qi Liu, Ge Zhang*

The Buffered Edge Reconfigurable Cell Array and Its Application

*Rui Shan, Tao Li, Jungang Han*

MapReduce: Limitations, Optimizations and Open Issues

*Vasiliki Kalavri, Vladimir Vlassov*

Scenario-based Execution Method for Massively Parallel Accelerators

*Shinichi Yamagiwa, Shixun Zhang*

**Session 4F: ISPA (Queensberry) – Data Management****Session Chair: *Dr. Aftab A. Chandio, Chinese Academy of Sciences, China***

An Iterative Optimization Framework for Adaptive Workflow Management in Computational Clouds

*Rubing Duan, Long Wang, Xiaorong Li, Rodrigo Calheiros, Rajkumar Buyya*

DataSteward: Using Dedicated Compute Nodes for Scalable Data Management on Public Clouds

*Radu Tudoran, Alexandru Costan, Gabriel Antoniu*

A Data Prefetching Model for Desktop Grids and the Condor Use Case

*Walid Saad, Heithem Abbes, Christophe Cérin, Mohamed Jemni*

A Scalable Multi Swarm-based Algorithms with Lagrangian Relaxation for Constrained Problems

*Antonio Gomez-Iglesias, Andreas Ernst, Gaurav Singh*

Real-Time Effective Framework for Unstructured Data Mining

*Richard Lomotey, Ralph Deters*

**Session 4G: IUCC (Pelham) – Ubiquitous Services****Session Chair: *Dr. Luke Thomas Mirowski, University of Tasmania, Australia***

Platform Zero: A Context-based Computing Platform for Collaboration

*Adam Muhlbauer, Timothy Zelinsky, Salil Kanhere*



A Methodology to Transform an OS-based Application to a Bare Machine Application  
*Uzo Okafor, Ramesh Karne, Alexander Wijesinha, Patrick Appiah-kubi*

Impact of Mobility Models on Social Structure Formation in Opportunistic Networks  
*Halikul Lenando, Mohamad Nazim Jambli, Kartinah Zen*

Comparison SIP and IAX to Voice Packet Signaling Over VOIP  
*Octavio Salcedo Parra, Neil Díaz, Gustavo Lopez Rubio*

Reinventing Mobile Community Computing and Communication  
*Yann Busnel, Nuno Cruz, Denis Gillet, Adrian Holzer, Hugo Miranda*

**Session 4H: WNM (Faraday) – Wireless Networks and Multimedia**  
**Session Chair: Dr. Zubair Baig, KFUPM, Saudi Arabia**

TARS: Trusted Adaptive Routing Strategy with Back-off Observing Mechanism  
*Yiqing Hu, Yan Xiong, Xudong Gong, Qiwei Lu, Mingxi Li, Wenchao Huang*

Formal Verification of the Coordinated Robust Authentication Protocol for Wireless Networks  
*Khosrow Ramezani, Elankayer Sithirasanen, Vallipuram Muthukumarasamy*

TimSim: A Timestep-based Wireless Ad-hoc Network Simulator  
*Chong Yan, Zhiping Jia, Lei Ju, Hui Xia, Huaqiang Xu*

HIWL: An Unsupervised Learning Algorithm for Indoor Wireless Localization  
*Li Li, Wang Yang, Guojun Wang*

A Multi-agent Model for Fire Detection in Coal Mines using Wireless Sensor Networks  
*Zeshan Aslam Khan, Edison Pignaton de Freitas, Tony Larsson, Haider Abbas*

Power Control and Channel Assignment Mechanisms for Cluster-based Multichannel Vehicular Ad-hoc Networks  
*Chi-Hsien Wang, Gwo-Jong Yu*

A Novel Device-Device Beam Discovery Scheme with Cross-layer Design for millimeter-Wave WPAN  
*Pingping Xu, Hongyun Chu, Suheng Zhang*

A Distributed Localization Algorithm Based on Random Diffusion in WSN  
*Qiong Wu, Pingping Xu, Suheng Zhang, Hongyun Chu*

