

IEEE UIC  
IEEE ATC  
ICA3PP

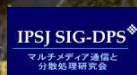
# 2012

and its Symposia/Demo/Workshops

September 4~7, 2012

Kyushu Sangyo University, Fukuoka, Japan

# PROGRAM



The 9<sup>th</sup> IEEE International Conference on Ubiquitous Intelligence and Computing  
(IEEE UIC 2012)

The 9<sup>th</sup> IEEE International Conference on Autonomic and Trusted Computing  
(IEEE ATC 2012)

The 12<sup>th</sup> International Conference on Algorithm and Architectures for  
Parallel Processing (ICA3PP 2012)  
*and its Symposia/Demo/Workshops*

September 4~7, 2012

Kyushu Sangyo University, Fukuoka, Japan

# PROGRAM

*Sponsored by:*

IEEE, IEEE Computer Society  
IEEE Technical Committee on Scalable Computing  
Fukuoka Convention and Visitors Bureau (FCVB)

*In cooperation with:*

The Information Processing Society of Japan (IPSJ)  
The Institute of Electronics, Information and Communication Engineers (IEICE)  
The IPSJ Special Interest Group on Distributed Processing Systems (IPSJ SIG-DPS)  
The IEICE Special Interest Group on Dependable Computing (IEICE SIG-DC)  
The IPSJ Special Interest Group on Computer Security (IPSJ SIG-CSEC)  
The IPSJ Special Interest Group on Mobile Computing and Ubiquitous Communication  
(IPSJ SIG-MBL)

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## IEEE UIC/ATC/ICA3PP 2012 Program Overview

<b>Day 1 - September 4, 2012 (Tuesday)</b>								
	Room #12105	Room #12106	Room #12107	Room #12108	Room #12101	Room #12102	Room #12103	Room #12104
08:00-17:00	Registration							
09:20-09:50	Opening (Bldg 12, Room #12107)							
09:50-10:00	Break							
10:00-11:00	Keynote Talk 1 - Kazuo Iwano (Mitsubishi Corporation, Japan) Bldg 12, Room #12107							
11:00-11:20	Break							
11:20-13:00 Session 1 (100 minutes)	<b>UIC 1a</b>	<b>UIC 1b</b>	<b>ICA3PP 1a</b>	<b>ICA3PP 1b</b>	<b>ATC 1</b>	<b>MENS 1</b>	<b>UIPM 1</b>	<b>USMAP 1</b>
13:00-14:30	Lunch (Demo Session/Display, 13:00~15:50)							
14:30-15:30	Keynote Talk 2 - Miroslaw Malek (Humboldt University of Berlin, Germany) Bldg 12, Room #12107							
15:30-15:50	Break (Demo Session/, 13:00~15:50)							
15:50-17:30 Session 2 (100 minutes)	<b>UIC 2a</b>	<b>UIC 2b</b>	<b>ICA3PP 2a</b>	<b>ICA3PP 2b</b>	<b>ATC 2</b>	<b>MENS 2</b>	<b>UIPM 2</b>	<b>USMAP 2</b>
17:30-18:00	Free Time							
18:00-20:00	Welcome Reception (Bldg 1, 7 <sup>th</sup> floor)							

<b>Day 2 - September 5, 2012 (Wednesday)</b>								
	Room #12105	Room #12106	Room #12107	Room #12108	Room #12101	Room #12102	Room #12103	Room #12104
08:00-17:00	Registration							
09:00-10:20 Session 3 (80 minutes)	<b>UIC 3a</b>	<b>UIC 3b</b>	<b>ICA3PP 3a</b>	<b>ICA3PP 3b</b>	<b>ATC 3</b>	<b>CDCN 1</b>	<b>UFirst 1</b>	<b>WEISS 1</b>
10:20-10:40	Break							
10:40-12:00 Session 4 (80 minutes)	<b>UIC 4a</b>	<b>UIC 4b</b>	<b>ICA3PP 4a</b>	<b>ICA3PP 4b</b>	<b>ATC 4</b>	<b>CDCN 2</b>	<b>UFirst 2</b>	<b>WEISS 2</b>
12:00-13:20	Lunch							
13:20-14:20	Keynote Talk 3 - Wanlei Zhou (Deakin University, Australia) Bldg 1, Room S201							
14:20-14:40	Break							
14:40-15:40	IEEE UIC/ATC Panel Discussion (Bldg 1, Room S201)							
15:40-16:00	Break							
16:00-17:00	ICA3PP Panel Discussion (Bldg 1, Room S201)							
17:00-19:00	Free Time							
19:00-21:00	Banquet (Hotel Nikko Fukuoka)							

### Day 3 - September 6, 2012 (Thursday)

	Room #12105	Room #12106	Room #12107	Room #12108	Room #12101	Room #12102	Room #12103	Room #12104
08:00-12:00	Registration							
09:00-10:00	Keynote Talk 4 - Masafumi Yamashita (Kyushu University, Japan) Bldg 12, Room #12107							
10:00-10:20	Break							
10:20-12:00 Session 5 (100 minutes)	<b>UIC 5a</b>	<b>UIC 5b</b>	<b>ICA3PP 5a</b>	<b>ICA3PP 5b</b>	<b>ATC 5</b>	<b>WiNA</b>	<b>DDCPD</b>	<b>GreenPS 1</b>
12:00-13:00	Lunch							
13:00-20:00	Half-Day Tour							

### Day 4 - September 7, 2012 (Friday)

	Room #12105	Room #12106	Room #12107	Room #12108	Room #12101	Room #12102	Room #12103	Room #12104
08:00-12:00	Registration							
09:00-10:40 Session 6 (100 minutes)	<b>UIC 6a</b>	<b>UIC 6b</b>	<b>ICA3PP 6a</b>	<b>ICA3PP 6b</b>	<b>ATC 6</b>	<b>UISTA 1</b>	<b>UFirst 3</b>	<b>GreenPS 2</b>
10:40-11:00	Break							
11:00-12:40 Session 7 (100 minutes)	<b>UIC 7a</b>	<b>UIC 7b</b>	<b>ICA3PP 7a</b>	<b>ICA3PP 7b</b>	<b>ATC 7</b>	<b>UISTA 2</b>	<b>UISTA 3</b>	<b>GreenPS 3</b>
12:40-13:30	Lunch							
13:30-14:00	Closing Session							

**The 2012 IEEE International Conference on Autonomic and Trusted Computing  
(ATC 2012)**

**Session Chair: Jianhua Ma, Hosei University, Japan**

***Keynote Talk 1: Retrospect of Autonomic Computing and its Influences on the Recent Computing Trends***

**Kazuo Iwano (Mitsubishi Corporation, Japan)**

**Summary:**

This talk covers the original concept and technology of Autonomic Computing which was initiated by IBM in 2001. Although the Autonomic Computing initiative started a decade ago, it has been affecting ways of service delivery, infrastructure, and its architecture in a major way. The talk will elaborate on such influences of Autonomic Computing on the recent computing trends such as Grid Computing, Service Oriented Architecture, Cloud Computing, Cyber Physical Systems, and Smarter Planet. Moreover, it will also cover topics related to dependability.

**About the keynote speaker**



Dr. Kazuo Iwano helps Mitsubishi Corporation as an advisor to develop new business opportunities based on information technology focusing on services and infrastructure in society. Before joining Mitsubishi Corporation in March 2012, he had been in IBM and engaged in Research and Development and Emerging Businesses. After graduating Tokyo University in Japan with Mathematics major, he joined IBM Japan in 1975. He acquired Ph. D. in Computer Science from Princeton University in 1987. He was Director of Tokyo Research Laboratory, IBM Research from 1995 to 2000. During his stay in T. J. Watson Research Center from 2000 to 2003, he was a key member of the Autonomic Computing initiative as Director of

Autonomic Computing, IBM Research. He was also in charge of Emerging Business in IBM Asia Pacific and Japan from 2002 to 2003 focusing on Autonomic Computing and Grid Computing, and he was in charge of Yamato Software Development from 2003 to 2008. He was, then, in charge of Smarter Cities and Cloud Computing as VP of Smarter Cities CTO and VP, Future Value Creation Team from 2009 to March 2012.

His research interest includes combinatorial optimization, cloud computing, and Cyber Physical Systems. He is a member of IEEE, ACM, and SIAM, a fellow of Information Processing Society of Japan since 2003, and an associated member of Science Council of Japan since 2004. He has been a visiting professor of Tokyo Institute of Technology since 2010.

**The 2012 International Conference on Algorithms and Architectures for Parallel Processing  
(ICA3PP 2012)**

**Session Chair: Yoshiaki Kakuda, Hiroshima City University, Japan**

***Keynote Talk 2: Securability: the Key Challenge for Autonomic and Trusted Computing***

**Miroslaw Malek (Humboldt University of Berlin, Germany)**

**Summary:**

Rapid proliferation of computing and communication systems, ranging from clouds to cyber-physical systems, puts ever-growing demands on dependability and security. Securability, the key challenge for autonomic and trusted computing, focuses on both these properties, namely dependability and security. Main techniques to meet this challenge will be outlined and concepts such as proactive fault management, failure prediction, translucency and qq-plane will be introduced.

**About the keynote speaker**



Miroslaw Malek is professor and holder of Chair in Computer Architecture and Communication at the Department of Computer Science at Humboldt University in Berlin. His research interests focus on dependable architectures and services in parallel, cloud, distributed and embedded computing environments including failure prediction, dependable architectures and service availability. He has participated in two pioneering parallel computer projects, contributed to the theory and practice of parallel network design, developed the comparison-based method for system diagnosis, codeveloped comprehensive WSI and networks testing techniques, proposed the consensus-based framework for responsive (fault-tolerant, real-time) computer systems design and has made numerous other

contributions, reflected in over 200 publications and nine books.

He has supervised 26 Ph.D. dissertations and three habilitations (ten of his students are professors) and founded, organized and co-organized numerous workshops and conferences. He served and serves on editorial boards of several journals and is consultant to government and companies on technical and strategic issues in information technology. Malek received his PhD in Computer Science from the Technical University of Wroclaw in Poland, spent 17 years as professor at the University of Texas at Austin and was also, among others, visiting professor at Stanford, Universita di Roma “La Sapienza”, Politecnico di Milano, Keio University, Technical University in Vienna, New York University, Chinese University of Hong Kong, and guest researcher at Bell Laboratories and IBM T.J. Watson Research Center.

**The 2012 IEEE International Conference on Ubiquitous Intelligence and Computing  
(UIC 2012)**

**Session Chair: Laurence Yang, St. Francis Xavier Univ., Canada**

***Keynote Talk 3: Trust Management and Privacy Preservation in Wireless and Sensor Networks***

**Wanlei Zhou (Deakin University, Australia)**

**Summary:**

Because of the wireless transmission requirement and the self-organizing nature of its architecture for a Wireless and Sensor Network (WSN), the trust management and privacy protection for WSNs have become an especially challenging problem. In this talk, we analyze current threats and attacks in WSNs and survey state-of-the-art trust management and privacy protection schemes in WSNs. Then we classify and describe trust management schemes into two aspects in secure routing and secure data, respectively and privacy protection schemes into data-oriented and context-oriented privacy, respectively. Finally we try to present a clear direction to design and construction of trust mechanisms and privacy protection techniques in WSNs and discuss some interesting and challenging open issues on this topic.

**About the keynote speaker**



Professor Wanlei Zhou received the B.Eng (Computer Science and Engineering) and M.Eng (Computer Science and Engineering) degrees from Harbin Institute of Technology, Harbin, China in 1982 and 1984, respectively, and the PhD degree from The Australian National University, Canberra, Australia, in 1991. He also received a DSc degree (a higher Doctorate degree) from Deakin University in 2002 for his substantial contribution to knowledge and authoritative standing in the field of distributed computing. He is currently the Chair Professor in Information Technology and Head of School, School of Information Technology, Deakin University. Before joining Deakin University, Professor Zhou served as a system programmer in HP at Massachusetts, USA; a lecturer in Monash University, Melbourne, Australia; and a lecturer in National University of Singapore, Singapore. His research interests include theory and practical issues of building distributed systems, security and reliability of computer networks, bioinformatics, and e-learning. Professor Zhou has published more than 200 papers in refereed international journals and refereed international conferences proceedings and has edited 5 books and authored 1 book. He has also chaired a number of international conferences. Prof Zhou is a Senior Member of the IEEE.



**The 2012 IEEE International Conference on Autonomic and Trusted Computing  
(ATC 2012)**

Session Chair: Koji Nakano, Hiroshima University, Japan

***Keynote Talk 4: Autonomous Distributed Systems of Mobile Robots***

**Masafumi Yamashita (Kyushu University, Japan)**

**Summary:**

We regard a set of autonomous mobile robots as a distributed system and investigate it from the view of distributed computing. After introducing the model of mobile robot system, we observe that a system of anonymous and memory-less robots can successfully exhibit some autonomous properties such as the self-organization and the self-stability, which are considered to be an important property required for e.g., robust sensor networks. Through the talk, we explore what problems the robots can solve without identifiers and memory, and discuss why they can. We then come up with the fact that molecules can exhibit autonomy without identifiers and memory -- a similarity between robots and molecules, which may justify an abuse of our using the robot model as a model of more general distributed systems including e.g., molecular computing.

