



# The 11th IEEE International Conference on High Performance Computing and Communications (HPCC-09)

**Organized by** St. Francis Xavier University, Canada  
SERSC, Korea  
Korea University, Korea

**Sponsored by** IEEE and IEEE Computer Society  
IEEE Technical Committee of Scalable Computing (TCSC)



# TABLE OF CONTENTS

<b>Program at a Glance</b>	<b>Page 1</b>
<b>Keynote Speakers</b>	<b>Page 2-5</b>
<b>Detailed Conference Schedule</b>	<b>Page 6-11</b>
<b>Conference Committees</b>	<b>Page 12-19</b>

# HPCC-09 PROGRAM AT A GLANCE

June 25, 2009 (Thursday)			
11:30	Registration		
12:45-13:00	Opening Remarks <b>Conference venue: Korea University-Inchon Memorial Hall</b> (Big Hall –Room 101-, 1 <sup>st</sup> floor)		
13:00-15:30	<b>S1: Algorithms &amp; Applications I</b> (Big Hall –Room 101-, 1 <sup>st</sup> floor)	<b>S2: Reliability, Fault-Tolerance &amp; Security</b> (Room I -201-, 2 <sup>nd</sup> floor)	<b>AHPCN/S1: Parallel, Distributed &amp; Grid Computing I</b> (Room II -203-, 2 <sup>nd</sup> floor)
15:30-16:00	Coffee Break (Lounge, 2 <sup>nd</sup> floor)		
16:00-18:30	<b>S3: Algorithms &amp; Applications II</b> (Big Hall –Room 101-, 1 <sup>st</sup> floor)	<b>S4: Privacy &amp; Network Communications</b> (Room I -201-, 2 <sup>nd</sup> floor)	<b>AHPCN/S2: Parallel, Distributed &amp; Grid Computing II</b> (Room II -203-, 2 <sup>nd</sup> floor)
18:30-20:00	Reception Dinner (VIP Hall, 1 <sup>st</sup> floor)		
June 26, 2009 (Friday)			
09:00	Registration		
09:30-10:30	Keynote 1 (ISA 2009): <b>Cloud Computing Security</b> by <b>Prof. Jong Sou Park</b> , <i>Korea Aerospace University, Korea</i> (Big Hall –Room 101-, 1 <sup>st</sup> floor)		
10:30-11:00	Coffee Break (Lounge, 2 <sup>nd</sup> floor)		
11:00-12:00	Keynote 2: <b>Virtual Clusters for Grid, Cloud, and High-performance Computing</b> by <b>Prof. Kai Hwang</b> , <i>University of Southern California, USA</i> (Big Hall –Room 101-, 1 <sup>st</sup> floor)		
12:00-13:00	Lunch (VIP Hall, 1 <sup>st</sup> floor)		
13:00-15:30	<b>S5: Architectures &amp; Systems</b> (Big Hall –Room 101-, 1 <sup>st</sup> floor)	<b>S6: Wireless &amp; Mobile Communications I</b> (Room I -201-, 2 <sup>nd</sup> floor)	<b>AHPCN/S3: Algorithms &amp; Applications</b> (Room II -203-, 2 <sup>nd</sup> floor)
15:30-16:00	Coffee Break (Lounge, 2 <sup>nd</sup> floor)		
16:00-17:30	<b>Panel: "Software development and deployment challenges for next generation computer architectures"</b> <b>Moderator: Edgar Gabriel</b> <b>Panelists: Jeremie Allard, Justin Y. Shi, Felix Wolf, Yunquan Zhang, Albert Y. Zomaya</b> (Big Hall –Room 101-, 1 <sup>st</sup> floor)		
19:00-21:00	Banquet (Holiday Inn Seongbuk Hotel)		
June 27, 2009 (Saturday)			
09:00	Registration		
09:30-10:30	Keynote 3: <b>Energy-Aware Scheduling and Resource Allocation for Large-Scale Distributed Systems</b> by <b>Prof. Albert Y. Zomaya</b> , <i>The University of Sydney, Australia</i> (Big Hall –Room 101-, 1 <sup>st</sup> floor)		
10:30-11:00	Coffee Break (Lounge, 2 <sup>nd</sup> floor)		
11:00-12:00	Keynote 4 (ISA 2009): <b>RFID and USN Technologies and their Security Issues</b> by <b>Dr. Kyo-il Chung</b> , <i>Electronics and Telecommunication Research Institute (ETRI), Korea</i> (Big Hall –Room 101-, 1 <sup>st</sup> floor)		
12:00-13:00	Lunch (VIP Hall, 1 <sup>st</sup> floor)		
13:00-15:30	<b>S7: Grid, Cluster &amp; Parallel Computing I</b> (Big Hall –Room 101-, 1 <sup>st</sup> floor)	<b>S8: Wireless &amp; Mobile Communications II</b> (Room I -201-, 2 <sup>nd</sup> floor)	<b>AHPCN/S4: Architectures &amp; Networks I</b> (Room II -203-, 2 <sup>nd</sup> floor)
15:30-16:00	Coffee Break (Lounge, 2 <sup>nd</sup> floor)		
16:00-18:30	<b>S9: Grid, Cluster &amp; Parallel Computing II</b> (Big Hall –Room 101-, 1 <sup>st</sup> floor)	<b>IWPAPS</b> (Room I)	<b>MMAP &amp; NSDM</b> (Room IV -206-)
			<b>AHPCN/S5: Architectures &amp; Networks II</b> (Room II -203-, 2 <sup>nd</sup> floor)