## Thursday 18 July 2013

08:30-17:30	Registration (Parkview Lounge, 4 <sup>th</sup> Floor)							
08:30-09:20	Keynote 9: Prof Geyong Min, Performance Modelling and Analysis of Data-Centre Networks under Bursty and Batch Arrival Traffic (Rathdowne/Bouverie Rooms)							
09:20-10:10	Keynote 10: Prof Laurence T. Yang, A Data-as-a-Service Framework for IoT Big Data (Rathdowne/Bouverie Rooms)							
10:10-10:30	Morning Tea (Parkview Lounge, Pool Deck & Blue's Bar & Grill)							
10:30-12:30	Session 5A: TrustCom (Rathdowne)	Session 5B: TrustCom (Bouverie)	Session 5C: TrustCom (Lygon)	Session 5D: ISPA (Lincoln)	Session 5E: ISPA (Argyle)	Session 5F: IWCDM (Queensberry)	Session 5G: IUCC (Pelham)	Session 5H: M2A2 (Faraday)
12:30-13:30	Lunch (Parkview Lounge, Pool Deck & Blue's Bar & Grill)							
13:30-14:20	Keynote 11: A/Prof Jinjun Chen, Privacy preserving in Cloud with Big Data applications (Rathdowne/Bouverie Rooms)							
14:20-15:10	Panel: Grand Challenges from Big Data: Processing, Communication, Security, and Privacy (Rathdowne/Bouverie Rooms)							
15:10-15:30	Afternoon Tea (Parkview Lounge, Pool Deck & Blue's Bar & Grill)							
15:30-17:30	Session 6A: TrustCom (Rathdowne)	Session 6B: TrustCom (Bouverie)	Session 6C: ISPA (Lygon)	Session 6D: ISPA (Lincoln)	Session 6E: ISPA (Argyle)	Session 6F: IWCDM (Queensberry)	Session 6G: ISSR/SPIoT (Pelham)	Session 6H: M2A2 (Faraday)

### Session 5A: TrustCom (Rathdowne) – Communication Security and Trust

**Session Chair:** *Prof. Pramode Verma, University of Oklahoma-Tulsa, USA*

Distributed Group Key Management Using Multilinear Forms for Multi-privileged Group Communications  
*Wei Zhou, Yang Xu, Guojun Wang*

Research on the anti-attack design principles of low-latency anonymous communication  
*Ming Zheng, Jianping Wu, Haixin Duan*

Securing RTP packets using per-packet selective encryption scheme for real-time multimedia applications  
*Younchan Jung, Enrique Festijo*

Evaluating the Impact of Broadcast Rates and Collisions on Fake Source Protocols for Source Location Privacy  
*Alasdair Thomason, Matthew Leeke, Matthew Bradbury, Arshad Jhumka*

Development and Analysis of Generic VoIP Attack Sequences Based on Analysis of Real Attack Traffic  
*Adnan Aziz, Dirk Hoffstadt, Sebastian Ganz, Erwin Rathgeb*

### Session 5B: TrustCom (Bouverie) – Security Algorithms

**Session Chair:** *Prof. Xu Huang, University of Canberra, Australia*

Security Analysis of a Paillier-based Threshold Proxy Signature Scheme  
*Minghui Zheng, Yongquan Cui, Liang Chen*

A Novel Evidential Evaluation For Internal Attacks With Dempster-Shafer Theory in WSN  
*Muhammad Ahmed, Xu Huang, Hongyan Cui*

PREFETCHing to optimize DNSSEC deployment over large Resolving Platforms  
*Daniel Migault, Stephane Senecal, Stanislas Francfort, Emmanuel Herbert, Maryline Laurent*

Verifiable and Anonymous Encryption in Asymmetric Bilinear Maps  
*Hui Cui, Yi Mu, Man Ho Au*

From Mini House Game to Hobby-driven Behavioral Biometrics-based Password  
*Weiyu Jiang, Ji Xiang, Limin Liu, Daren Zha*

### **Session 5C: TrustCom (Lygon) – Identity Management and Access Control**

**Session Chair:** *Prof. Zhiwei Wang, Nanjing University of Posts and Telecommunications, China*

Towards Automation of Privacy and Security Risks Analysis in Identity Management Systems  
*Ebenezer Painsil*

Identity-based Mediated RSA Revisited  
*Ibrahim Elashry, Yi Mu, Willy Susilo*

Portable Personal Identity Provider in Mobile Phones  
*Md. Sadek Ferdous, Ron Poet*

Multi-Factor Authentication in Key Management Systems  
*Rick Lopes de Souza, Lau Cheuk Lung, Ricardo Felipe Custódio*

A semantic policy framework for context-aware access control applications  
*A. S. M. Kayes, Jun Han, Alan Colman*