**About the keynote speaker**



Dr. Yamashita received his Doctor of Engineering degree from Nagoya University, Nagoya, Japan in 1981. From 1980 to 1985, he was a research associate at Toyohashi University of Technology. In 1985, he joined Hiroshima University as an associate professor, and was a professor from 1992 to 1998. Since 1998, he is a professor at Kyushu University. He has held visiting appointments many times with Simon Fraser University, Ottawa University, Carleton University, University of Wisconsin-Milwaukee and Paris 6 University. His research interest includes distributed algorithms. He is a member of IEICE, IPSJ, JSIAM and IEEE.

# IEEE UIC/ATC Joint Panel on Smart Planet Challenges: Impediments and Enablers

**Panel Chair: Professor Sumi Helal, *University of Florida, USA***

**Panelists:**

**Professor Christian Becker, *University of Mannheim, Germany***

**Professor Wanlei Zhou, *Deakin University, Australia***

**Professor Zhiwen Yu, *Northwestern Polytechnical University, China***

**Professor Jadwiga Indulska, *University of Queensland, Australia***

**Kazuo Iwano, *Mitsubishi Corporation, Japan***

Recent advances in Pervasive Computing and Intelligent Environments research give a glimpse into the future of our planet and reveal exciting visions of smart everything - smart cities, smart homes, smart workplaces, smart hotels, smart schools, and much more. Driven by technological evolution offering low power many-things and wireless almost-everything (e.g., IEEE 802.15.4 radio, wireless sensor networks, sensor platforms), we could, in only a decade, envision and prototype impressive cyber-physical systems and ubiquitous applications. In most of these systems, the goal has been clear and convincing, and the technology proved to be promising and exciting. But prototyping is only a beginning, and much remains to be innovated and done before smart cities and smart environments become common places.

This panel will discuss the exciting and promising future of smart planet in terms of the challenging impediments and the potential enablers. Some of the challenges include:

- *The need to integrate research and education across disciplines.* Many research disciplines must collaborate among and within themselves, including domain experts (of the particular environment, e.g., gerontologist for assisted living spaces), behavior scientists, engineers, computer scientists. Collaboration within the computer science and engineering discipline is key enabler to a smart planet.
- *The need for novel cyber-physical software architectures.* Systems support and middleware are essential foundation to building any systems – a smart planet is no exception. Software engineering is urgently needed to understand and support the full lifecycle of intelligent environments and smart spaces. New programming models are also needed for developing safe and adaptive applications and services. New notions of trust must be formulated and supported to ensure symbiotic relationship between the users and their smart environments.
- *Broader support is needed for effective human computer interaction.* Understanding the broader requirements of human computer interaction is crucial for both individuals and the masses. Effective persuasion is also proving to be of paramount importance to the success of the operation of such smart spaces.
- *The need to integrate computational intelligence with systems research.* Without machine learning and computational intelligence techniques, the potential utility and “ceiling of goals” of smart spaces would be severely limited. Without expanding the computer system’s research to encompass proven and established machine learning and computational intelligence techniques, it will be difficult to increase the capacity of appropriately trained smart space engineers.

Panelists will present their position statements and highlight what they identify as challenges and enablers to smart planet progress and advancements.



**Professor Sumi Helal**

Director of the Mobile & Pervasive Computing Laboratory, University of Florida, USA

Email: [helal@cise.ufl.edu](mailto:helal@cise.ufl.edu)

*Short Biography*

Sumi Helal is a Professor at the Computer and Information Science and Engineering Department (CISE) at University of Florida (UF), and a Finland Distinguished Professor (FiDiPro) at Aalto University, Finland. He is a pioneer and recognized leader in the field of Pervasive and Ubiquitous Computing. He is well known, worldwide, for his interdisciplinary research on smart spaces and Health Telematics in support of Health Care, Aging, Disabilities and Independence. He directs the Mobile and Pervasive Computing Laboratory in the CISE department at UF. He is co-founder and director of the Gator Tech Smart House, an experimental home for applied research in the domains of eldercare and health telematics. He led and directed the NIDRR-funded Rehabilitation Engineering Research Center (RERC) on Successful Aging (2001-2007), and is currently leading a continuation project on smart home based personal health and independence, funded by the National Institutes of Health (NIH).

Dr. Helal organized over 20 IEEE and ACM conferences or workshops and is currently serving as the associate Editor-in-Chief of IEEE Computer, the flagship magazine of the IEEE Computer Society. Dr. Helal earned his B.E. and M.E. degrees summa cum laude in Computer Engineering and Automatic Control from Alexandria University, Egypt, in 1982 and 1985 respectively. He earned his Ph.D. in Computer Sciences from Purdue University in 1991.



**Professor Dr. Christian Becker**

Chair of Information Systems II, University of Mannheim, Germany

Email: [christian.becker@uni-mannheim.de](mailto:christian.becker@uni-mannheim.de)

*Short Biography*

Christian Becker is a full professor of Information Systems at the University of Mannheim since 2006. Prior to this, he was a visiting professor for distributed systems at the University of Duisburg-Essen in Spring Term 2006. He studied Computer Science at the Universities of Karlsruhe and Kaiserslautern where he received the Diploma in 1996. From 1997 till 2001 he was a researcher at the distributed systems and operating systems group at the University of Frankfurt where he received his PhD in 2001 with a thesis about “Quality of Service Management in Distributed Object Systems”. In 2001 he joined the distributed systems group at the University of Stuttgart as Post Doc. His research focused on system support for Pervasive Computing and Peer to Peer Computing. He is specifically interested in architectures for adaptive systems. In 2004 he received the *venia legendi* (Habilitation) for Computer Science (Informatik). Christian’s research interests are Distributed Systems, Self-Organizing Systems and Context-Aware Computing.



**Professor Wanlei Zhou**

Head of School of Information Technology,  
Deakin University, Melbourne, Australia  
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*Short Biography*

Professor Wanlei Zhou received the B.Eng and M.Eng degrees from Harbin Institute of Technology, Harbin, China in 1982 and 1984, respectively, and the PhD degree from The Australian National University, Canberra, Australia, in 1991. He is currently the Chair Professor of Information Technology and the Head of the School of Information Technology at Deakin University, Melbourne, Australia.



**Professor Zhiwen Yu**

Professor & Vice-Dean, School of Computer Science  
Northwestern Polytechnical University, China  
Email: [zhiwenyu@nwpu.edu.cn](mailto:zhiwenyu@nwpu.edu.cn)

*Short Biography*

Dr. Zhiwen Yu is currently a professor and vice dean of the School of Computer Science, Northwestern Polytechnical University, P. R. China. He received his B.Eng, M.Eng and Ph.D. degree of Engineering in computer science and technology in 2000, 2003 and 2005 respectively from the Northwestern Polytechnical University. He has worked as a research fellow at the Academic Center for Computing and Media Studies, Kyoto University, Japan from Feb. 2007 to Jan. 2009, and a post-doctoral researcher at the Information Technology Center, Nagoya University, Japan in 2006-2007. He has been a visiting researcher at the Context-Aware Systems Department, Institute for Infocomm Research (I2R), Singapore from Sep. 2004 to May 2005. He has been an Alexander von Humboldt Fellow at the Mannheim University, Germany from Nov. 2009 to Oct. 2010.



**Professor Jadwiga Indulska**

School of Information Technology & Electrical Engineering,  
University of Queensland, Australia  
Email: [jaga@itee.uq.edu.au](mailto:jaga@itee.uq.edu.au)

*Short Biography*

Jadwiga Indulska is a Professor in the School of Information Technology and Electrical Engineering at The University of Queensland, Brisbane, Australia. She received a Master degree in Mathematics from Jagiellonian University and her PhD degree in Computer Science from AGH University of Science and Technology, both in Krakow, Poland. Her research interests are in the areas of computer networks, distributed computing and pervasive/ubiquitous computing. Over the last 10 years, her research has addressed many problems in pervasive and autonomic computing including context

information models for context-aware applications; autonomic management of context information; privacy of context information; software engineering of context-aware applications; balancing user control and software autonomy; and autonomic, rapidly deployable mesh networks. She has led research projects on interoperability of distributed applications, mobile computing, and pervasive computing at the DSTC, an Australian Government funded Collaborative Research Centre on Distributed Systems Technology (1992- 2005). She has been a Research Leader at NICTA (Australian National Centre of Excellence in Information and Communication Technology) since 2006.



**Dr. Kazuo Iwano**  
*Adviser, Mitsubishi Corporation, Japan*

*Short Biography*

Dr. Kazuo Iwano helps Mitsubishi Corporation as an advisor to develop new business opportunities based on information technology focusing on services and infrastructure in society. Before joining Mitsubishi Corporation in March 2012, he had been in IBM and engaged in Research and Development and Emerging Businesses. After graduating Tokyo University in Japan with Mathematics major, he joined IBM Japan in 1975. He acquired Ph. D. in Computer Science from Princeton University in 1987. He was Director of Tokyo Research Laboratory, IBM Research from 1995 to 2000. During his stay in T. J. Watson Research Center from 2000 to 2003, he was a key member of the Autonomic Computing initiative as Director of Autonomic Computing, IBM Research. He was also in charge of Emerging Business in IBM Asia Pacific and Japan from 2002 to 2003 focusing on Autonomic Computing and Grid Computing, and he was in charge of Yamato Software Development from 2003 to 2008. He was, then, in charge of Smarter Cities and Cloud Computing as VP of Smarter Cities CTO and VP, Future Value Creation Team from 2009 to March 2012.

His research interest includes combinatorial optimization, cloud computing, and Cyber Physical Systems. He is a member of IEEE, ACM, and SIAM, a fellow of Information Processing Society of Japan since 2003, and an associated member of Science Council of Japan since 2004. He has been a visiting professor of Tokyo Institute of Technology since 2010.

# ICA3PP 2012 Panel on Future and Challenges of Parallel and Distributed Computing

**Panel Chair: Professor Xu Huang, *University of Canberra, Australia***

**Panelists:**

**Professor Mirosław Malek, *Humboldt-Universität zu Berlin, Germany***

**Professor Stephen S. Yau, *Arizona State University, USA***

**Professor Koji Nakano, *Hiroshima University, Japan***

**Professor Camille Coti, *University of Paris North (Paris XIII), France***

Today, both parallel and distributing computing have become ubiquitous in the forms of clouds and cyber physical systems. We have witnessed the fast developing technology fundamentally changing the balances and paradigms between cost of computing, communication and programming: At the hardware level, the essential aspect of quickly changing landscape is the difference in growth of network bandwidth, processor speed and memory access times. High speed networks are changing balance on the networking side, because port throughput is more limited by the processor speed than by the network bandwidth, as it was in the past. At the same time, the latency of the networks is fundamentally limited by the speed of light and the distance that the transferred data need to travel. On the other hand, the speed of a processor is growing faster than the access time to the memory (where the technological advances are used to increase the memory chip capacity rather than its speed). The resulting use of buffering to mask the speed differences has led to the multi-memory hierarchy in which registers, primary cache, secondary cache and main memory are typical layers with progressively lower speed but larger capacity.

This panel will discuss the exciting and promising future of parallel and distributed computing. The challenges and future development will be discussed, such as:

- *Energy* - What makes sustainable and green parallel and distributed computing?
- *Hardware* - What is the future of the hardware of parallel and distributed computing? The price of hardware plays a role as cheaper devices are better received by customers.
- *Software* - What are the challenges of software development? No matter the software development paradigm goes centralized or distributed, parallelism is still a key to performance.
- *Security* - As systems become more complex year by year, their role in everyday life gains importance as well. As a result, security and privacy have become the major concern.

Panelists will present their position statements and highlight what they identify as challenges and potential future development in parallel and distributed computing.



**Professor (Dr) Xu Huang**

*University of Canberra, Australia*

*Short Biography*

Dr Xu Huang has received the B.E. and M.E. degrees and Ph.D. in Electrical Engineering and Optical Engineering prior to 1989 and the second Ph.D. in Experimental Physics in the University of New South Wales, Australia in 1992. He has earned the Graduate Certificate in Higher Education in 2004 at the University of Canberra, Australia. He has been working on the areas of the telecommunications,

networking engineering, wireless communications, optical communications, and digital signal processing more than 30 years. Currently he is the Head of the Engineering at the Faculty of Information Sciences and Engineering, University of Canberra, Australia. He is the Course Conveners “Doctor of Philosophy,” “Masters of Information Sciences (by research),” and “Master of Engineering.” He has been a senior member of IEEE in Electronics and in Computer Society since 1989 and a Fellow of Institution of Engineering Australian (FIEAust), Chartered Professional Engineering (CPEng), a Member of Australian Institute of Physics. He is a member of the Executive Committee of the Australian and New Zealand Association for Engineering Education, a member of Committee of the Institution of Engineering Australia at Canberra Branch. Professor Huang has published about two hundred papers in high level of the IEEE and other Journals and international conference; he has been awarded 9 patents in Australia.