## Keynote 1 (ISA 2009): Cloud Computing Security

*Prof. Jong Sou Park, Korea Aerospace University, Korea*

### About the keynote speaker



Jong Sou Park received the M.S. degree in Electrical and Computer Engineering from North Carolina State University in 1986. And he received his Ph.D in Computer Engineering from The Pennsylvania State University in 1994. From 1994 - 1996, he worked as an assistant Professor at The Pennsylvania State University in Computer Engineering Department and he was president of the KSEA Central PA, Chapter. He is currently a full professor in Computer Engineering Department, Korea Aerospace University. His main research interests are information security, embedded system, cloud computing and hardware design. He is a member of IEEE and IEICE, and he is an executive board member of the Korea Institute of Information Security and Cryptology, and Korea Information Assurance Society. He has published more than 100 technical conference and journal papers related to information security, embedded system, and hardware design.

### Summary:

Cloud computing is an emerging computing paradigm where data and services reside in massively scalable data centers and can be ubiquitously accessed from any connected devices over the Internet. Many academic and industry put a lot of efforts on research and development of cloud computing. According to Berkeley RAD Lab's view of Cloud computing, the one of major obstacles of cloud computing is availability of a service. In addition to availability of cloud computing services, performance, security, and survivability of the cloud computing system should be guaranteed under a variety of failures and malicious attacks. Furthermore, cloud computing service users' service level agreements (SLAs) such as availability and reliability should be satisfied. In this talk, we will talk about (1) cloud computing basic (2) security issues on cloud computing (3) DDOS attack on cloud computing.

## The 11<sup>th</sup> IEEE International Conference on High Performance Computing and Communications (HPCC-09)

### Keynote 2: Virtual Clusters for Grid, Cloud, and High-performance Computing

*Prof. Kai Hwang, University of Southern California, USA*

#### About the keynote speaker



Dr. Kai Hwang is a Professor of Electrical Engineering and Computer Science and Director of Internet and P2P/Grid Computing Laboratory at the University of Southern California (USC). He received the Ph.D. in Electrical Engineering and Computer Science from the University of California, Berkeley in 1972. Prior to joining USC in 1985, he has taught at Purdue University for many years. He has served as a visiting Chief Scientist at the Institute of Computing Technology, Chinese Academy of Sciences during 2008. Presently, he also serves as an EMC endowed visiting Professor at Tsinghua University.

An IEEE Fellow, he specializes in computer architecture, parallel processing, Internet security, and distributed computing systems. He has published 8 books and over 210 scientific papers in these areas. He is the founding Editor-in-Chief of the Journal of Parallel and Distributed Computing. He is also on the Editorial Board

of IEEE Transactions on Parallel and Distributed Systems. He has lectured worldwide and performed advisory work for IBM, Intel, MIT Lincoln Lab., JPL in Caltech, Academia Sinica in China, ETL in Japan, GMD in Germany, and INRIA in France. He can be reached via Email: [kaihwang@usc.edu](mailto:kaihwang@usc.edu) or visit his web site: <http://Gridsec.usc.edu/Hwang.html>.