### **Session 5D: ISPA (Lincoln) – Scheduling Algorithms**

**Session Chair:** *Dr. Jun Zhang, Deakin University, Australia*

Performance Implications of Task Scheduling by Predicting Network Throughput on the Internet  
*Chunghan Lee, Hirotake Abe, Toshio Hirotsu, Kyoji Umemura*

H-PFSP: Efficient Hybrid Parallel PFSP Protected Scheduling for MapReduce System  
*Yin Li, Chuang Lin, Fengyuan Ren*

Low-Cost Load Balancing for Parallel Particle-In-Cell Simulations with Thick Overlapping Layers  
*Yohei Miyake, Hiroshi Nakashima*

An Optimal Algorithm for Extreme Scale Job Launching  
*Joshua Goehner, Taylor Groves, Dorian Arnold, Dong Ahn, Gregory Lee*

Power Management Support to Optimal Duty Cycling in Stateful Multitasking WSN  
*Carlo Brandolese, Luigi Rucco, William Fornaciari*

### **Session 5E: ISPA (Argyle) – Resource Management**

**Session Chair:** *Prof. Ehsan Atoofian, Lakehead University, Canada*

An Efficient Task Partitioning and Scheduling Method for Symmetric Multiple GPU Architecture  
*Cheng Luo, Reiji Suda*

Performance Optimization of Aho-Corasick Algorithm on a GPU  
*Nhat-Phuong Tran, Myungho Lee, Sugwon Hong, Jongwoo Bae*

Combining Process-based Cache Partitioning and Pollute Region Isolation to Improve Shared Last Level Cache Utilization on Multicore Systems  
*Tao Huang, Jing Wang, Xuetao Guan, Qi Zhong, Keyi Wang*

Hybrid Range Consistent Hash Partitioning Strategy – A New Data Partition Strategy for NoSQL Database  
*Zhikun Chen, Shuqiang Yang, Shuang Tan, Hui Zhao, Li He, Ge Zhang, Huiyu Yang*

Tuning SPMD Applications in order to Increase Performability  
*Hugo Meyer, Ronal Muresano, Dolores Rexachs, Emilio Luque*

**Session 5F: IWCDM (Queensberry) – Data Mining in Cloud Systems**  
**Session Chair: Dr. Shawkat Ali, Central Queensland University, Australia**

A Matrix Transformation Algorithm for Virtual Machine Placement in Cloud  
*Meng Sun, Weidong Gu, Xinchang Zhang, Huiling Shi, Wei Zhang*

Big Data Real-time Processing Based on Storm  
*Wenjie Yang, Xingang Liu, Lan Zhang, Laurence T. Yang*

Environmental Spatio-temporal Ontology for the Linked Open Data Cloud  
*Ahsan Morshed, Jagannath Aryal, Ritaban Dutta*

Detecting Associations in Large Dataset on MapReduce  
*Dong Dai, Xi Li, Chao Wang, Junneng Zhang, Xuehai Zhou*

Protecting Cumulative Node Constraint During XML Update  
*Norfaradilla Wahid, Eric Pardede*

**Session 5G: IUCC (Pelham) – Ubiquitous Applications**  
**Session Chair: Dr. Yulei Wu, Chinese Academy of Sciences, China**

Measuring Walking and Running Cadence using Magnetometers  
*Umran Abdulla, Ken Taylor, Michael Barlow, Khushnood Naqshbandi*

VoIP Spam Prevention  
*Saeed Farooq Khan, Marius Portmann, Neil W. Bergmann*

An Energy-aware Task Scheduling Algorithm for a Heterogeneous Data Center  
*Shuo Zhang, Baosheng Wang, Baokang Zhao, Jing Tao*

An OpenFlow-Based Dynamic Path Adjustment Algorithm for Multicast Spanning Trees  
*Jingguo Ge, Hanji Shen, Yuepeng E, Yulei Wu*

High Radix Montgomery Modular Multiplier on Modern FPGA  
*Pingjian Wang, Zongbin Liu, Lei Wang, Ji Xiang*

A Model-Based Approach for RFID Application Testing  
*Andreas Huebner, Christian Facchi, Markus Meyer, Helge Janicke*

**Session 5H: M2A2 (Faraday) – Multithreaded Algorithms**  
**Session Chair: Dr. Naoki Yonezawa, Kanagawa University, Japan**