**Professor Miroslaw Malek**

*Humboldt-Universität zu Berlin, Germany*

*Short Biography*

Miroslaw Malek is professor and holder of Chair in Computer Architecture and Communication at the Department of Computer Science at Humboldt University in Berlin. His research interests focus on dependable architectures and services in parallel, cloud, distributed and embedded computing environments including failure prediction, dependable architectures and service availability. He has participated in two pioneering parallel computer projects, contributed to the theory and practice of parallel network design, developed the comparison-based method for system diagnosis, co-developed comprehensive WSI and networks testing techniques, proposed the consensus-based framework for responsive (fault-tolerant, real-time) computer systems design and has made numerous other contributions, reflected in over 200 publications and nine books.

He has supervised 26 Ph.D. dissertations and three habilitations (ten of his students are professors) and founded, organized and co-organized numerous workshops and conferences. He served and serves on editorial boards of several journals and is consultant to government and companies on technical and strategic issues in information technology. Malek received his PhD in Computer Science from the Technical University of Wroclaw in Poland, spent 17 years as professor at the University of Texas at Austin and was also, among others, visiting professor at Stanford, Universita di Roma “La Sapienza”, Politecnico di Milano, Keio University, Technical University in Vienna, New York University, Chinese University of Hong Kong, and guest researcher at Bell Laboratories and IBM T.J. Watson Research Center.



**Professor Stephen S. Yau**

*Arizona State University, USA*

*Short Biography*

Stephen S. Yau is currently professor of computer science and engineering at Arizona State University (ASU), Tempe. He served as the chair of the Department of Computer Science and Engineering at ASU in 1994-2001. Previously, he was on the faculty of Northwestern University, Evanston, Illinois and the University of Florida, Gainesville. He received the Ph.D. degree in electrical engineering from University of Illinois at Urbana.

He served as the president of the Computer Society of the Institute of Electrical and Electronics Engineers (IEEE)

and American Federation of Information-Processing Societies. He also served as the editor-in-chief of COMPUTER magazine of the IEEE Computer Society.

His current research interests are in cyber security, ubiquitous computing, distributed computing systems, service-based systems and software engineering. He has received many awards and recognition for his accomplishments, including the Tsutomu Kanai Award and Richard E. Merwin Award of the IEEE Computer Society, the IEEE Centennial and Third Millennium Medals, and the Louis E. Levy Medal of the Franklin Institute. He is a Fellow of the IEEE and the American Association for the Advancement of Science.



**Professor Koji Nakano**

*Hiroshima University, Japan*

*Short Biography*

Koji Nakano received the BE, ME and Ph.D degrees from Department of Computer Science, Osaka University, Japan in 1987, 1989, and 1992 respectively. In 1992-1995, he was a Research Scientist at Advanced Research Laboratory. Hitachi Ltd. In 1995, he joined Department of Electrical and Computer Engineering, Nagoya Institute of Technology. In 2001, he moved to School of Information Science, Japan Advanced Institute of Science and Technology, where he was an associate professor. He has been a full professor at School of Engineering, Hiroshima University from 2003. He has published extensively in journals, conference proceedings, and book chapters. He served on the editorial board of journals including IEEE Transactions on Parallel and Distributed Systems, IEICE Transactions on Information and Systems, and International Journal of Foundations on Computer Science. He has also guest-edited several special issues including IEEE TPDS Special issue on Wireless Networks and Mobile Computing, IJFCS special issue on Graph Algorithms and Applications, and IEICE Transactions special issue on Foundations of Computer Science. He has organized conferences and workshops including International Conference on Networking and Computing, International Conference on Parallel and Distributed Computing, Applications and Technologies, IPDPS Workshop on Advances in Parallel and Distributed Computational Models, and ICPP Workshop on Wireless Networks and Mobile Computing. His research interests include image processing, hardware algorithms, GPU-based computing, FPGA-based reconfigurable computing, parallel computing, algorithms and architectures.



**Professor Camille Coti**

*University of Paris North (Paris XIII), France*

*Short Biography*

Camille Coti graduated with a MSc in telecommunications (majoring in parallel and distributed computing) from Telecom SudParis and a PhD in computer science from University of Paris South. She made several visits to the Innovative Computing Laboratory at the University of Tennessee, Knoxville, totalizing 22 months in Knoxville. Then she worked as a post-doctoral research associate at Iowa State University. She is now an Assistant Professor at the University of Paris North (Paris XIII). She works on parallel computing on hierarchical memory and highly-distributed systems. Her interests include parallel algorithms, run-time environments and distributed computing on volatile environments.



## The IEEE UIC 2012 Technical Program

### September 4, 2012 (Tuesday)

08:00-17:00	Registration	
09:20-09:50	Opening (Bldg 12, Room #12107)	
09:50-10:00	Break	
10:00-11:00	Keynote Talk 1 (Bldg 12, Room #12107)	
11:00-11:20	Break	
11:20-13:00	UIC 1a	UIC 1b
13:00-14:30	Lunch (Demo Session/Display, 13:00~15:50)	
14:30-15:30	Keynote Talk 2 (Bldg 12, Room #12107)	
15:30-15:50	Break ( Demo Session/Display, 13:00~15:50)	
15:50-17:30	UIC 2a	UIC 2b
17:30-18:00	Free Time	
18:00-20:00	Welcome Reception (Bldg 12, 7 <sup>th</sup> floor)	

#### **UIC 1a: Ubiquitous and Intelligent Systems**

**Session Chair:** Radosveta Sokullu, Ege University, Turkey

1. Treatment of Missing Data in Intelligent Lighting Applications **(Best Paper Award Nominee)**  
*Aravind Kota Gopalakrishna, Tanir Özçelebi, Antonio Liotta, and Johan J. Lukkien*
2. Development of the Smart Toilet Equipment with Measurements of Physiological Parameters  
*Ji-Jer Huang, Sheng-I Yu, and Hao-Yi Syu*
3. Development of a Route Finding System for Manual Wheelchair Users Based on Actual Measurement Data  
*Yasuaki Sumida, Masaki Hayashi, Kazuaki Goshi, and Katsuya Matsunaga*
4. A Linguistic Approach for Robustness in Context Aware Applications  
*Young-Mok Min, Joon-Young Paik, and Eun-Sun Cho*

#### **UIC 1b: Wireless and Ad-Hoc Network**

**Session Chair:** Tzung-Shi Chen, National University of Tainan, Taiwan

1. Downlink Scheduling and Resource Allocation in EPON-WiMAX Integrated Networks **(Best Paper Award Nominee)**  
*Chung-Chih Kuo, Hung-Yi Teng, and Ren-Hung Hwang*
2. SocioTelematics: Leveraging Interaction-Relationships in Developing Telematics Systems to Support Cooperative Convoys  
*Muhammad Ashad Kabir, Jun Han, Alan Colman, and Jian Yu*
3. Data Gathering in a Hybrid Wireless Sensor Network  
*Hua-Wen Tsai, Tzung-Shi Chen, Bing-Hong Tsai, Cheng-Hao Chu, and Jeng-Shian Tsai*
4. Anycast Routing Based on Connectivity Metric for Sensor and Ad Hoc Networks  
*Satoru Ohta and Shingo Toda*

#### **Demo Session**

1. Safe Driving Education System ASSIST—Education Anywhere, Anytime  
*Kazuaki Goshi, Masaki Hayashi, and Katsuya Matsunaga*
2. A New Generation Children Tracking System Using Bluetooth MANET Composed of Android Mobile Terminals  
*Koki Morii, Koji Taketa, Yuichiro Mori, Hideharu Kojima, Eitaro Kohno, Shinji Inoue, Tomoyuki Ohta, and Yoshiaki Kakuda*

#### **UIC 2a: Vehicle Ad-Hoc Network**

**Session Chair:** Jadwiga Indulska, University of Queensland, Australia

1. A Content-Based Publish/Subscribe System for Efficient Event Notification over Vehicular Ad Hoc Networks  
*Fusang Zhang, Beihong Jin, Wei Zhuo, Zhaoyang Wang, and Lifeng Zhang*
2. Performance Analysis of LTE Smartphones-Based Vehicle-to-Infrastructure Communication

3. Improving the Estimation of Residual Delay based Forwarding Method in Opportunistic Vehicular Networks  
*Jia Jianbin, Chen Yingwen, Xu Ming, and Yu Gu*

**UIC 2b: Smart Environment**

**Session Chair:** Steve Yau, Arizona State University, USA

1. Exploiting Ultrasonic Reflections for Improving Accuracy of Indoor Location Tracking  
*Kang-Wook Kim, Myung-Gon Park, Takao Hishikawa, Junghee Han, and Chang-Gun Lee*
2. Routine Based Analysis for User Classification and Location Prediction  
*Yibing Xiong and Huiping Lin*
3. MPIGate: A Solution to Use Heterogeneous Networks for Assisted Living Applications  
*Hugo Cruz-Sánchez, Lionel Havet, Moutie Chehaider, and Ye-Qiong Song*
4. 3D Modeling and Simulation of Human Activities in Smart Spaces  
*A. Helal, K. Cho, W. Lee, Y. Sung, J.W. Lee, and E. Kim*

**September 5, 2012 (Wednesday)**

08:00-17:00	Registration	
09:00-10:20	UIC 3a	UIC 3b
10:20-10:40	Break	
10:40-12:00	UIC 4a	UIC 4b
12:00-13:20	Lunch	
13:20-14:20	Keynote Talk 3 (Bldg 1, Room S201)	
14:20-14:40	Break	
14:40-15:40	UIC/ATC Panel Discussion (Bldg 1, Room S201)	
15:40-16:00	Break	
16:00-17:00	ICA3PP Panel Discussion (Bldg 1, Room S201)	
17:00-19:00	Free Time	
19:00-21:00	Banquet (Hotel Nikko Fukuoka)	

**UIC 3a: Wireless Sensor Network**

**Session Chair:** Wanlei Zhou, Deakin University, Australia

1. Java Virtual Machine Based Infrastructure for Decent Wireless Sensor Network Development Environment  
*Xing Liu, Xunxing Diao, Kun Mean Hou, Hailun Zhu, Xin Liu, Yazhou Wang, and Wei Jia*
2. Situation-Based Design: A Rapid Approach for Pervasive Application Development  
*Lei Tang, Xingshe Zhou, Christian Becker, Zhiwen Yu, and Gregor Schiele*
3. Fault Management for Smart Wireless Sensor Networks  
*Radosveta Sokullu and Ozlem Karaca*
4. A Mobile Application Framework for Rapid Integration of Ubiquitous Web Services  
*Meng-Yen Hsieh, Hua-Yi Lin, Ching-Hung Yeh, Kuan-Ching Li, and Bo-Shiung Wu*

**UIC 3b: Intelligent and Social Computing**

**Session Chair:** Wen-Hwa Liao, Tatung University, Taiwan

1. Study of a Conversational Agent System Encouraging “Real” Answers of Individuals in a Group of Acquaintances  
*Akihito Yoshii and Tatsuo Nakajima*
2. Intelligent Systems that Combine Pervasive Computing and Social Networking  
*Sarah Gallacher, Elizabeth Papadopoulou, Nick K. Taylor, Fraser R. Blackmun, and M. Howard Williams*
3. A Four-Stage Gate-Keeper Model of Social Service Engineering: Lessons from Golden Rules of Mobile Social Game Design  
*Toshihiko Yamakami*
4. Predicting Mobile Phone User Locations by Exploiting Collective Behavioral Patterns **(Best Paper Award Nominee)**  
*Haoyi Xiong, Daqing Zhang, Daqiang Zhang, and Vincent Gauthier*

**UIC 4a: Ubiquitous Systems and Applications****Session Chair:** Zhiwen Yu, Northwestern Polytechnical University, China

1. Contribution-Based User Reputation Modeling in Collaborative Recommender Systems  
*Wei Hu, Yaoxue Zhang, Yuezhi Zhou, and Zhi Xue*
2. Knowledge Transfer in Activity Recognition Using Sensor Profile  
*Yi-ting Chiang and Jane Yung-jen Hsu*
3. Hybrid SN: Interlinking Opportunistic and Online Communities to Augment Information Dissemination  
*Bin Guo, Zhiwen Yu, Xingshe Zhou, and Daqing Zhang*
4. Global Sensor Modeling and Constrained Application Methods Enabling Cloud-Based Open Space Smart Services  
*Anh Lê Tuấn, Hoan N. Mau Quoc, Martin Serrano, Manfred Hauswirth, John Soldatos, Thanasis Papaioannou, and Karl Aberer*

**UIC 4b: Energy Efficient and Green Computing****Session Chair:** Hua-Wen Tsai, Lunghwa University of Science and Technology, Taiwan

1. A Battery-Aware Energy-Efficient Android Phone with Bayesian Networks  
*Si-Hyuk Yi and Sung-Bae Cho*
2. An Energy-Efficient Data Collection Mechanism with a Mobile Sink for Wireless Sensor Networks  
*Wen-Hwa Liao and Ssu-Chi Kuai*
3. Demand Response Control Strategies for On-campus Small Data Centers  
*Cheng-Jen Tang and Miao-Ru Dai*
4. Hilbert-Chain Topology for Energy Conservation in Large-Scale Wireless Sensor Networks  
*Yih-Chuan Lin and Jia-Hong Zhong*

**September 6, 2012 (Thursday)**

08:00-12:00	Registration	
09:00-10:00	Keynote Talk 4 (Bldg 12, Room #12107)	
10:00-10:20	Break	
10:20-12:00	UIC 5a	UIC 5b
12:00-13:00	Lunch	
13:00-20:00	Half-Day Tour	