#### Summary:

In this talk, the impact of cloud computing and emerging Internet applications will be accessed. A virtual-machine approach to cluster partitioning and mechanisms for replicated data protection will be presented. These techniques enable dynamic cloud resource provisioning and secure data management in web-scale distributed computing and business applications. The talk covers the impact of virtualization on grid, cloud, and high-performance computing platforms. He will discuss research frontiers in building virtualized grid/cloud infrastructures and assessing some grid/cloud projects at USA, France, Japan, and China, that explore distributed server clusters and globally deployed datacenters.



### Keynote 3: Energy-Aware Scheduling and Resource Allocation for Large-Scale Distributed Systems

*Prof. Albert Y. Zomaya, University of Sydney, Australia*

#### About the keynote speaker



Albert Y. Zomaya is currently the Chair Professor of High Performance Computing and Networking in the School of Information Technologies, The University of Sydney. Prior to joining Sydney University he was a Full Professor in the Electrical and Electronic Engineering Department at the University of Western Australia, where he also led the Parallel Computing Research Laboratory during the period 1990–2002. He is the author/co-author of seven books, more than 350 publications in technical journals and conferences, and the editor of eight books and eight conference volumes. He is currently an associate editor for 16 journals, the Founding Editor of the Wiley Book Series on Parallel and Distributed Computing and a Founding Co-Editor of the Wiley Book Series on Bioinformatics. Professor Zomaya was the Chair the IEEE Technical Committee on Parallel Processing (1999–2003) and currently serves on its executive committee. He also serves on

the Advisory Board of the IEEE Technical Committee on Scalable Computing and IEEE Systems, Man, and Cybernetics Society Technical Committee on Self-Organization and Cybernetics for Informatics and is a Scientific Council Member of the Institute for Computer Sciences, Social–Informatics, and Telecommunications Engineering (in Brussels). He received the 1997 Edgeworth David Medal from the Royal Society of New South Wales for outstanding contributions to Australian Science. Professor Zomaya is also the recipient of the Meritorious Service Award (in 2000) and the Golden Core Recognition (in 2006), both from the IEEE Computer Society. He is a Chartered Engineer (CEng), a Fellow of the American Association for the Advancement of Science, the IEEE, the Institution of Electrical Engineers (U.K.), and a Distinguished Engineer of the ACM. His research interests are in the areas of high performance computing, parallel algorithms, mobile computing, and bioinformatics.

#### Summary:

Global warming and climate change trends call for urgent action to manage information and communication technologies in a sustainable manner by minimizing energy consumption and utilizing resources more efficiently. Distributed computing environments have become the de facto platforms for many applications. These systems bring a range of heterogeneous resources that should be able to function continuously and autonomously. However, distributed systems expend a lot of energy which raises a range of important research issues related to the use and virtualisation of ICT resources in a way offers significant potential to contribute to the goal of what has been described as 'green computing'. This talk will review some of the important questions related to the development of new algorithms and tools for energy-aware resource management allocation for large-scale distributed systems enabling these systems to become environmentally friendly.

## The 11<sup>th</sup> IEEE International Conference on High Performance Computing and Communications (HPCC-09)

### Keynote 4 (ISA 2009): RFID and USN Technologies and their Security Issues

*Dr. Kyo-il Chung, Electronics and Telecommunication Research Institute (ETRI), Korea*

#### About the keynote speaker



Dr. Chung, Principal Member of Engineering Staff of Information Security Research Division has joined ETRI (Electronics and Telecommunication Research Institute) since 1982.

He is concerned in the information security technology field for the mobile environments, IC card system, electronic payment, biometrics, information warfare, digital forensics, ubiquitous computing including RFID/USN and a variety of cryptographic technologies. He has many talks related in information security technologies. As writings, he has many patents and research papers related in the information security. Also he has published some books related to Information Security and RFID. Especially, as the member of ITU-T SG17, he had lead international standardization about the security framework in the telecommunication system. Also, he presented the "Security issues in RFID systems" in ITU Workshop,

October, 2005, "Security Issues in RFID and Sensor Networks" in ITU Workshop, February, 2006, "Security Issues in RFID and Allocated Frequency Band for RFID in Korea" in OECD Foresight Forum, 2005, and "Mobile RFID Technologies in Korea" in RFID/EPC Asia Adoption Forum, 2008.