An Automatic Parallel-Stage Decoupled Software Pipelining Parallelization Algorithm Based on OpenMP  
*Xiaoxian Liu, Rongcai Zhao, Lin Han, Peng Liu*

Mobile Parallel Computing Algorithms for Single-Buffered, Speed-Scalable Processors  
*Rashid Khogali, Olivia Das, Kaamran Raahemifar*

Probabilistic analysis of parallel program with partially eliminated barriers  
*Naoki Yonezawa, Ken'ichi Katou, Issei Kino, Koichi Wada*

Simulator Implementation and Performance Study of A Polymorphous Array Computer  
*Hucai Huang, Tao Li, Jungang Han*

Multicore Parallel Design of Robot Control Architectures  
*Carlos Dominguez, Houcine Hassan, Vicent Mayans, Alfons Crespo*

COSCHED: A Scheduling Agent Maximizing Cloud Broker's Revenues under the CompatibleOne Architecture

*Felipe Díaz Sánchez, Maurice Gagnaire, James Marshall, Jean-Pierre Laisné*

#### **Session 6A: TrustCom (Rathdowne) – Data Protection**

**Session Chair:** *Dr. Armen Aghasaryan, Alcatel Lucent Bell Labs, France*

Feature Based Video Watermarking Resistant to Geometric Distortions

*Xiao-Chen Yuan, Chi-Man Pun*

Exploring the Guessability of Image Passwords using Verbal Descriptions

*Soumyadeb Chowdhury, Ron Poet, Lewis Mackenzie*

Public Verification of Outsourced Computation of Polynomial Functions

*Peili Li, Haixia Xu, Shu Guo*

Mitigating Malicious Updates: Prevention of Insider Threat to Databases

*Harini Ragavan, Brajendra Panda*

De-anonymization attack on geolocated data

*Sébastien Gambs, Marc-Olivier Killijian, Miguel Nunez del Prado Cortez*

#### **Session 6B: TrustCom (Bouverie) – Trusted Computing Applications**

**Session Chair:** *Dr. Lei Pan, Deakin University, Australia*

Verifiable and Privacy Preserving Electronic Voting with Untrusted Machines

*Anindya Iqbal, Tishna Sabrina, Manzur Murshed, Mortuza Ali*

Role Mining Using Boolean Matrix Decomposition With Hierarchy

*Wei Ye, Ruixuan Li, Huaqing Li*

A Secure Social-aware Incentive Scheme for Delay Tolerant Networks

*Guowei Wu, Jia Wang, Lin Yao*

A Place-aware StereotypicalTrust Supporting Scheme

*Gonzalo Huerta-Canepa, Seungwook Han, Dongman Lee*

An Endorsement Trust Model

*Charles Thevathayan, James Harland, Peter Bertok*

#### **Session 6C: ISPA (Lygon) – Multithreaded Computing**

**Session Chair:** *Dr. Naoki Yonezawa, Kanagawa University, Japan*

A Parallel Runtime Framework For Communication Intensive Stream Applications

*Servesh Muralidharan, Kevin Casey, David Gregg*

A New Design Paradigm for Designing Reactive Pervasive Concurrent Systems with an Ambient Intelligence Example

*Heejong Park, Zoran Salcic, Kevin I-Kai Wang, Udayanto-Dwi Atmojo, Wei-Tsun Sun, Avinash Malik*

A Path-Adaptive Opto-Electronic Hybrid NoC for Chip Multi-Processor

*Mingzhe Zhang, Da Wang, Xiaochun Ye, Liqiang He, Dongrui Fan*

A Study of Leveraging Memory Level Parallelism for DRAM System on Multi-Core/Many-Core Architecture

*Licheng Chen, Yongbing Huang, Yungang Bao, Guangming Tan, Zehan Cui, Mingyu Chen*

Multi-core Deployment Optimization Using Simulated Annealing and Ant Colony Optimization

*Hamilton Turner, Jules White*

**Session 6D: ISPA (Lincoln) – Multicore Algorithms****Session Chair: Dr. Vladimir Vlassov, KTH Royal Institute of Technology, Sweden**

A Next Generation Object-Oriented Environment for Real-Time Database Application Development  
*Zied Ellouze, Nada Louati, Rafik Bouaziz*

Genome Assembly on a Multicore System  
*Abhishek Biswas, Desh Ranjan, Mohammad Zubair*

