

HPCC 2010 Program

Tuesday 31 August 2010

16:00-18:00	Pre-Registration (Level 1 PRE FUNCTION)
18:30-20:00	Welcome Reception (Lumia Bar)

Wednesday 1 September 2010 Morning

08:30-09:00	Opening and Welcome (CCH 1 & 2) <i>Prof Wanlei Zhou (NSS/HPCC 2010 General Chair, Deakin University, Australia)</i> <i>Dr Yang Xiang (HPCC 2010 Program Chair, Deakin University, Australia)</i> <i>A/Prof Jiankun Hu (NSS 2010 Program Chair, RMIT University, Australia)</i>			
09:00-10:00	ICDKE 2010 Keynote Address: Paper, Pencil or PDA (Personal Digital Assistant Aka Mobile Devices)? (CCH 1 & 2) Speaker: <i>Gora Datta (CAL2CAL Corporation, USA)</i> Chair: <i>Dr Hua Wang (University of Southern Queensland, Australia)</i>			
10:00-10:30	Morning Tea (Level 2 PRE FUNCTION)			
10:30-12:30	Session 1A: HPCC 2010 (CCH 1)	Session 1B: HPCC 2010 (M11)	Session 1E: AHPCCN 2010 (M13)	Session 1G: DSMP 2010 (M16)

Session 1A: HPCC 2010 (CCH 1) – Parallel and distributed system architectures I Session Chair: TBD (TBD, TBD)

Towards Online Application Cache Behaviors Identification in CMPs
Xiaomin Jia, Jiang Jiang, Tianlei Zhao, Shubo Qi, Minxuan Zhang
Flexible Clusters for High-Performance Computing
Paolo Anedda, Massimo Gaggero, Giovanni Busonera, Omar Schiaratura, Gianluigi Zanetti
Sim-spm: A SimpleScalar-based Simulator for Multi-level SPM Memory Hierarchy Architecture
Xiaoguang Ren, Yuhua Tang, Tao Tang, Sen Ye, Huiquan Wang, Jing Zhou
MN-Mate: Resource Management of Manycores with DRAM and Nonvolatile Memories
Kyu Ho Park, Youngwoo Park, Woomin Hwang, Ki-Woong Park

Session 1B: HPCC 2010 (M11) – Parallel and distributed algorithms Session Chair: TBD (TBD, TBD)

Hybrid Distributed-/Shared-Memory Parallelization For Re-initializing Level Set Functions
Oliver Fortmeier, H. Martin Buecker
Sparse Matrix Formats Evaluation and Optimization on a GPU
Maxime Raphael Hugues, Serge Georges Petiton
Insertion Tree Phasers: Efficient and Scalable Barrier Synchronization for Fine-grained Parallelism
Stefan Marr, Stijn Verhaegen, Bruno De Fraine, Theo D'Hondt, Wolfgang De Meuter
A software self-organizing middleware for smart spaces based on fuzzy logic
Charles Gouin-Vallerand, Bessam Abdulrazak, Sylvain Giroux, Mounir Mokhtari

Session 1E: AHPCCN 2010 (M13) – Parallel and distributed software technologies Session Chair: TBD (TBD, TBD)

Mapping of H.264/AVC Encoder on a Hierarchical Chip Multicore DSP Platform
Shenggang Chen, Shuming Chen, Huitao Gu, Hu Chen, Yaming Yin, Xiaowen Chen, Shuwei Sun, Sheng Liu, Yaohua Wang
A QoS-Aware Web Service Selection Method Based on Credibility Evaluation
Lianyong Qi, Rutao Yang, Xuyun Zhang, Wanchun Dou, Jinjun Chen
A New Keywords Method to Improve Web Search
Chongchong Zhao, Zhiqiang Zhang, Xiaoqin Xie, Tingting Liang
Prediction-Based Dynamic Load Balancing Using Agent Migration for Multi-Agent System
Byung Ha Son, Seong Woo Lee, Hee Yong Youn

Session 1G: DSMP 2010 (M16) Session Chair: Prof Nong Xiao (National University of Defense Technology, China)

IndexTree: An Efficient Tamper-evidence Logging
Yanwen Bao, Yongjian Wang, Zhongzhi Luan, Xiang Pei, Depei Qian
An Efficient Coding Scheme for Tolerating Double Disk Failures

Rongdong Hu, Guangming Liu, Jingfei Jiang
 Hot data-aware FTL Based on Page-level Address Mapping
Zhiguang Chen, Nong Xiao, Fang Liu, Yimo Du
 The Analysis and Implementation of Partition Replication-based Distributed Cache System
Rui-Hua Di, Ting Wang, Yi Liang, Lin Su