As well, he was a professor of next generation security part in UST (University of Science and Technology, Korea), and now he is working for standardization in various SDOs such as Chair of TC1 (Technical Committee of Common Base Technology) in TTA (Telecommunications Technology Association), Chair of Home Network Security Forum, Chair of IC Card Forum in KEPIA (Korea Electronic Payment Industries Association), Chair of Security Group in Mobile RFID Forum, Chair of Electronic Passport Standardization Group of IC Card Research Centre in SNU (Seoul National Univ.).

He was registered in "International Who's Who" 2003 edition. He has received a Letter of Commendation from MIC (Ministry of Information and Communication, 1992) and MOST (Ministry of Science and Technology, 2006), the Technology Enhanced Award from KIISC (Korea Institute of Information Security & Cryptology, 2004) and the Distinguished Service Awards from IEEK (Institute of Electronic Engineers of Korea, 2007), ATS (Korea Agency for Technology and Standards, 2007), TTA (Telecommunications Technology Association, 2007), NPA (Korea National Police Agency, 2007), KISIA (Korea Information Security Industries Association, 2008).

#### Summary:

Recently, the evolution of ICT (Information & Communication Technology) has lead the information-oriented society more comfortable, more convenient. These are possible on the RFID/USN technologies.

In this talk, we discuss the security issues on the RFID/USN technologies. I will present three distinct sections: 1) introduction of RFID/USN technologies; 2) security issues, technologies and examples in RFID system; 3) security issues in USN system. Also we discuss the side-channel attack to RFID and sensor devices.

# DETAILED SCHEDULE FOR HPCC-09

June 25, 2009 (Thursday)

9:00-12.00 : Registration

12:45-13:00: Opening Remarks

13:00-15:30: Parallel Sessions S1, S2 and AHPCN/S1

**S1: Algorithms & Applications I** (Chair: Josep-Lluis Larriba-Pey)

**Fast Parallel Expectation Maximization for Gaussian Mixture Models on GPUs using CUDA**

*Phani Kumar Nyshadham, Sanjiv Satoor, Ian Buck*

**A Hybrid System with Hidden Markov Models and Gaussian Mixture Models for Myocardial Infarction Classification with 12-Lead ECGs**

*Pei-Chann Chang, Jui-Chien Hsieh, Jyun-Jie Lin, Yen-Hung Chou*

**A Massively Parallel Approach to Affine Transformation in Medical Image Registration**

*Huynh Luong, Jong Myon Kim*

**Scheduling Large-Scale DNA Sequencing Applications**

*Sudha Gunturu, Xiaolin Li, Laurence T. Yang*

**Dynamic Communication-Efficient Parallel Sorting on SMPs**

*Tipraporn Thanakulwarapas, Jeeraporn Werapun*

**Parallel Dense Gauss-Seidel Algorithm on Many-Core Processors**

*Hadrien Courtecuisse, Jeremie Allard*

**S2: Reliability, Fault-Tolerance & Security** (Chair: Justin Y. Shi)

**Reliability Optimization of Reconfigurable Computing Based Fault-Tolerant System**

*Mi Zhou, Li Hong Shang, Yu Hu*

**A Mixed Software Rejuvenation Policy for Multiple Degradations Software System**

*Xiaozhi Du, Yong Qi, Di Hou*

**N-Level Diskless Checkpointing**

*Doug Hakkarinen, Zizhong Chen*

**Fast Live Cloning of Virtual Machine Based on Xen**

*Yifeng Sun, Yingwei Luo, Xiaolin Wang, Zhenlin Wang, Binbin Zhang, Haogang Chen, Xiaoming Li*

**A Pattern-Based General Security Framework: An eBusiness Case Study**

*Azzedine Benameur, Smriti K.Sinha, Ayda Saidane*

**Polymorphic Worm Detection Using Signatures Based on Neighborhood Relation**

*Jie Wang, Jianxin Wang, Jianer Chen*

**AHPCN/S1: Parallel, Distributed & Grid Computing I** (Chair: Felix Wolf)

**MigBSP: A Novel Migration Model for Bulk-Synchronous Parallel Processes Rescheduling**

*Rodrigo Righi, Laercio Pilla, Alexandre Carissimi, Philippe Navaux, Hans-Ulrich Heiss*