**UIC 5a: Security and Intelligent Systems****Session Chair:** Martín Serrano, National University of Ireland Galway, Ireland

1. The Challenge of Preparational Behaviors in Preference Learning for Ubiquitous Systems  
*Sarah Gallacher, Eliza Papadopoulou, Nick K. Taylor, and M. Howard Williams*
2. Risk-Based Intelligent Software Release Planning  
*Shunsuke Tokumoto and Tadashi Dohi*
3. Efficient Time Series Disaggregation for Non-intrusive Appliance Load Monitoring  
*Yao-Chung Fan, Xingjie Liu, Wang-Chien Lee, and Arbee L.P. Chen*
4. User Identification Based on Touch Dynamics  
*Frode Eika Sandnes and Xiaoli Zhang*

**UIC 5b: P2P & RFID****Session Chair:** Eun-Sun Cho, Chungnam National University, Korea

1. Neighbor Selection Method Based on Sending Capacity for P2P Live Streaming with Layer Coding  
**(Best Paper Award Nominee)**  
*Rei Endo, Kazuyuki Takayama, Yoshiki Sakata, and Hiroshi Shigeno*
2. Using Dynamic Slots Collision Tracking Tree Technique Towards an Efficient Tag Anti-collision Algorithm in RFID Systems  
*Chiu-Kuo Liang and Hsin-Mo Lin*
3. AB-Chord: An Efficient Approach for Resource Location in Structured P2P Networks  
*Yufeng Wang, Xiangming Li, Qun Jin, and Jianhua Ma*
4. Development of Industrial Safety Management System for Shipbuilding Industry Using RFID/USN  
*Jung-Min Yun and Peom Park*

## September 7, 2012 (Friday)

08:00-12:00	Registration	
09:00-10:40	UIC 6a	UIC 6b
10:40-11:00	Break	
11:00-12:40	UIC 7a	UIC 7b
12:40-13:30	Lunch	
13:30-14:00	Closing Session	

### UIC 6a: Wireless Sensor Network and Mobile Computing

**Session Chair:** Frode Eika Sandnes, Oslo University College, Norway

1. A Transmission Scheduling for Data-Gathering Wireless Sensor Networks  
*Chao Gao, Ilkka Kivelä, Xinyu Tan, and Ismo Hakala*
2. A Decentralized Quality Aware Adaptive Sampling Strategy in Wireless Sensor Networks  
*A. Masoum, N. Meratnia, and P.J.M. Havinga*
3. Robust and Dynamic Data Aggregation in Wireless Sensor Networks: A Cross-Layer Approach  
*Weigang Wu, Jiannong Cao, Hejun Wu, and Jingjing Li*
4. The IG-Ferry Protocol to Support Efficient Controlled Replication in Vehicular Delay Tolerant Network  
*Ing-Chau Chang, Chien-Hsun Li, and Cheng-Fu Chou*

### UIC 6b: Intelligent Systems, Software and Objects

**Session Chair:** Yufeng Wang, Nanjing University of Posts & Telecom., China

1. Wireless Smart Home Sensor Networks: Mobile Agent Based Anomaly Detection  
*Muhammad Usman, Vallipuram Muthukkumarasamy, Xin-Wen Wu, and Surraya Khanum*
2. An Efficient Method for Lane-Mark Extraction in Complex Conditions  
*Chin-Yu Chang and Chang-Hong Lin*
3. An Intelligent Accessing Control System Based on Human Intention Analysis  
*Teng-Hui Tseng, Chin-Lun Lai, Sheng-Ta Hsieh, and Jun-Horng Chen*
4. Comparative Study on Advanced TV Interface Types in the Smart Media World  
*Youngjae Lim, Jaekyu Park, Eui S. Jung, David Ho Chung, Taeil Kim, Kwangsoo Choi, and Seunghun Lee*

### UIC 7a: Theory and Applications

**Session Chair:** Tzung-Shi Chen, National University of Tainan, Taiwan

1. A Novel Interval Grey Number and Entropy-based Solution for Multiple-Criteria Group Decision Making Problem  
*Hyung Ku Kang, Dae Gun Kim, Hwi Woon Jeong, Geon Yong Park, and Hee Yong Youn*
2. An Overlap Aware Technique for Redundant Reader Elimination  
*Ching-Hsien Hsu, Chia-Hao Yu, Chun-Yao Chung, Chao-Tung Yang, and Chih-Hsun Chou*
3. Backlog Bounds Analysis of Different On-chip Cache Coherence Policies: A Network Calculus-Based Approach  
*Xin Lai, Cong Liu, Zhiying Wang, and Quanyou Feng*
4. Hydra: An Ubiquitous Application for Service Rerouting  
*Lucas A. Almeida, Fabricio N. Buzeto, Ana H.O.R. Castillo, Carla D. Castanho, and Ricardo P. Jacobi*

### UIC 7b: Security and Fault Management

**Session Chair:**

1. Confidential Enhancement with Multi-code Keying Reconfiguration over Time-Shifted CHPC-based 2D OCDMA Networks  
*Yao-Tang Chang and Chuen-Ching Wang*
2. An Efficient Clustering Authentication Mechanism for Mobile Ad Hoc Networks  
*Ching-Hung Yeh, Meng-Yen Hsieh, and Kuan-Ching Li*
3. A Fault Detection and Diagnosis Framework for Ambient Intelligent Systems  
*Ahmed Mohamed, Christophe Jacquet, and Yacine Bellik*

# The IEEE ATC 2012 Technical Program

## September 4, 2012 (Tuesday)

08:00-17:00	Registration
09:20-09:50	Opening (Bldg 12, Room #12107)
09:50-10:00	Break
10:00-11:00	Keynote Talk 1 (Bldg 12, Room #12107)
11:00-11:20	Break
11:20-13:00	ATC 1
13:00-14:30	Lunch (Demo Session/Display, 13:00~15:50)
14:30-15:30	Keynote Talk 2 (Bldg 12, Room #12107)
15:30-15:50	Break (Demo Session/Display, 13:00~15:50)
15:50-17:30	ATC 2
17:30-18:00	Free Time
18:00-20:00	Welcome Reception (Bldg 1, 7 <sup>th</sup> floor)

### ATC 1: AC/OC Architectures and Systems, Components and Modules

Session Chair: Hiroaki Morino

1. Guaranteeing Asymptotic Stability of Clustering by Autonomous Decentralized Structure Formation  
*Ryo Hamamoto, Chisa Takano, Kenji Ishida, Masaki Aida*
2. Semantic Modeling and Reasoning at Runtime for Autonomous Systems Engineering  
*Tarak Chaari, Kaouthar Fakhfakh*
3. Autonomic Activities in the Execution of Scientific Workflows: Evaluation of the AWARD Framework  
*Luis Assuncao, Carlos Goncalves, Jose Cunha*
4. Automatic I/O scheduler selection through online workload analysis  
*Ramon Nou, Jacobo Giralt, Toni Cortes*

### ATC 2: Trust Models and Specifications, Tools and Interfaces

Session Chair: Naoki Wakamiya

1. Composite trust model for an information sharing scenario  
*Kevin Chan, Jin-Hee Cho, Sibel Adali*
2. Insuring Sensitive Processes through Process Mining  
*Jorge Munoz-Gama, Isao Echizen*
3. On Enhancing Adaptive Random Testing for AADL Model  
*Bo Sun, Yunwei Dong*
4. Component Importance Analysis of Virtualized System  
*Junjun Zheng, Hiroyuki Okamura, Tadashi Dohi*

## September 5, 2012 (Wednesday)

08:00-17:00	Registration
09:00-10:20	ATC 3
10:20-10:40	Break
10:40-12:00	ATC 4
12:00-13:20	Lunch
13:20-14:20	Keynote Talk 3 (Bldg 1, Room S201)
14:20-14:40	Break
14:40-15:40	UIC/ATC Panel Discussion (Bldg 1, Room S201)
15:40-16:00	Break
16:00-17:00	ICA3PP Panel Discussion (Bldg 1, Room S201)
17:00-19:00	Free Time
19:00-21:00	Banquet (Hotel Nikko Fukuoka)

### ATC 3: Trusted Reliable and Dependable Systems I

**Session Chair:** Hiroyuki Okamura

1. Performance Analysis of Virtual Disk System for Transparent Computing  
*Yuan Gao, Yaoxue Zhang, Yuezhi Zhou*
2. Optimizing Software Rejuvenation Policies under Interval Reliability Criteria  
*Tadashi Dohi, Hiroyuki Okamura, Kishor Trivedi*
3. Combined Server Rejuvenation in a Virtualized Data Center  
*Fumio Machida, Jianwen Xiang, Kumiko Tadano, Yoshiharu Maeno*

### ATC 4: Trusted Reliable and Dependable Systems II

**Session Chair:** Fumio Machida

1. Model-Based Performance Optimization of Generalized Snapshot Isolation in Database System  
*Chao Luo, Hiroyuki Okamura, Tadashi Dohi*
2. Filesystem Layout Reorganization in Virtualized Environment  
*Masaya Yamada, Saneyasu Yamaguchi*
3. An Availability-aware Virtual Machine Placement Approach for Dynamic Scaling of Cloud Applications  
*Wenting Wang, Haopeng Chen, Xi Chen*  
**(Best Paper Award Nominee)**

## September 6, 2012 (Thursday)

08:00-12:00	Registration
09:00-10:00	Keynote Talk 4 (Bldg 12, Room #12107)
10:00-10:20	Break
10:20-12:00	ATC 5
12:00-13:00	Lunch
13:00-20:00	Half-Day Tour

### ATC 5: AC/OC Communication and Services, Tools and Interfaces

**Session Chair:** Kenji Ishida

1. iSac : Intimacy based Access Control for Social Network Sites  
*Yonggang Wang, Ennan Zhai, Eng Keong Lua, Jianbin Hu, Zhong Chen*
2. PKU-STRAW-L: a simulative platform evaluate the energy save rate of the intelligent street lamp system  
*Yang Tao, Wang Yinyang, Hu Jianbin, Chen Zhong*
3. Performance Management of Virtual Machines via Passive Measurement and Machine Learning  
*Toshiaki Hayashi, Satoru Ohta*

## September 7, 2012 (Friday)

08:00-12:00	Registration
09:00-10:40	ATC 6
10:40-11:00	Break
11:00-12:40	ATC 7
12:40-13:30	Lunch
13:30-14:00	Closing Session

### ATC 6: Trust-related Security and Privacy

Session Chair: Saneyasu Yamaguchi

1. A Self-protection Mechanism against Stepping-stone Attacks for IaaS Clouds (**Best Paper Award Nominee**)  
*Kenichi Kourai, Takeshi Azumi, Shigeru Chiba*
2. Neighbor Similarity Trust against Sybil Attack in P2P E-Commerce  
*Felix Musau, Guojun Wang, Song Guo, Muhammad Abdullahi*
3. Accuracy of Privacy-preserving Collaborative Filtering Based on Quasi-homomorphic Similarity  
*Hiroaki Kikuchi, Yoshiki Aoki, Masayuki Terada, Kazuhiko Ishii, Kimihiko Sekino*

### ATC 7: Trustworthy Services and Applications

Session Chair: Tadashi Dohi

1. A Two-level Virtual Machine Self-reconfiguration Mechanism for the Cloud Computing Platforms  
*Wei Chen, Xiaoqiang Qiao, Jun Wei, Tao Huang*
2. A Frame Rate Up-Conversion Algorithm for 3-D Video  
*Shen-Chuan Tai, Chuen-Ching Wang, Chien-Shiang Hong, Chih-Pei Yeh, Yao-Tang Chang*
3. A Power Saving Method with Consideration of Performance in Android Terminals  
*Nagata Kyosuke, Saneyasu Yamaguchi, Hisato Ogawa* (**Best Paper Award Nominee**)

## The ICA3PP 2012 Technical Program

September 4, 2012 (Tuesday)	
08:00-17:00	Registration
09:20-09:50	Opening (Bldg 12, Room #12107)
09:50-10:00	Break
10:00-11:00	Keynote Talk 1 (Bldg 12, Room #12107)
11:00-11:20	Break
11:20-13:00	ICA3PP 1a <span style="float: right;">ICA3PP 1b</span>
13:00-14:30	Lunch (Demo Session/Display, 13:00~15:50)
14:30-15:30	Keynote Talk 2 (Bldg 12, Room #12107)
15:30-15:50	Break (Demo Session/Display, 13:00~15:50)
15:50-17:30	ICA3PP 2a <span style="float: right;">ICA3PP 2b</span>
17:30-18:00	Free Time
18:00-20:00	Welcome Reception (Bldg 1, 7 <sup>th</sup> floor)

### ICA3PP 1a: Parallel Algorithms

#### Session Chair:

1. Parallel Algorithm for Nonlinear Network Optimization Problems and Real-Time Applications  
*Shin-Yeu Lin and Xian-Chang Guo*
2. Fast Parallel Algorithms for Blocked Dense Matrix Multiplication on Shared Memory Architectures  
*G. Nimako, E. J. Otoo and D. Ohene-Kwofie*
3. Vectorized Algorithms for Quadtree Construction and Descent  
*Eraldo P. Marinho and Alexandro Baldassin*
4. Exploiting Multi-grain Parallelism for efficient Selective Sweep Detection  
*Nikolaos Alachiotis, Pavlos Pavlidis, and Alexandros Stamatakis*