Wednesday 1 September 2010 Afternoon

12:30-13:30	Lunch (EXHIBITION HALL)		
13:30-14:30	HPCC 2010 Keynote Address: HPCC with Grids and Clouds (CCH 1 & 2) Speaker: <i>Professor Geoffrey Charles Fox (Indiana University Bloomington, USA)</i> Chair: <i>Prof Wanlei Zhou (Deakin University, Australia)</i>		
14:30-15:00	Afternoon Tea (Leve 2 PRE FUNCTION)		
15:00-17:30	Session 2A: HPCC 2010 (CCH 1)	Session 2B: HPCC 2010 (M11)	Session 2E: AHPCN 2010 (M13)

Session 2A: HPCC 2010 (CCH 1) – Parallel and distributed system architectures II Session Chair: *TBD (TBD, TBD)*

A Scheduling Heuristic to Handle Local and Remote Memory in Cluster Computers
Mónica Serrano, Julio Sahuquillo, Houcine Hassan, Salvador Petit, José Duato
 Adding an Expressway to Accelerate the Neighborhood Communication
Kai Wang, Fei Chen, Zheng Cao, Xuejun An, Ninghui Sun
 Client Based Data Isolation of Blue Whale File System in Non-linear Edit Field
Liu Shi, Jingliang Zhang, Lu Xu
 Research on Rapid Reconfiguration Platform of Dynamic Forest Growth Simulation System Based on Service Component
Tian-Yang Dong, Jing Fan, Li-Rong Xiong, Ying Shen, Ying Tang
 QuickTM: A Hardware Solution to a High Performance Unbounded Transactional Memory
Sutirtha Sanyal, Sourav Roy

Session 2B: HPCC 2010 (M11) – Parallel and distributed software technologies Session Chair: *TBD (TBD, TBD)*

Aggregation of Real-Time System Monitoring Data for Analyzing Large-Scale Parallel and Distributed Computing Environments
Sven Böhm, Christian Engelmann, Stephen L. Scott
 A Generic Algorithm Template for Divide-and-conquer in Multicore Systems
Carlos H. González, Basilio B. Fragueta
 Effortless and Efficient Distributed Data-partitioning in Linear Algebra
Carlos de Blas Cartón, Arturo Gonzalez-Escribano, Diego R. Llanos
 MPIActor - A Multicore-Architecture Adaptive and Thread-based MPI Program Accelerator
Zhiqiang Liu, Kaijun Ren, Junqiang Song
 Enhancing Muesli's Data Parallel Skeletons for Multi-Core Computer Architectures
Philipp Ciechanowicz, Herbert Kuchen

Session 2E: AHPCN 2010 (M13) – Performance evaluation and measurement Session Chair: *TBD (TBD, TBD)*

Evaluating Thread Placement Based on Memory Access Patterns for Multi-core Processors
Matthias Diener, Felipe Madruga, Eduardo Rodrigues, Marco Alves, Jörg Schneider, Philippe Navaux, Hans-Ulrich Heiß
 Regional Clustering Scheme in Densely Deployed Wireless Sensor Networks for Weather Monitoring systems
Dong-min Choi, Sang-man Moh, Il-yong Chung
 Constructing Storage Capacity Migration Policies for Information Lifecycle Management System
Min-Feng Wang, Wei-Tsun Lin, Cheng-Hsien Tang, Meng-Feng Tsai
 Parallel Computational Modelling of Inelastic Neutron Scattering in Multi-Node and Multi-Core Architectures
Michael T. Garba, Horacio González-Vélez, Daniel L. Roach
 Evaluation of a Financial Option Based Pricing Model for Grid Resources Management: Simulation vs. Real Data
David Allenator, Ruppa K. Thulasiram

Thursday 2 September 2010 Morning

09:00-10:00	NSS 2010 Keynote Address: Mobility Management and Security Issues for Networks in Motion (CCH 1 & 2) Speaker: <i>Prof Mohammed Atiquzzaman (University of Oklahoma, USA)</i> Chair: <i>Dr Yang Xiang (Deakin University, Australia)</i>			
10:00-10:30	Morning Tea (Leve 2 PRE FUNCTION)			
10:30-12:30	Session 3A: HPCC 2010 (Conference Hall 1)	Session 3B: HPCC 2010 (M11)	Session 3E: AHPCN 2010 (M13)	

Session 3A: HPCC 2010 (CCH 1) – Grid, cluster and cloud computing I

Session Chair: TBD (TBD, TBD)

Enabling GPU and Many-Core Systems in Heterogeneous HPC Environments Using Memory Considerations

Francesc Guim, Ivan Rodero, Julita Corbalan, Manish Parashar

ASAAS: Application Software as a Service for High Performance Cloud Computing

Zhengxiong Hou, Xingshe Zhou, Jianhua Gu, Yunlan Wang, Tianhai Zhao

The User-level Remote Swap Library

Martin Rehr, Brian Vinter

An Effective Scheduling Method for More Reliable Execution on Desktop Grids

Ju-Ho Hyun

Session 3B: HPCC 2010 (M11) – Performance evaluation and measurement I

Session Chair: TBD (TBD, TBD)