**A Comparison of Two Master-worker Scheduling Methods**

*Luis de la Torre, Jaime Seguel*

**A Non-Critical Path Earliest-Finish Algorithm for Inter-dependent Tasks in Heterogeneous Computing Environments**

*Liang-Teh Lee, Ching-Wei Chen, Hung-Yuan Chang, Chih-Chieh Tang, Kun-Chi Pan*

**Towards Predictive Modeling of Message-Passing Communication**

*Verdi March, Vijayaraghavan Murali, Teo Yong Meng, Simon See, James Himer*

**Parallelization and Performance Analysis of an IMPES-based Oil-Water Reservoir Simulator**

*Fadi Sibai, Hashir Kidwai*



**Adjacency-Based Mesh Process Mapping for Irregular Cluster Systems**  
*Sangman Moh*

**15:30-16:00: Coffee Break**

**16:00-18:30: Parallel Sessions S3, S4 and AHPCN/S2**

**S3: Algorithms & Applications II (Chair: Zizhong Chen)**

**Matrix Inversion on the Cell/B.E. Processors**

*Shodai Yokoyama, Kazuya Matsumoto, Stanislav Sedukhin*

**Kahn Process Networks are a Flexible Alternative to MapReduce**

*Zeljko Vrba, Paal Halvorsen, Carsten Griwodz, Paul Beskow*

**Efficient Mining of Weighted Frequent Patterns Over Data Streams**

*Chowdhury Farhan Ahmed, Syed Khairuzzaman Tanbeer, Byeong-Soo Jeong, Young-Koo Lee*

**Parallel and Distributed Frequent Pattern Mining in Large Databases**

*Syed Khairuzzaman Tanbeer, Chowdhury Farhan Ahmed, Byeong-Soo Jeong*

**Cache-aware Load Balancing vs Cooperative Caching for Distributed Search Engines**

*David Domínguez-Sal, Marta Pérez-Casany, Josep Lluís Larriba-Pey*

**A Flexible Two-Layer Buffer Caching Scheme for Shared Storage Server**

*Meng Xiaoxuan, Si Chengxiang, Na Wenwu, Xu Lu*

**S4: Privacy & Network Communications (Chair: Karim Djemame)**

**A New Grid-Based Cloaking Algorithm for Privacy Protection in Location-Based Services**

*Jungho Um, Hyeongil Kim, Youngho Choi, Jaewoo Chang*

**Adaptive Voice Spam Control with User Behavior Analysis**

*Yan Bai, Xiao Su, Bharat Bhargava*

**Frame-based Architecture with Shared Buffers for Slotted Optical Packet Switching**

*Guan-Hong Zhou, Woei Lin*

**Efficient Java Communication Libraries over InfiniBand**

*Guillermo L. Taboada, Juan Touriño, Ramón Doallo, Yao Lin, Jizhong Han*

**6LoWPAN-SNMP: Simple Network Management Protocol for 6LoWPAN**

*Haksoo Choi, Nakyoung Kim, Hojung Cha*

**On Achieving the Maximum Internet Capacity in Wireless Mesh Networks**

*Bin Xie, Haitong Wang, Dharma Agrawal*

**AHPCN/S2: Parallel, Distributed & Grid Computing II (Chair: Iván Roderó)**

**A Software Framework to Support Adaptive Applications in Distributed/Parallel Computing**

*Hao Liu, Søren-Aksel Sørensen, Amril Nazir*

**A Lightweight Approach of Automatic Resource Configuration in Distributed Computing**

*Hao Liu, Søren-Aksel Sørensen, Amril Nazir*

**A Performance-based Dynamic Loop Partitioning on Grid Computing Environments**

*Chao-Tung Yang, Lung-Hsing Cheng*

**Experiences of On-demand Execution for Large Scale Parameter Sweep Applications on OSG by Swift**

*Zhengxiong Hou, Mike Wilde, Mihael Hategan, Xingshe Zhou, Ian Foster, Ben Clifford*