The Value of Automation: A Study of MPI Application Migration Methods  
*Karolina Sarnowska-Upton, Andrew Grimshaw*

Advanced Validation of the DVMS Approach to Fully Distributed VM Scheduling  
*Flavien Quesnel, Jonathan Pastor, Adrien Lèbre, Mario Südholt, Daniel Balouek*

Partitioned Fixed-priority Real-time Scheduling Based on Dependent Tasks-Split on Multicore Platform  
*Guowei Wu, Ying Li, Jiankang Ren, Chi Lin*

**Session 6E: ISPA (Argyle) – Reliability and Performance****Session Chair: Prof. Jemal Abawajy, Deakin University, Australia**

Enhanced method for the signature adaptability to the application behavior  
*Alvaro Wong, Dolores Rexachs, Emilio Luque*

Extrapolation in a Program Robustness Evaluation  
*Joao Gramacho, Dolores Rexachs, Emilio Luque*

SeARuM: A cloud-based Service for Association Rule Mining  
*Daniele Apiletti, Elena Baralis, Tania Cerquitelli, Silvia Chiusano, Luigi Grimaudo*

TurboSockets: Democratizing Distributed Deduplication  
*João Salada, João Barreto*

Dependency-based Energy-Efficient Scheduling for Homogeneous Multi-core Clusters  
*Yanheng Zhao, Xin Li, Zhiping Jia, Lei Ju, Ziliang Zong*

**Session 6F: IWCDM (Queensberry) – Data Mining in Security and Privacy Applications****Session Chair: Dr. Shawkat Ali, Central Queensland University, Australia**

An Algorithmic Approach to Securing the Three-stage Quantum Cryptography Protocol  
*Mayssaa El Rifai, Pramode K. Verma*

Social Spam Discovery using Bayesian Network Classifiers based on Feature Extractions  
*Dae-Ha Park, Eun-Ae Cho, Byung-Won On*

The Role of Trust in Absorptive Capacity Operationalization  
*Athar Qureshi, Nina Evans*

An Adaptive Rating System for Service Computing  
*Xinfeng Ye, Jupeng Zheng*

**Session 6G: ISSR/SPIoT (Pelham) – Security in e-Science and e-Research / Security and Privacy in Internet of Things****Session Chair: Dr. Md Zakirul Alam Bhuiyan, Central South University, China**

Detecting Intrusive Activity in the Smart Grid Communications Infrastructure using Self-Organizing Maps  
*Zubair Baig, Saif Ahmad, Sadiq Sait*

A Defense Security Approach for Infrastructures against Hacking  
*Saad Alsunbul, Phu Le, Jefferson Ta*

A Lightweight Design of Malware Behavior Representation  
*Yong Qiao, Yuexiang Yang, Jie He, Lin Ji, Chuan Tang*

Use of Role Based Access Control for Security-purpose Hypervisors  
*Manabu Hirano, David W Chadwick, Suguru Yamaguchi*

Exposing Clone RFID Tags at the Reader  
*Luke Mirowski*

ProTACD: A Generic Privacy Process for Vehicle Development  
*Naim Asaj, Florian Schaub, Michael Müter, Albert Held, Michael Weber*

**Session 6H: M2A2 (Faraday) – Multicore and Multithreaded Applications**  
**Session Chair: Dr. Ritaban Duttay, CSIRO, Australia**

Performance Analysis of Load-Awareness Anycasting based on OpenFlow  
*Jingguo Ge, Chuan Du, Yulei Wu, Yuepeng E*

Parallel Realization of Cognitive Cells on Film Mammography  
*Alex James, Sherin Sugathan*

Fast and Accurate On-line Prediction of Performance and Power Consumption in Multicore-based Systems  
*Young-Ho Lee, Jihong Kim*

Performance Evaluation of the Time Analysable On-Demand Coherent Cache  
*Arthur Pyka, Mathias Rohde, Sascha Uhrig*

Communication pipelining for Code Generation from Simulink Models  
*Rongjie Yan, Kai Huang, Min Yu, Xiaomeng Zhang*

An Optimizing Strategy Research of LDPC Decoding Based on GPGPU  
*Luechao Yuan, Zuocheng Xing, Guitao Fu, Xiaobao Chen*

## Welcome Reception

Welcome reception will be held in Parkview Lounge & Pool Deck on the 4<sup>th</sup> Floor at Rydges on Swanston on Monday 15 July 2013, 18:00-21:00.