### ICA3PP 1b: Distributed Scheduling and Load Balancing

#### Session Chair:

1. Optimal Linear Programming Solutions for Multiprocessor Scheduling with Communication Delays  
*Sarad Venugopalan and Oliver Sinnen*
2. A Hybrid Heuristic-Genetic Algorithm for Task Scheduling in Heterogeneous Multi-core System  
*Chuan Wang, Jianhua Gu, Yunlan Wang, and Tianhai Zhao*
3. Multi-Core Fixed Priority DVS Scheduling (Best Paper Award Nominee)  
*Liu Yang and Man Lin and Laurence T. Yang*
4. A Dependency Aware Task Partitioning and Scheduling Algorithm for Hardware-Software Codesign on MPSoCs  
*Chunsheng Li, Xi Li, Chao Wang, Xuehai Zhou, and Fangling Zeng*

### ICA3PP 2a: Parallel Architectures and Networks

#### Session Chair:

1. Ultrasound Simulation on the Cell Broadband Engine using the Westervelt Equation  
*Andrew A. Haigh, Bradley E. Treeby, and Eric C. McCreath*
2. Experiments in Parallel Matrix Multiplication on Multi-Core Systems (Best Paper Award Nominee)  
*Joefrey Legaux, Sylvain Jubertie, and Frédéric Loulergue*
3. A Verified Library of Algorithmic Skeletons on Evenly Distributed Arrays  
*Wadoud Bousdira, Frédéric Loulergue, and Julien Tesson*
4. Security Computing for the Resiliency of Protecting from Internal Attacks in Distributed Wireless Sensor Networks  
*Xu Huang, Dharmendra Sharma, and Muhammad Ahmed*



**ICA3PP 2b: Performance Management**  
**Session Chair:**

1. Efficient Task Assignment on Heterogeneous Multicore Systems Considering Communication Overhead  
*Li Wang, Jing Liu, Jingtong Hu, Qingfeng Zhuge, Duo Liu, and Edwin H.-M. Sha*
2. Kernel Support for Fine-grained Load Balancing in a Web Cluster Providing Streaming Service  
*Mei-Ling Chiang, Chen-Yu Yang, and Shin-Lu Lien*
3. Budget Constrained Resource Allocation for Non-Deterministic Workflows on an IaaS Cloud  
*Eddy Caron, Frédéric Desprez, Adrian Muresan, and Frédéric Suter*
4. On Modelling and Prediction of Total CPU Usage for Applications in MapReduce Environments  
*Nikzad Babaii Rizvandi, Javid Taheri, Reza Moraveji, and Albert Y. Zomaya*

**September 5, 2012 (Wednesday)**

08:00-17:00	Registration	
09:00-10:20	ICA3PP 3a	ICA3PP 3b
10:20-10:40	Break	
10:40-12:00	ICA3PP 4a	ICA3PP 4b
12:00-13:20	Lunch	
13:20-14:20	Keynote Talk 3 (Bldg 1, Room S201)	
14:20-14:40	Break	
14:40-15:40	UIC/ATC Panel Discussion (Bldg 1, Room S201)	
15:40-16:00	Break	
16:00-17:00	ICA3PP Panel Discussion (Bldg 1, Room S201)	
17:00-19:00	Free Time	
19:00-21:00	Banquet (Hotel Nikko Fukuoka)	

**ICA3PP 3a: Parallel Algorithms**  
**Session Chair:**

1. A Regular Group Quorum System of Degree  $\lceil \sqrt{(n/2)} \rceil$   
*Fouad B. Chedid*
2. A Note on Developing Optimal and Scalable Parallel Two-List Algorithms  
*Fouad B. Chedid*
3. High-performance Matrix Multiply on a massively Multithreaded Fiteng1000 Processor  
*Jie Liu, Lihua Chi, Chunye Gong, Han Xu, Jie Jiang, Yihui Yan, and Qingfeng Hu*
4. BIDE-based Parallel Mining of Frequent Closed Sequences with MapReduce  
*Dongjin Yu, Wei Wu, Suhang Zheng, and Zhixiang Zhu*
5. An Implementation of Parallel 2-D FFT Using Intel AVX Instructions on Multi-Core Processors  
*Daisuke Takahashi*
6. A New Low Latency Parallel Turbo Decoder Employing Parallel Phase Decoding Method  
*Wen-Ta Lee, Min-Sheng Chang, and Wei-Chieh Shen*
7. Towards Multi-Level Adaptation for Distributed Operating Systems and Applications  
*Djawida Dib, Nikos Parlavantzas, and Christine Morin*

**ICA3PP 3b: Performance of Parallel & Distributed Computing Systems**  
**Session Chair:**

1. Analytical Modeling for Multi-transaction bus on distributed systems  
*Jih-Ching Chiu, Kai-Ming Yang, and Chen-Ang Wong*
2. Performance Evaluation of OpenMP and CUDA on Multicore Systems  
*Chao-Tung Yang, Tzu-Chieh Chang, Kuna-Lung Huang, Jung-Chun Liu, and Chih-Hung Chang*
3. Leveraging the Strengths of Transactional Memory While Maintaining System Performance for a Multiplayer Gaming Application  
*Lih-Chyun Shu, Ying-Cheng Su, Chang-Ming Tasi, and Huey-Min Sun*
4. Maintaining Consistency in Software Transactional Memory through Dynamic Versioning Tuning  
*Ehsan Atoofian and Amir Ghanbari Bavarsad*
5. Design of n-gram based Dynamic Pre-fetching for DSM  
*Sitaramaiah Ramiseti, Rajeev Wankar, and C.R. Rao*

6. Exploring Object-Level Parallelism on Chip Multi-Processors  
*Weixing Ji, Yizhuo Wang, Zhi Huang, Junqing Zhao, and Xi Li*

#### ICA3PP 4a: Distributed Computing Environments

##### Session Chair:

1. A Semantic Impact in Decentralized Resource Discovery Mechanism for Grid Computing Environments  
*Abdul Khalique Shaikh, Saadat M. Alhashmi, and Rajendran Parthiban*
2. Solving a 2-covered Path Problem with Variable Radii for Wireless Sensor Networks  
*Da-Ren Chen, Chiun-Chieh Hsu, You-Shyang Chen, and Jun-Fu Guo*
3. Small Business-oriented Index Construction of Cloud Data  
*Kai Peng, Hua Zou, Rongheng Lin, and Fangchun Yang*
4. On Construction of Cloud IaaS for VM Live Migration Using KVM and OpenNebula  
*Chao-Tung Yang, Shao-Feng Wang, Kuan-Lung Huang, and Jung-Chun Liu*
5. Enhancing the Performance of a Distributed Mobile Computing Environment by Topology Construction  
*Il-Young Kim and Jong-Kook Kim*
6. Determining Quality of S-Boxes Using Pseudo Random Sequences Generated from Stream Ciphers  
*Anh P. Nguyen and Thuc D. Nguyen*

#### ICA3PP 4b: Fault-tolerant Computing, Distributed Scheduling, and Application

##### Session Chair:

1. On Affirmative Adaptive Failure Detection  
*Ahmad Shukri Mohd Noor, Mustafa Mat Deris, Tutut Herawan, and Mohamad Nor Hassan*
2. Frame Error Rate Testing for High Speed Optical Interconnect  
*Yi Dai, Ke-fei Wang, Wei-xia Xu, He-ying Zhang, Shao-gang Wang*
3. Efficient Task Scheduling for Hard Real-Time Tasks in Asymmetric Multicore Processors  
*Sung Il Kim, Jong-Kook Kim, Hyoung Uk Ha, Tae Ho Kim, and Kyu Hyun Choi*
4. Complexity of the Resource Allocation/Matching Problem with Weight Based Ceilings  
*Charles Karemera and John Ngubiri*
5. FIDs Classifier for Artificial Intelligence and its Application  
*Chih-Chiang Wei*
6. Design of an Application-dependent Static-based Shared Memory Network  
*Yoshimasa Ohnishi and Takaichi Yoshida*

### September 6, 2012 (Thursday)

08:00-12:00	Registration	
09:00-10:00	Keynote Talk 4 (Bldg 12, Room #12107)	
10:00-10:20	Break	
10:20-12:00	ICA3PP 5a	ICA3PP 5b
12:00-13:00	Lunch	
13:00-20:00	Half-Day Tour	

#### ICA3PP 5a: Parallel Architectures

##### Session Chair:

1. Performance, Scalability, and Semantics of Concurrent FIFO Queues  
*Christoph M. Kirsch, Hannes Payer, Harald R?ck, and Ana Sokolova*
2. Scalable Distributed Architecture for Media Transcoding  
*Horacio Sanson, Luis Loyola, and Daniel Pereira*
3. Overcoming the Scalability Limitations of Parallel Star Schema Data Warehouses  
*João Pedro Costa, José Cecílio, Pedro Martins, and Pedro Furtado*
4. Enhancing Service-Oriented Computing with Software Mobility  
*Hervé Paulino and Gilberto Camacho*

#### ICA3PP 5b: Reliability and Fault-tolerant

##### Session Chair:

1. Fault Tolerance Logical Network Properties of Irregular Graphs  
*Christophe Cérin, Camille Coti, and Michel Koskas*
2. Non-Blocking Atomic Commitment in Asynchronous Distributed Systems with Faulty Processes  
*Sung-Hoon Park and Seon-Hyong Lee*
3. Comparing Checkpoint and Rollback Recovery Schemes in a Cluster System  
*Noriaki BESSHO and Tadashi DOHI*

4. Causal Order Multicast Protocol Using Minimal Message History Information  
*Chayoung Kim and Jinho Ahn*

## September 7, 2012 (Friday)

08:00-12:00	Registration	
09:00-10:40	ICA3PP 6a	ICA3PP 6b
10:40-11:00	Break	
11:00-12:40	ICA3PP 7a	ICA3PP 4b
12:40-13:30	Lunch	
13:30-14:00	Closing Session	

### ICA3PP 6a: System and Reliability

#### Session Chair:

1. The Hamiltonicity of WK-recursive Pyramid  
*Yi-Chun Wang and Justie Su-Tzu Juan*
2. A Bitstream Relocation Technique to Improve Exibility of Partial Reconfiguration  
*Yoshihiro Ichinomiya, Motoki Amagasaki, Masahiro Iida, Morihiro Kuga, and Toshinori Sueyoshi*
3. Fault Recovery Technique for TMR Softcore Processor System using Partial Reconfiguration  
*Makoto Fujino, Hiroki Tanaka, Yoshihiro Ichinomiya, Motoki Amagasaki, Morihiro Kuga, Masahiro Iida, and Toshinori Sueyoshi*
4. STM Systems: Enforcing Strong Isolation between Transactions and Non-transactional Code  
*Tyler Crain, Eleni Kanellou, and Michel Raynal*

### ICA3PP 6b: Parallel Programming

#### Session Chair:

1. Accelerating the Dynamic Programming for the Optimal Polygon Triangulation on the GPU  
*Kazufumi Nishida, Koji Nakano, and Yasuaki Ito*
2. Optimization of a short-range Proximity Effect Correction Algorithm in E-Beam Lithography using GPGPUs  
*Max Schneider, Nikola Belic, Christoph Sambale, Ulrich Hofmann, and Dietmar Fey*
3. An Optimal Parallel Prefix-sums Algorithm on the Memory Machine Models for GPUs **(Best Paper Award Nominee)**  
*Koji Nakano*
4. GPU-Accelerated Restricted Boltzmann Machine for Collaborative Filtering  
*Xianggao Cai, Zhanpeng Xu, Guoming Lai, Chengwei Wu, and Xiaola Lin*

### ICA3PP 7a: Performance of Parallel & Distributed Computing Systems

#### Session Chair:

1. A Multi-level Monitoring Framework for Stream-based Coordination Programs  
*Vu Thien Nga Nguyen, Raimund Kirner, and Frank Penczek*
2. Performance Measurement of Parallel Vlasov Code for Space Plasma on Various Scalar-Type Supercomputer Systems  
*Takayuki Umeda and Keiichiro Fukazawa*
3. The Impact of Global Communication Latency at Extreme Scales on Krylov Methods **(Best Paper Award Nominee)**  
*Thomas J. Ashby, Pieter Ghysels, Wim Heirman, and Wim Vanroose*
4. Study on the Data Flow Balance in NFS Server with iSCSI  
*Nianmin Yao, Yong Han, Shaobin Cai, and Qilong Han*

### ICA3PP 7b: Parallel Programming for GPUs

#### Session Chair:

1. On a Wideband Fast Fourier Transform Using Piecewise Linear Approximations: Application to a Radio Telescope Spectrometer  
*Hiroki Nakahara, Hiroyuki Nakanishi, and Tsutomu Sasao*
2. A multi-GPU Programming Library for Real-Time Applications  
*Sebastian Schaetz and Martin Uecker*
3. An Insightful Program Performance Tuning Chain for GPU Computing  
*HaiPeng Jia, Yunquan Zhang, Guoping Long, and Shengen Yan*
4. Power Efficiency Evaluation of Block Ciphers on GPU-Integrated Multicore Processor  
*Naoki Nishikawa, Keisuke Iwai, and Takakazu Kurokawa*