**A Study of Bare PC Web Server Performance for Workloads with Dynamic and Static Content**

*Long He, Ramesh Karne, Alexander Wijesinha, Ali Emdadi*

**VL-DSC: A Dynamic Services Composition Based Model for Virtual Laboratory Platform and Its Implementation**

*Jianxin Wang, Qinglong Zhang, Songqiao Chen, Zhaohui Xie*

**18:30-20:00: Reception Dinner**

**June 26, 2009 (Friday)**

**09:00- : Registration**

**09:30-10:30: Keynote 1 (ISA 2009): “Cloud Computing Security”**

**(Chair: Hang-Bae Chang)**

**Prof. Jong Sou Park, Korea Aerospace University, Korea**

**10:30-11:00: Coffee Break**

**11:00-12:00: Keynote 2 : “Virtual Clusters for Grid, Cloud, and High-performance Computing”**

**(Chair: Juan Touriño)**

**Prof. Kai Hwang, University of Southern California, USA**

**12:00-13:00: Lunch**

**13:00-15:30: Parallel Sessions S5, S6 and AHPCN/S3**

**S5: Architectures & Systems (Chair: Laurence T. Yang)**

**Performance of Triplet based Interconnection Strategy for Multi-Core On-Chip Processors**

*Haroon-Ur-Rashid Khan, Shi Feng, Ji Weixing*

**Dynamically Filtering Thread-Local Variables in Lazy-Lazy Hardware Transactional Memory**

*Sutirtha Sanyal, Adrián Cristal, Osman Unsal, Mateo Valero, Sourav Roy*

**On the Performance of Commit-Time-Locking Based Software Transactional Memory**

*Zhengyu He, Bo Hong*

**Balancing Data Locality and Parallelism on Shared-cache Multi-core Systems**

*Michael Jason Cade, Apan Qasem*

**On Instruction-Level Method for Reducing Cache Penalties in Embedded VLIW Processors**

*Samir Ammenouche, Sid Ahmed Ali Touati, William Jalby*

**Automated Design of Logic Circuits with an Inceasable Evolution Approach**

*Guoliang He, Naixue Xiong, Laurence T. Yang, Yuanxiang Li*

**S6: Wireless & Mobile Communications I (Chair: Bin Xie)**

**A Priority-based Hybrid Protocol in Wireless Sensor Networks**

*Hsu-Jung Liu, Mei-Wen Huang, Wen-Shyong Hsieh, Chenhuan Jack Jan*

**A Compensation-based Reliable Data Delivery for Instant Wireless Sensor Network**

*Yi-Ying Zhang, Xi Luo, Myong-Soon Park, Laurence T Yang, Lei Shu, Weiwei Fang*

**Dynamic Routing Layer for Data Query in Wireless Sensor Networks**

*Zusheng Zhang, Fengqi Yu, Liang Chen*

**Neighbors Investment Geographic Routing Algorithm in Wireless Sensor Network**

*Jianxin Wang, Huiyu Liu, Xiangning Zhao*

**A Potential Based Routing Protocol for Mobile Ad Hoc Networks**

*Dai-Young Kwon, Jae-Hwa Chung, Kyeong Hur, Won-Gyu Lee*

**Link Quality Aware Route Discovery for Robust Routing and High Performance in Mobile Ad Hoc Networks**

*Sangman Moh*

**AHPCN/S3: Algorithms & Applications (Chair: Jaime Seguel)**

**A Hybrid Genetic-Immune Algorithm with Improved Offsprings and Elitist Antigen for Flow-shop Scheduling Problems**

*Pei-Chann Chang, Wei-Hsiu Huang, Ching-Jung Ting, Ling-Chun Wu*

**A Varietal Genetic Algorithm by External Self-evolving Multiple-archives for Combinatorial Optimization Problems**

*Pei-Chann Chang, Wei-Hsiu Huang, Ching-Jung Ting, Wei-Je Chang, Chia-Hua Chang*

**A Coarse-grained Parallel Genetic Algorithm with Migration for Shortest Path Routing Problem**

*Salman Yussuf, Rina Azlin Razali, Hang See Ong, Azimah Abd Ghapar, Marina Md Din*