## Registration Desk

The Registration Desk will be located Parkview Lounge on the 4<sup>th</sup> Floor at Rydges on Swanston. The Registration Desk will be open to assist you at the following times:

Monday 15 July 2013, 15:00 – 17:30  
Tuesday 16 July 2013, 8:00 – 17:30  
Wednesday 17 July 2013, 8:00 – 17:30  
Wednesday 18 July 2013, 8:00 – 17:30

## Conference Banquet

The Conference Banquet will be at Rathdowne/Bouverie/Lygon Rooms on the 4<sup>th</sup> Floor at Rydges on Swanston, on Wednesday 17 July 2013, 18:00 – 21:30. The banquet will begin with ½ hour of canapes at 18:00, while the sit-down courses will start at 18:30.

## Name Badges and Tickets

All delegates, sponsors and speakers of IEEE TrustCom/ISPA/IUCC 2013 and associated workshops will be provided with a name badge, to be collected upon registration. This badge must be worn at all times as it is your official pass to all sessions of the conferences, welcome reception, lunches, morning and afternoon teas. If you have indicated on your registration form that you will be attending the Conference Banquet, these tickets will also be issued to you with your name badge.

## Presentation Information

### Language

The presentation language of IEEE TrustCom/ISPA/IUCC 2013 and associated workshops is English.

### Checking In

Session Chairs are requested to register at least 2 hours before their session, or as soon as the Registration Desk is open.

### Setting Up

You are required to arrive at the room (in which you will deliver your talk) **15 minutes before the commencement of the session.** Upon arrival please confirm your attendance with the Session Chair and familiarize yourself with the venue.

Please bring with you a single paragraph summary, including your name (as you would like to be introduced), affiliation and research interests (maximum 100 words). Please present this to the session Session Chair upon arrival, for use for introductory purposes, prior to your talk.



Upon arrival, please copy your slides file to the presentation computer. If you plan to use your own equipment, please ensure it is ready to go prior to the session commencing, since there is very little time between presentations. If you have requested optional equipment, ensure that is in the room. In the larger conference rooms please, make sure you familiarise yourself with the audio system. For all assistance, please speak to the Session Chair.

### **Timing**

Please ensure you check the program for the exact time of your session and where your paper falls within the session.

It is recommended that all IEEE TrustCom/ISPA/IUCC 2013 paper presentations use 20 minutes presentation time and 5 minutes question time. However, the Session Chairs will determine the exact presentation time for each paper, based on the number of presentations in each session. The Session Chairs will ensure that you do not over-run the time allocated.

**Please keep strictly to this time guideline.**



## **Deakin University**

Deakin University ([www.deakin.edu.au](http://www.deakin.edu.au)) was established in 1974 and is named after Alfred Deakin, who is often called Australia's Voice of Federation and was Prime Minister three times between 1903 and 1910. Around 27,000 full-time equivalent students, including over 6,000 international students, study at Deakin's four campuses in Victoria. Deakin University consists of four Faculties: Faculty of Arts and Education, Faculty of Business and Law, Faculty of Health, and Faculty of Science, Engineering and Built Environment.

## **School of Information Technology**

School of Information Technology ([www.deakin.edu.au/scitech/it](http://www.deakin.edu.au/scitech/it)) has 40 academic staff and over 1200 full-time equivalent students, including around 300 international students, 100 postgraduate students, and over 40 PhD students. The School offers a range of teaching programmes in information technology covering a broad spectrum from telecommunications, through mathematics, to the information technology end of the spectrum which covers IT security, computer science and software development, games design and development, network computing, mobile and apps development, and information technology services. The School's research strength includes Network Security, Distributed Systems and Clouds, Information Security and Forensics, and Signal Processing, Computational Intelligence and Pattern Analysis.

## **Network Security and Computing Laboratory (NSCLab)**

NSCLab ([anss.org.au/nsclab](http://anss.org.au/nsclab)) is dedicated to network and system security research at Deakin University, Australia. Our primary goal is to provide solutions to the security, privacy, reliability, trust, and performance problems of complex network and system environments. We build and deliver excellence in research and commercial outcomes. Our primary goal is to provide solutions to the security, privacy, reliability, trust, and performance problems of complex network and system environments. We build and deliver excellence in research and commercial outcomes. NSCLab aspires to be one of the world-class research labs in network and system security.