## The MENS 2012 Technical Program

<b>September 4, 2012 (Tuesday)</b>	
08:00-17:00	Registration
09:20-09:50	Opening
09:50-10:00	Break
10:00-11:00	Keynote Talk 1
11:00-11:20	Break
11:20-13:00	MENS 1
13:00-14:30	Lunch
14:30-15:30	Keynote Talk 2
15:30-15:50	Break
15:50-17:30	MENS 2

### **MENS 1: Modeling of Multidisciplinary Emerging Networks and Systems**

**Session Chair:** Yufeng Wang

1. Dependability Modeling and Analysis of Random Port Hopping  
*Kousaburo HARI and Tadashi DOHI*
2. An Assurance Enhanced Route-Split Routing for Non-uniform Node Density in Mobile Ad Hoc Networks  
*Mario Takeuchi, Anri Kimura, Eitaro Kohno, Tomoyuki Ohta and Yoshiaki Kakuda*
3. An Extension of Routing Tree Algorithm Considering Link Speed Change in IEEE 802.11n Protocol for Wireless Mesh Network  
*Nobuo Funabiki, Wataru Maruyama, Toru Nakanishi and Kan Watanabe*
4. Quasi-Static Approach for Analyzing Interactions Between Networks and Users Based on Decomposition of Timescales  
*Masaki Aida, Chisa Takano, Masayuki Murata and Makoto Imase*

### **MENS 2: Application of Multidisciplinary Emerging Networks and Systems**

**Session Chair:** Yufeng Wang

1. Toward Remote Service Invocation in Android  
*Kazuhiro Nakao and Yukikazu Nakamoto*
2. Achieving High Availability of Consistent Data in the Presence of Network Partitions  
*Tatsuhiro Tsuchiya*
3. A Routing ID-based Node-disjoint Multipath Scheme for Ad Hoc Networks  
*Takahide Uemori, Eitaro Kohno and Yoshiaki Kakuda*
4. Privacy, Security and Trust in Cloud Computing: The Perspective of the Telecommunication Industry  
*Leonardo Martucci, Albin Zuccato, Ben Smeets, Sheikh M. Habib, Thomas Johansson and Nahid Shahmehri*

## The UIPM 2012 Technical Program

September 4, 2012 (Tuesday)	
08:00-17:00	Registration
09:20-09:50	Opening
09:50-10:00	Break
10:00-11:00	Keynote Talk 1
11:00-11:20	Break
11:20-13:00	UIPM 1 (Room #12103, #12216)
13:00-14:30	Lunch
14:30-15:30	Keynote Talk 2
15:30-15:50	Break
15:50-17:30	UIPM 2 (Room #12103, #12216)

### UIPM 1: Ubiquitous Computing Techniques for Multimedia Systems and Applications

Session Chair: Wei-Jen Wang ( Room #12103) / Yue-Shan Chang (Room #12216)

#### Room #12103

1. The Modulation Method based on Reed-Solomon code for Watermarking  
*Huang-Chi Chen, Yu-Wen Chang, Rey-Chue Hwang*
2. Dual-watermarking by QR-code Applications in Image Processing  
*Fu-Hau Hsu, Min-Hao Wu, Shiuh-Jeng Wang*
3. Employing LSB and VQ for Undetectable Secret Data Hiding  
*Cheng-Ta Huang, Wei-Jen Wang, Min-Yi Tsai, Chin-Feng Lee*
4. The Design and Realization of Video Phone System in Embedded Platform  
*Ching-Lung Chang, Chang-Hsuan Hung*

#### Room #12216

1. A framework for scalable cloud video recorder system in surveillance environment  
*Chia-Feng Lin, Shyan-Ming Yuan, Muh-Chyi Leu*
2. An Architecture for Video Surveillance Service based on P2P and Cloud Computing  
*Yu-Sheng Wu, Yue-Shan Chang, Tong-Ying Juang*
3. A Project-based Curriculum for Teaching C++ Object-Oriented Programming  
*Yen-Lin Chen, Chuan-Yen Chiang, Yo-Ping Huang, Shyan-Ming Yuan*

### UIPM 2a: Applications and Tools for Ubiquitous Information Processing and Management

Session Chair: Chun-Chuan Chen ( Room #12103) / Shyan-Ming Yuan ( Room #12216)

#### Room #12103

1. An Expert System Application for Respiratory Infection Diagnostic  
*Sheng-Ta Hsieh, Chih-Dao Chen, Jun-Horng Chen, Chin-Lun Lai, Yu-Long Syu*
2. Accelerating Computation of DCM for ERP by GPU-Based Parallelism  
*Wei-Jen Wang, I-Fan Hsieh, Chun-Chuan Chen*
3. Applying pervasive computing in an architecture for homecare environments  
*Leandro O. Freitas, Giovanni R. Librelotto, Henrique G. G. Pereira, Jeferson Kasper, Ricardo G. Martini, Bruno Mozzaquatro, Rafael T. Pereira*
4. Assessing the Relationships between IS Success with Intellectual Capital for International Medical Services Centers in Taiwan- The Perspective of Physicians  
*Hsien-Cheng Lin, Chen-Chia Chen, Echo Huang, Ya-Hui Yang*

#### Room #12216

1. Squareknot: a Flexible Framework for Actuators and Controllers in Smart Environment  
*Takeru Ujinawa, Naohiro Hayashibara*
2. FOSS4G Based Mobile Web-GIS for Field Survey in Natural Environmental Studies  
*Yu Nakayama, Suguru Mori*
3. Constructing Private Cloud Storage Using Network Attached Storage  
*Guo-Heng Luo, Wen-Feng Hsu, Shyan-Ming Yuan*

## The USMAP 2012 Technical Program

### September 4, 2012 (Tuesday)

08:00-17:00	Registration
09:20-09:50	Opening
09:50-10:00	Break
10:00-11:00	Keynote Talk 1
11:00-11:20	Break
11:20-13:00	USMAP 1
13:00-14:30	Lunch
14:30-15:30	Keynote Talk 2
15:30-15:50	Break
15:50-17:30	USMAP 2

#### USMAP 1:

**Session Chair:** Hung-Chi Chu and Yue-Shan Chang

1. Ubiquitous Computing and Evaluation of Water Quality by Grey Relational Analysis  
*Hung-Jin Chen, Yo-Ping Huang and Yun-Kai Ke*
2. Design and Implementation of Assisted Body Movement System for Visually Impaired Children  
*Hung-Chi Chu, Wei-Tai Wu, Fang-Lin Chao and Liza Lee*
3. Execution Time Prediction Using Rough Set Theory in Hybrid Cloud  
*Chih-Tien Fan, Yue-Shan Chang, Wei-Jen Wang, Shyan-Ming Yuan*
4. A Finite State Machine-Based Fall Detection Mechanism on Smartphones  
*Shang-Lin Hsieh, Ming Hsiung Su, Wey-Wen Jiang, and Lu Feng Liu*

#### USMAP 2:

**Session Chair:** Shang-Lin Hsieh and Don-Lin Yang

1. System Design of an Intelligent Nutrition Consultation and Recommendation Model  
*En-Yu Lin, Don-Lin Yang, Ming-Chuan Hung*
2. An Enhanced IOT Gateway in a Broadcast System  
*Xianyang Jiang, Deshi Li, Shaobo Nie, Jing Luo, Zhonghai Lu*
3. How Online Social Network Affect Offline Events: A Case Study on Douban  
*Junwei Han, Jianwei Niu, Alvin Chin, Wei Wang, Chao Tong, Xia Wang*
4. Mixed-Style Print Advertising Combining Fashion Photography and Digital Illustrations: Examining the Print Advertising of Consumer Products in Taiwan  
*Yi-Lin Yu*

## The CDCN 2012 Technical Program

September 5, 2012 (Wednesday)	
08:00-17:00	Registration
09:00-10:20	CDCN 1
10:20-10:40	Break
10:40-12:00	CDCN 2
12:00-13:20	Lunch
13:20-14:20	Keynote Talk 3 (Bldg 1, Room S201)
14:20-14:40	Break
14:40-15:40	UIC/ATC Panel Discussion (Bldg 1, Room S201)
15:40-16:00	Break
16:00-17:00	ICA3PP Panel Discussion (Bldg 1, Room S201)
17:00-19:00	Free Time
19:00-21:00	Banquet (Hotel Nikko Fukuoka)

### CDCN 1: Theory of Cognitive Distributed Computing and Networking

#### Session Chair:

1. Wireless Sensor Network internal attacker Identification with Multiple Evidence by Dempster-Shafer Theory  
*Muhammad Ahmed, Xu Huang, Dharmendra Sharma, and Li Shutao*
2. A Novel Feature Selection Scheme For Energy Efficient Wireless Sensor Networks  
*Moh'd ALWADI and Girija CHETTY*
3. A Comprehensive Survey of The Feature Extraction Methods in The EEG Research  
*Mohammad A Rahman, Wanli Ma, Dat Tran, and John Campbell*
4. Development of a Smart e-Health Portal for Chronic Disease Management  
*Maryam Haddad and Girija Chetty*

### CDCN 2: Practice of Cognitive Distributed Computing and Networking

#### Session Chair:

1. A Novel Approach to Protein Structure Prediction Using PCA Based Extreme Learning Machines and Multiple Kernels  
*Lavneet singh, Girija Chetty, and Dharmendra Sharma*
2. A Novel Approach to Guarantee Causal Message Ordering in Pre-Planned Wireless Sensor Networks  
*Chayoung Kim and Jinho Ahn*
3. People Identification with RMS-based Spatial Pattern of EEG Signal  
*Salahiddin Altahat, Xu Huang, Dat Tran, and Dharmendra Sharma*
4. Gait Based Human Identity Recognition From Multi-View Surveillance Videos  
*Emdad Hossain and Girija Chetty*



## The UFirst 2012 Technical Program

### September 5, 2012 (Wednesday)

08:00-17:00	Registration
09:00-10:20	UFirst 1
10:20-10:40	Break
10:40-12:00	UFirst 2
12:00-13:20	Lunch
13:20-14:20	Keynote Talk 3 (Bldg 1, Room S201)
14:20-14:40	Break
14:40-15:40	UIC/ATC Panel Discussion (Bldg 1, Room S201)
15:40-16:00	Break
16:00-17:00	ICA3PP Panel Discussion (Bldg 1, Room S201)
17:00-19:00	Free Time
19:00-21:00	Banquet (Hotel Nikko Fukuoka)

#### UFirst 1: Smart devices and mobile computing

**Session Chair:** Pintsang Chang, Tenfolds Technology, Taiwan

- Ubiquitous Smart Devices and Applications for Disaster Preparedness  
*W.P. Liao, Y.Z. Ou, E.T.H. Chu, C.S. Shih, and J.W.S. Liu*
- A Surveillance System Designed for the Correction of Sitting Posture in Writing  
*Yi-Ping Wu and Jun-Horng Chen*
- Development of an Intelligent App for Obstructive Sleep Apnea Prediction on Android Smartphone Using Data Mining Approach  
*Ming-Hseng Tseng, Hsueh-Chen Hsu, Che-Chia Chang, Hua Ting, Hui-Ching Wu, and Ping-Hung Tang*

#### UFirst 2: Theorem and Applications

**Session Chair:** Chiu-Kuo Liang, Chung Hua University, Taiwan

- Mining Distributed Frequent Itemsets Using a Gossip Based Protocol  
*Maryam Bagheri, Seyed-Hassan Mirian-Hosseinabadi, Hoda Mashayekhi, and Jafar Habibi*
- An Intelligent Virtual Fence Security System for the Detection of People Invading  
*Jun-Horng Chen, Teng-Hui Tseng, Chin-Lun Lai, and Sheng-Ta Hsieh*
- From User Experience to Social Experience: A New Perspective for Mobile Social Game Design  
*Toshihiko Yamakami*

### September 7, 2012 (Friday)

08:00-12:00	Registration
09:00-10:40	UFirst 3
10:40-11:00	Break
11:00-12:40	UFirst 4
12:40-13:30	Lunch
13:30-14:00	Closing Session

#### UFirst 3: Smart Environments & E-health Systems

**Session Chair:** Bin Guo, Northwestern Polytechnical University, China

- A Distributed Integrated Fare Collection and Accounting System for Metropolitan Railway Transit  
*Pintsang Chang*
- Interval-Valued Cloud Model Based Personal Sub-health Status Diagnosing Prototype System on TCM Syndrome Data  
*Feng Guo, Ying Lin, Shaozi Li, and Ying Dai*
- A New RFID Anti-collision Algorithm for the EPCglobal UHF Class-1 Generation-2 Standard  
*Wen-Tzu Chen*
- Design and Implementation of an Auto-Configuration and Cooperation Generation of Web Service User Interface Based on TR-069 Protocol  
*Jin-Neng Wu, Chia-Ching Chan, Ping-Yu Chen, and Cheng-Lung Chu*