**On Mining Repeating Pattern with Gap Constraint**

*Shin-Yi Chiu, Shih-Chuan Chiu, Jiun-Long Huang*

**KBS-MAQAO: A Knowledge Based System for MAQAO Tool**

*Lamia Djoudi, William Jalby*

**Networked Haptic Virtual Environments Supporting Ultra High Resolution Display**

*Seokho Son, Vinay Ramachandra, JongWon Kim*

**15:30-16:00: Coffee Break**

**16:00-17:30: Panel: Software development and deployment challenges for next generation computer architectures**

**Moderator: Edgar Gabriel**

**Panelists: Jeremie Allard, Justin Y. Shi, Felix Wolf, Yunquan Zhang, Albert Y. Zomaya**

**19:00-21:00: Banquet**

**June 27, 2009 (Saturday)**

**09:00- : Registration**

**09:30-10:30: Keynote 3: “Energy-Aware Scheduling and Resource Allocation for Large-Scale Distributed Systems”**

**(Chair: Jong Hyuk Park)**

**Prof. Albert Y. Zomaya, University of Sydney, Australia**

**10:30-11:00: Coffee Break**

**11:00-12:00: Keynote 4 (ISA 2009): “RFID and USN Technologies and their Security Issues”**

**(Chair: Sang-Soo Yeo)**

**Dr. Kyo-il Chung, Electronics and Telecommunication Research Institute (ETRI), Korea**

**12:00-13:00: Lunch**

**13:00-15:30: Parallel Sessions S7, S8 and AHPCN/S4**

**S7: Grid, Cluster & Parallel Computing I (Chair: Verdi March)**

**Evaluation of Coordinated Grid Scheduling Strategies**

*Iván Roderó, Francesc Guim, Julita Corbalán*

**Online Metatask Scheduling Heuristics for a Bidding-based Distributed System**

*Chien-Min Wang, Hsi-Min Chen, Chun-Chen Hsu*

**Graph-based Task Replication for Workflow Applications**

*Raúl Sirvent, Rosa M. Badía, Jesús Labarta*

**A Cost Efficient Framework for Managing Distributed Resources in a Cluster Environment**

*Amril Nazir, Hao Liu, Søren-Aksel Sørensen*

**Evaluating Provider's Risk Assessment Reliability in Grid Resource Brokering**

*Iain Gourlay, Karim Djemame, James Padgett*

**A Streaming Intrusion Detection System for Grid Computing Environments**

*Matthew Smith, Fabian Schwarzer, Marian Harbach, Thomas Noll, Bernd Freisleben*

**S8: Wireless & Mobile Communications II (Chair: Albert Y. Zomaya)**

**Design of Structure-Free and Energy-Balanced Data Aggregation in Wireless Sensor Networks**

*Chih-Min Chao, Tzu-Ying Hsiao*

**A High Energy Efficient Localization Algorithm for Wireless Sensor Networks Using Directional Antennas**

*Baoli Zhang, Fengqi Yu*

**Localization of Wireless Sensor Networks Using a Moving Beacon with a Directional Antenna**

*Yao-Hung Wu, Wei-Mei Chen*

**A Game Theory based Load-Balancing Routing with Cooperation Stimulation for Wireless Ad Hoc Networks**

*Fan Jiang*

**Efficient Geo-Tracking and Adaptive Routing of Mobile Assets**

*Dineshbalu Balakrishnan, Amiya Nayak, Pulak Dhar, Shailesh Kaul*

**Adaptive Multi-Channel Utilization Scheme for Coexistence of IEEE802.15.4 LR-WPAN with Other Interfering Systems**

*Kwang-il Hwang*

**AHPCN/S4: Architectures & Networks I (Chair: Yunquan Zhang)**

**Performance Analysis of NAND Flash-based SSD for designing a Hybrid Filesystem**

*Jinsun Suk, Jaechun No*

**Orthogonal Instruction Encoding for a 16-bit Embedded Processor with Dynamic Implied Addressing Mode**

*Daeho Kim, Jonghee M. Youn, Minwook Ahn, Yunheung Paek*

**SSARC: the Short-Sighted Adaptive Replacement Cache**

*Zhiguang Chen, Nong Xiao, Yingjie Zhao, Zhong'an Lao*

**Double Binary Turbo Coding for BPPM-TH and BPAM-DS UWB Systems**

*Eun Cheol Kim, Jin Young Kim*

**packetC Language for High Performance Packet Processing**

*Ralph Duncan, Peder Jungck*

**General Euler Hadamard/DFT/DCT Polynomial Function for Complex Signal Processing**

*Jia Hou, Moon Ho Lee, Ju Yong Park*

**15:30-16:00: Coffee Break**

**16:00-18:30: Parallel Sessions S9, IWPAPS, MMAP & NSDM, and AHPCN/S5**

**S9: Grid, Cluster & Parallel Computing II (Chair: Matthew Smith)**

**Grid Network Dimensioning by Modeling the Deadline Constrained Bulk Data Transfers**

*Kashif Munir, Pascale Primet, Michael Welzl*

**Resource Leasing and the Art of Suspending Virtual Machines**

*Borja Sotomayor, Rubén S. Montero, Ignacio M. Llorente, Ian Foster*

**Performance Evaluation of Unified Parallel C Collective Communications**

*Guillermo L. Taboada, Carlos Teijeiro, Juan Touriño, Basilio B. Fragueta, Ramón Doallo, José Carlos*