## The WEISS 2012 Technical Program

### September 5, 2012 (Wednesday)

08:00-17:00	Registration
09:00-10:20	WEISS 1
10:20-10:40	Break
10:40-12:00	WEISS 2
12:00-13:20	Lunch
13:20-14:20	Keynote Talk 3 (Bldg 1, Room S201)
14:20-14:40	Break
14:40-15:40	UIC/ATC Panel Discussion (Bldg 1, Room S201)
15:40-16:00	Break
16:00-17:00	ICA3PP Panel Discussion (Bldg 1, Room S201)
17:00-19:00	Free Time
19:00-21:00	Banquet (Hotel Nikko Fukuoka)

#### WEISS 1:

Session Chair: *Jing Chen, National Cheng Kung University, Taiwan*

1. Enhancing Traditional Games with Augmented Reality Technologies  
*Hiroyuki Sakuma, Tetsuo Yamabe, Tatsuo Nakajima*
2. Toward Efficient Detection of Semantic Exceptions in Context-Aware Systems  
*Eun-Sun Cho, Sumi Helal*
3. A Vision-Based Vehicle Speed Warning System  
*Ming-Shi Wang, Shih-Chieh Huang, Liang-Da Lin*

#### WEISS 2:

Session Chair: *Jing Chen, National Cheng Kung University, Taiwan*

1. Recovery Mechanism for Diff-based Reprogramming in WSNs  
*Shin-Lu Lien, Mei-Ling Chiang*
2. Compiler Optimization to Reduce Cache Power with Victim Cache  
*Cheng-Yu Lee, Jen-Chieh Chang, Rong-Guey Chang*
3. F-VT: A Friendly Virtualization Framework  
*Yuan-Cheng Lee, Tang-Hsun Tu, Chih-Wen Hsueh*
4. HeapDefender: A Mechanism of Defending Embedded Systems against Heap Overflow via Hardware  
*Dongfang Li, Zhenglin Liu, Yizhi Zhao*

## The WiNA 2012 Technical Program

September 6, 2012 (Thursday)	
08:00-12:00	Registration
09:00-10:00	Keynote Talk 4 (Bldg 12, Room #12107)
10:00-10:20	Break
10:20-12:00	WiNA
12:00-13:00	Lunch
13:00-20:00	Half-Day Tour

### WiNA:

**Session Chair:** Wen Ouyang

1. Smart Trend-Traversal Protocol with Shortcutting for Memory-less RFID Tag Collision Resolution  
*Xin-Qing Yan, Rui-Xia Zhang, Bin Li*
2. Reverse Nearest Neighbors Search in Wireless Broadcast Environments  
*Che-Lun Mak, Chuan-Ming Liu, Wei-Chi Yeh*
3. SARM: An Congestion Control Algorithm for DTN  
*Chengjun Wang, Baokang Zhao, Wanrong Yu, Chunging Wu, Zhenghu Gong*
4. Station Decision Problem in Bicycle Ad Hoc Networks  
*Wen Ouyang, Chang Wu Yu, Kun-Ming Yu, Ko-Jui Lin, Jo-Heng Yu, Hsin-Wen Chang, Lin-Li Tai, Chung-Han Lin*
5. Entropy-based Distributed Fault-tolerant Event Boundary Detection Algorithm for Wireless Sensor Networks  
*Wen Ouyang, Yu-Ting Liu, Yu-Wei Lin, Yi-Hao Chen*

## The DDCPD 2012 Technical Program

<b>September 6, 2012 (Thursday)</b>	
08:00-12:00	Registration
09:00-10:00	Keynote Talk 4 (Bldg 12, Room #12107)
10:00-10:20	Break
10:20-12:00	DDCPD
12:00-13:00	Lunch
13:00-20:00	Half-Day Tour

### **DDCPD:**

#### **Session Chair:**

1. The Design of Multisource Application Layer Multicast with Fast Route Recovery  
*Chia-Hui Huang, Kai-Wei Ke, Ho-Ting Wu*
2. IRDT-GEDIR: Next-Hop Selection in Intermittent Wireless Multihop Sensor Networks  
*Hiroaki Higaki, Takanori Takehira*
3. DCSim: Design Analysis on Virtualization Data Center  
*Chia-Jung Chen, Yi-Sheng Liu, Rong Guey Chang*

## The GreenPS 2012 Technical Program

September 6, 2012 (Thursday)	
08:00-12:00	Registration
09:00-10:00	Keynote Talk 4 (Bldg 12, Room #12107)
10:00-10:20	Break
10:20-12:00	GreenPS 1
12:00-13:00	Lunch
13:00-20:00	Half-Day Tour

<b>GreenPS 1: Energy-efficient algorithms</b> <b>Session Chair: Beihong Jin</b>
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1. GreenTech: A Case Study for Using the Web of Things in Household Energy Conservation  
*Yang Liu, Yan Liu, Qiang Li, Weijun Qin, Limin Sun*
2. IdleCached: An Idle Resource Cached Dynamic Scheduling Algorithm in Cloud Computing  
*Hu Song, Jing Li, Xinchun Liu*
3. Multi-Periodic Data Aggregation Scheme Based on Interest for Energy Efficiency in wireless sensor network  
*A-Jeong Jeong, Se-Mi Kim, Chae-Seok Lee, Jong-Deok Kim*
4. Implementation of Smart Power Management and Service System on Cloud Computing  
*Chao-Tung Yang, Wei-Sheng Chen, Kuan-Lung Huang, Wen-Hung Hsu, Ching-Hsien Hsu*

September 7, 2012 (Friday)	
08:00-12:00	Registration
09:00-10:40	GreenPS 2
10:40-11:00	Break
11:00-12:40	GreenPS 3
12:40-13:30	Lunch
13:30-14:00	Closing Session

<b>GreenPS 2: Environment-related Pervasive Applications</b> <b>Session Chair: Zhiwen Yu</b>
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1. WaterLady: A Case Study for Connecting Physical Devices into Social Networks  
*Longbiao Chen, Yaochun Li, Zeming Zheng, Li Zhang, Dan He, Xiaolong Li, Sha Zhao, Shijian Li, Gang Pan*
2. PPCare: A Personal and Pervasive Health Care System for the Elderly  
*Yan Tang, Shuangquan Wang, Yiqiang Chen, Zhenyu Chen*
3. Towards Scalable Processing for a Large-Scale Ride Sharing Service  
*Beihong Jin, Jiafeng Hu*

<b>GreenPS 3: Intelligent Human-Computer Interaction</b> <b>Session Chair: Jing Li</b>
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1. Context-Aware Mobile Web Browsing based on HTML5  
*Xinxin Zhang, Zhiwen Yu, Jilei Tian, Zhitao Wang, Bin Guo*
2. Fall Detection Using Features from A Five-phase Model on Mobile Phones  
*Yue Shi, Jin Huang, Yuanchun Shi, Xia Wang*
3. UI Portals: Sharing Arbitrary Regions of User Interfaces on Traditional and Multi-User Interactive Devices  
*Jie Liu, Haijun Xia, Yuanchun Shi*

# The UISTA 2012 Technical Program

September 7, 2012 (Friday)	
08:00-12:00	Registration
09:00-10:40	UISTA 1
10:40-11:00	Break
11:00-12:40	UISTA 2
12:40-13:30	Lunch
13:30-14:00	Closing Session

## UISTA 1:

Session Chair: Eric Jui-Lin Lu

1. A Universal Lightweight Authentication Scheme Based on Delegation Mechanism in Heterogeneous Networks  
*Chou-Chen Yang, Shin-Hao Lo and Eric Jui-Lin Lu*
2. A Patient Privacy-aware e-Health System based on Passive RFID  
*Kuo-Hui Yeh, N.W. Lo and Chieh Wang*
3. Efficiently Preserving Data-Privacy Range Queries in Two-Tiered Wireless Efficiently Sensor Networks  
*Thuc D. Nguyen, Thach V. Bui, Van H. Dang, Deokjai Choi*
4. Trusted Service Application Framework on Mobile Network  
*Xin Gu, Zhengquan XU, Yilin Fang*

## UISTA 2:

Session Chair: Chin-Hung Teng

1. Developing QR Code based Augmented Reality Using SIFT Features  
*Chin-Hung Teng and Bing-Shiun Wu*
2. A Web-based Interaction Design Tool: Pattern Language Toolkit  
*Chieh-Jen Chen, Chin-Hung Teng and Tsai-Yen Li*
3. An Augmented Reality Environment for Learning OpenGL Programming  
*Chin-Hung Teng and Jr-Yi Chen*

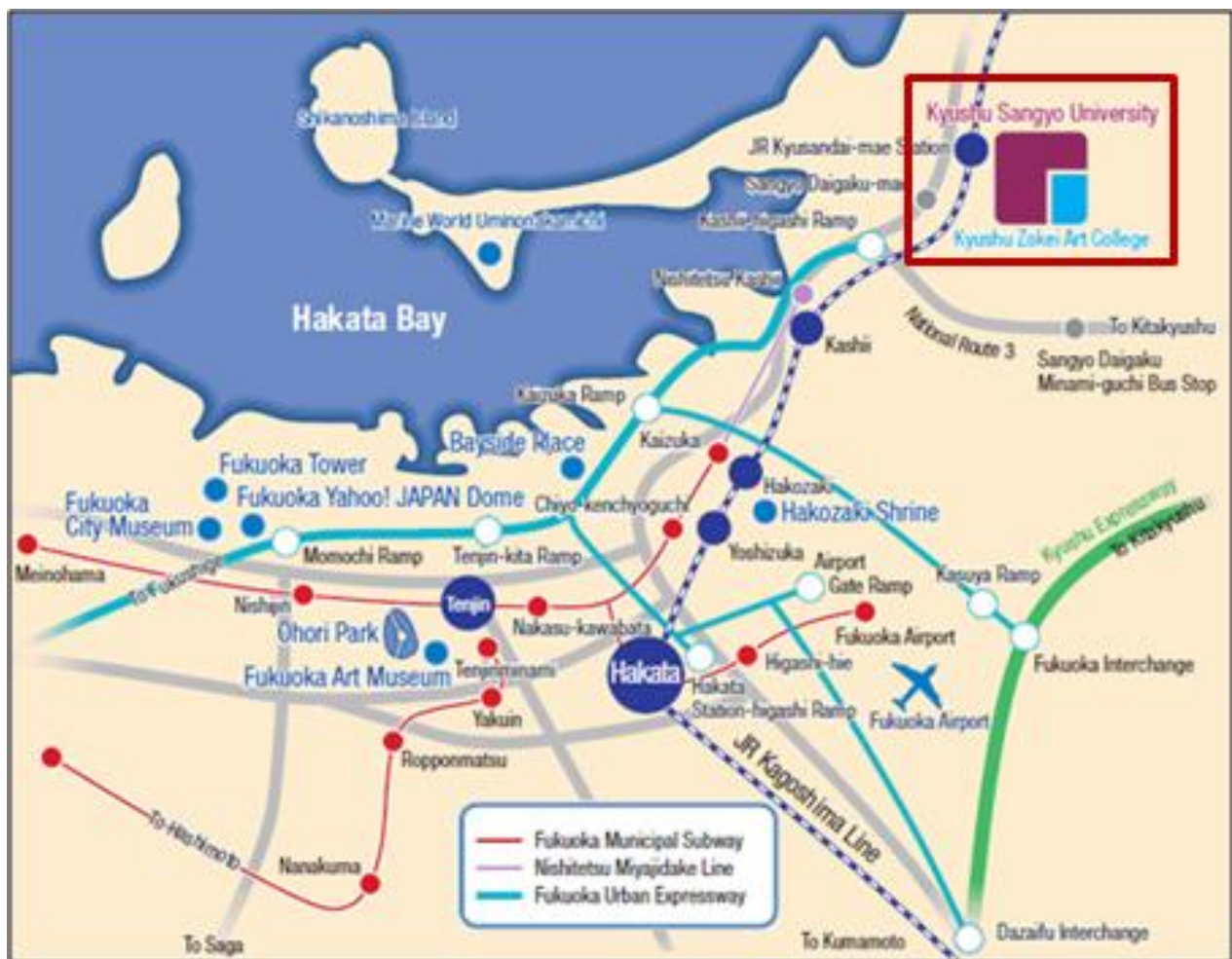
## UISTA 3:

Session Chair: Ching-Hu Lu

1. Imperceptible Visible Watermarking Scheme using Color Distribution Modulation  
*Wei-Fan Hsieh and Pei-Yu Lin*
2. A Self-authentication Mechanism for a (3, 3)-threshold Secret Sharing Scheme  
*Yi-Hui Chen and Ci-Wei Lan*
3. Enhancement of Human-Preference Assisted Activity Recognition Using a Cooperative ADL Infrastructure  
*Ching-Hu Lu and Li-Chen Fu*

**Conference Venue:**

**Faculty of Information Science, Kyushu Sangyo University**



**Public Transportation Access**

**Hakata Station to/from KSU (Conference Venue)**

**(a) By Train (from Hakata Station along JR Kagoshima Line)**

(1) Take the Local/Ordinary (普通: Futsuu) JR trains from Hakata Station to/from Kyusandai Mae Station. Rapid (快速: Kaisoku) trains or Semi Rapid (準快速: Jun-Kaisoku) trains do not stop at Kyusandai Mae Station. If you take the Rapid or Semi Rapid Train, you must change train at Kashii Station. On the average, Ordinary Trains run every 15-20 minutes, and it's only about 15 minutes train ride from Hakata Station to Kyusandai Mae Station.

(2) The train fare from Hakata Station to/from Kyusandai Mae Station is JPY 270.



**(b) By Bus (from Tenjin Yubinkyoku Mae Bus Stop)**

If you are staying somewhere in Tenjin area, you can take the:

(1) Highway Bus from Tenjin Yubinkyoku Mae Bus Stop and get-off at SanDai Minami-guchi Bus

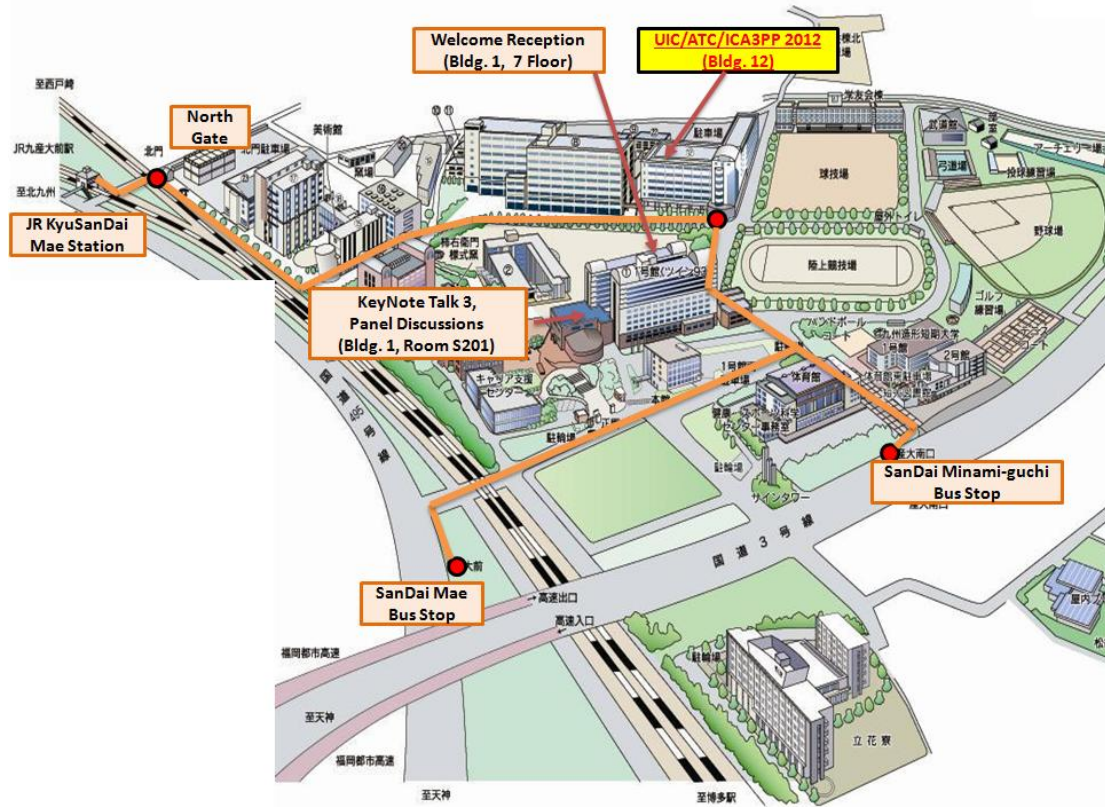
Stop (Fare: JPY 420). This bus takes the route via the Fukuoka Urban Expressway.

(2) Local Bus from Tenjin Yubinkyoku Mae Bus Stop and get-off at SanDai Mae Bus Stop (Fare: JPY 420). This bus stops at every bus stop along the way.

**(c) By Taxi (from Hakata Station)**

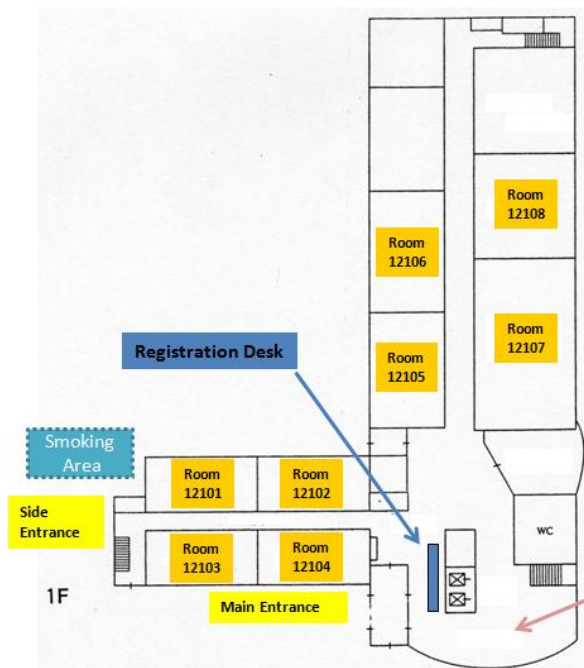
The taxi fare would be about JPY 3,500 or so (depending on the time of the day).

**KSU Campus Map**



**Faculty of Information Science Building (Bldg. 12)**

**1<sup>st</sup> Floor Plan, Bldg. 12**



**Internet Access**

- Wireless Internet access will be available at the conference venue. Connection instructions will be posted near the Registration Desk.

- Wired Internet access will be available in the conference rooms. Please bring with you your Ethernet cable.

**Internet Corner**

- Demo Session/Display  
Sept. 4, 13:00~15:50

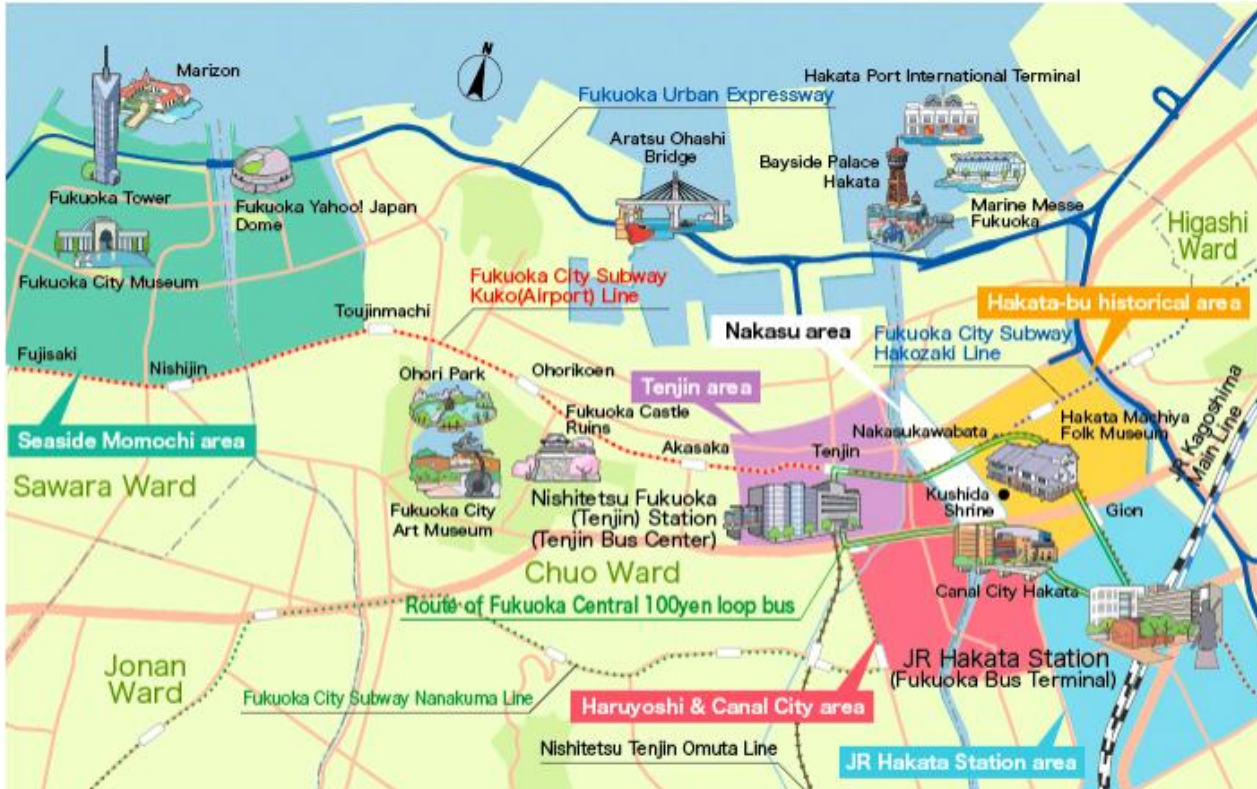


## Local Information

### Fukuoka City (Hakata and Tenjin Areas)

Fukuoka is an energetic city with a population of about 1.41 million and the centre of core city of politics, economy, culture and fashion in Kyushu. As "a gateway to Asia", it is well serviced by international air. It also has great accessibility in the city, for instance it only takes 5 minutes to Hakata station and 11 minutes to Tenjin from Fukuoka airport.

For more information on Fukuoka City, check < [http://yokanavi.com/viewpoint\\_eg](http://yokanavi.com/viewpoint_eg) >



## Hakata Station and some surrounding hotels



For more information on Hakata Station: <http://yokanavi.com/eg/landmark/index/46>

### Banquet Location

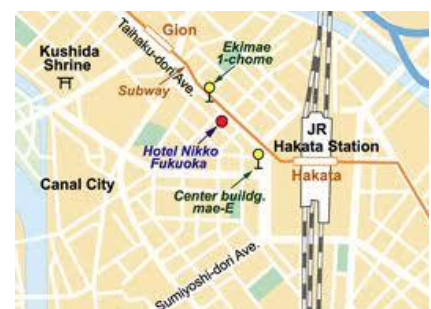
#### Hotel Nikko Fukuoka

##### Address:

2-18-25 Hakata Ekimae  
Hakata-ku, Fukuoka City, Fukuoka  
812-0011, Japan

TEL: +81-92-482-1111

FAX: +81-92-482-1127



## Some Hotel Information

### <English>

- **Hotel Nikko Fukuoka**

*Address:*

2-18-25 Hakata Ekimae  
Hakata-ku, Fukuoka City, Fukuoka  
812-0011, Japan

*TEL:* +81-92-482-1111

*FAX:* +81-92-482-1127

*URL/Reservations:*

<http://www.hotelnikko-fukuoka.com/en/>

- **Kamenoi Hotel Fukuoka Wajiro**

*Address:*

2-3-1 Wajirogaoka,  
Higashi-ku, Fukuoka City, Fukuoka,  
811-0213

*TEL:* +81-092-605-3303

*FAX:* +81-092-605-3345

*URL/Reservations:*

<http://www.kamenoi.com/fukuoka/english/>

- **Nishitetsu Inn Hakata**

*Address:*

1-17-6, HakataEkiMae,  
Hakata-ku, Fukuoka City, Fukuoka  
812-0011

*TEL:* +81-092-413-5454

*FAX:* +81-092-413-5466

*URL/Reservation:*

[http://btl.nishitetsutavel.jp/niccs/hotels/01en\\_inn-hakata.html](http://btl.nishitetsutavel.jp/niccs/hotels/01en_inn-hakata.html)

- **Hakata Green Hotel**

*URL/Reservation:*

[http://btl.nishitetsutavel.jp/niccs/hotels/01en\\_green.html](http://btl.nishitetsutavel.jp/niccs/hotels/01en_green.html)

### <Japanese>

- **ホテル日航福岡**

*住所:*

〒812-0011  
福岡県福岡市博多区  
博多駅前 2-18-25

*TEL:* 092-844-8111

*FAX:* 092-844-7887

*URL/Reservations:*

<http://www.hotelnikko-fukuoka.com/>

- **亀の井ホテル 福岡和白**

*住所:*

〒811-0213  
福岡県福岡市東区  
和白丘 2-3-1

*TEL:* 092-605-3303

*FAX:* 092-605-3345

*URL/Reservations:*

<http://www.kamenoi.com/fukuoka/english/>

- **西鉄イン博多**

*住所:*

〒812-0011  
福岡県福岡市博多区  
博多駅前 1-17-6

*TEL:* 092-413-5454

*FAX:* 092-413-5466

*URL/Reservation:*

[http://btl.nishitetsutavel.jp/niccs/hotels/01en\\_inn-hakata.html](http://btl.nishitetsutavel.jp/niccs/hotels/01en_inn-hakata.html)

- **博多グリーンホテル**

*URL/Reservation:*

<http://www.hakata-green.co.jp/>

## **Fukuoka Airport**

General information desks of the airport are each located on the 1st floor of terminal no.1, no.2 and no.3. You can get plane departure/arrival times, floor guide of the airport building, transportation information, reserve hotels and rental cars, and rent a wheelchair /baby stroller. The information desk opens at 7:45AM.

<http://yokanavi.com/eg/landmark/index/694>

## **Hakata Port**

Hakata Port International Terminal provides passenger liner routes to Busan and handled approximately 873,000 international passengers in 2010. In terms of the annual number of international passengers, the Port of Hakata ranks first among Japanese sea ports for 18 consecutive years since 1993 when the terminal was opened at Chuo Wharf. < <http://port-of-hakata.city.fukuoka.lg.jp/english/passenger/ferry1.html> >

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