*Mouriño, Damián A. Mallón, Andrés Gómez.*

**A Simple Performance Model for Multithreaded Applications Executing on Non-Uniform Memory Access Computers**

*Rui Yang, Joseph Antony, Alistair Rendell*

**Decoupling As a Foundation for Large Scale Parallel Computing**

*Justin Y. Shi*

**A Framework for Effective Memory Optimization of High Performance Computing Applications**

*Pingjing Lu, Yonggang Che, Zhenghua Wang*

## **IWPAPS**

**Performance Evaluation of Multithreaded Sparse Matrix-Vector Multiplication using OpenMP**

*Shengfei Liu, Yunquan Zhang, Xiangzheng Sun, RongRong Qiu*

**A Parallel Memory Efficient Framework for Out-of-Core Meshes Simplification**

*Yongquan Lu, Nan Li, Pengdong Gao, Chu Qiu, Jintao Wang, Rui Lv*

**A Task-Based Fault-Tolerance Mechanism to Hierarchical Master/Worker with Divisible Tasks**

*Zhihui Dai, Fabien Viale, Xuebin Chi, Denis Caromel*

**A Parallel Refined Block Arnoldi Algorithm for Large Unsymmetric Matrices**

*Tao Zhao, Jinrong Jiang, Jun Liu, Xuebin Chi, Zhonghua Lu*

**QuantWiz: A Parallel Software Package for LC-MS-based Label-free Protein Quantification**

*Wang Jing, Zhang Yunquan, Zhang Xianyi, Sun Xiangzheng, Hu Zelin, Li Sujun, Zeng Rong*

**RCC: A New Programming Language for Reconfigurable Computing**

*Fengbin Qi, Xianyi Zhang, Shanshan Wang, Xingquan Mao*

## **MMAP & NSDM**

**A Quantitative Study of Memory System Interference in Chip Multiprocessor Architectures**

*Magnus Jahre, Marius Grannaes, Lasse Natvig*

**A Case Study for Fault Tolerance Oriented Programming in Multi-core Architecture**

*Lu Yang, Zhanqi Cui, Xuandong Li*

**Dynamic Resource Management for Longevity in Web Server Systems**

*Seok-Bong Choi, Jong-Kook Kim*

**C2Cfs: A Collective Caching Architecture for Distributed File Access**

*Andrey Ermolinskiy*

**RDPA: Reliability-aware Data Placement Algorithm for Large-scale Network Storage Systems**

*Tao Chen, Fang Liu, Nong Xiao*

**Volume based Metadata Isolation in Blue Whale Cluster File System**

*Zhang Jing-Liang, Zhang Jian-Gang, Han Xiao-Ming, Xu Lu*

## **AHPCN/S5: Architectures & Networks II (Chair: Jeremie Allard)**

**Designing and Implementing an IEEE 802.16 Network Simulator for Performance Evaluation of Bandwidth Allocation Algorithms**

*Yuan-Cheng Lai, Yen-Hung Chen*

**Achieving Sub-second IGP Convergence through OSPF Distributed in Scalable Router**

*XueZhi Jiang, Mingwei Xu, Qi Li, Lingtao Pan*

**An ECN-Based Congestion Control Algorithm for TCP Enhancement in Wireless LAN**

*Jiawei Huang, Jianxin Wang*

**A Hierarchical Localization Scheme for Large Scale Underwater Wireless Sensor Networks**

*Yi Zhou, Kai Chen, Jianhua He, Jianbo Chen, Alei Liang*

**Adaptive Vertical Handoff Decision Algorithm for Wireless Heterogeneous Networks**

*Anita Singhrova, Nupur Prakash*

**Detection and Location of Evil Nodes Based on Source Coding and Multi-path Transmission in WSN**

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