Extraction of Parallel Application Signatures for Performance Prediction

Alvaro Wong, Dolores Rexachs, Emilio Luque

A Novel Memory Subsystem Evaluation Framework for Chip Multiprocessors

Fucen Zeng, Lin Qiao, Mingliang Liu, Zhizhong Tang

K-model: A New Computational Model for Stream Processors

Gabriele Capannini, Fabrizio Silvestri, Ranieri Baraglia

Developing a Parameterized Performance Proxy for Sequential Scientific Kernels

Hongzhang Shan, Erich Strohmaier

Session 3E: AHPCN 2010 (M13) – Distributed systems and applications

Session Chair: TBD (TBD, TBD)

Design and Performance of a Webmail Server on Bare PC

Patrick Appiah-Kubi, Ramesh Karne, Alexander Wijesinha

Extending Speculation-Based Protocols for Processing Read-only Transactions in Distributed Database Systems

Mohit Goyal, Thirumalaisamy Ragunathan, Polepalli Krishna Reddy

Large Graph Processing Based on Remote Memory System

Kyungho Jeon, Hyuck Han, Shin-gyu Kim, Hyeonsang Eom, Heon Y. Yeom, Yongwoo Lee

A Simple and Efficient Parallel Approach to Large-Scale Railway Freight Data Analysis

Yi Xie, Xiaolin Li, Fengzhi Liu

Thursday 2 September 2010 Afternoon

12:30-13:30	Lunch (EXHIBITION HALL)			
13:30-14:30	HPCC 2010 Keynote Address: Big Science on DEISA and PRACE - A European HPC Ecosystem (CCH 1 & 2) Speaker: <i>Prof Wolfgang Gentzsch (DEISA Distributed European Infrastructure for Supercomputing Applications, Germany)</i> Chair: <i>Dr Yang Xiang (Deakin University, Australia)</i>			
14:30-15:00	Afternoon Tea (Leve 2 PRE FUNCTION)			
15:00-17:30	Session 4A: HPCC 2010 (CCH 1)	Session 4B: HPCC 2010 (M11)	Session 4E: AHPCN 2010 (M13)	Session 4G: HPCC 2010 (M16)

Session 4A: HPCC 2010 (CCH 1) – Grid, cluster and cloud computing II

Session Chair: TBD (TBD, TBD)

Managing Peak Loads by Leasing Cloud Infrastructure Services from a Spot Market

Michael Mattess, Christian Vecchiola, Rajkumar Buyya
 Firewall Traversal in the Grid Architecture
Jefferson Tan, David Abramson, Colin Enticott
 Resource Load Based Stochastic DAGs Scheduling Mechanism for Grid Environment
Fang Dong, Junzhou Luo, Aibo Song, Jiahui Jin
 An Adaptive Remote Paging System on Computational Grids
Tyng-Yeu Liang, Po-Jen Lo, Min-Jyun Chen, Ti-Hsin Wang, Jyh-Biau Chang
 Virtual Application Appliances in Practice: Basic Mechanisms and Overheads
Erkan Unal, Paul Lu

Session 4B: HPCC 2010 (M11) – Performance evaluation and measurement II

Session Chair: TBD (TBD, TBD)

Evaluation of the Task Programming Model in the Parallelization of Wavefront Problems
Antonio J. Dios, Rafael Asenjo, Angeles Navarro, Francisco Corbera, Emilio L. Zapata
 Performance Analysis of Scientific and Engineering Applications Using MPIinside and TAU
Subhash Saini, Piyush Mehrotra, Kenichi Taylor, Sameer Shende, Rupak Biswas
 Analyzing & Modeling the Performance in Xen-based Virtual Cluster
Kejiang Ye, Xiaohong Jiang, Siding Chen, Dawei Huang, Bei Wang

Session 4G: HPCC 2010 (M16) – Security, privacy, reliability and fault-tolerance

Session Chair: TBD (TBD, TBD)

A Flexible and Cost-effective File-wise Reliability Scheme for Storage Systems
Tzer-Ta Tseng, Yarsun Hsu
 Fault-Tolerant Scheduling with Dynamic Number of Replicas in Heterogeneous Systems
Laiping Zhao, Yizhi Ren, Yang Xiang, Kouichi Sakurai
 Improving Energy Efficiency and Security for Disk Systems
Shu Yin, Mohammed I. Alghamdi, Xiaojun Ruan, Mais Nijim, Ashwin Tamilarasan, Ziliang Zong, Xiao Qin, Yiming Yang
 A CellBE-based HPC application for the analysis of vulnerabilities in cryptographic hash functions
Alessandro Cilardo, Luigi Esposito, Antonio Veniero, Antonino Mazzeo, Vicenç Beltran, Eduard Ayguadé
 The Design and Implementation of Standards-based Grid Single Sign-on Using Federated Identity
Weizhong Qiang, Aleksandr Konstantinov

Session 4E: AHPCN 2010 (M13) – High-performance scientific and engineering computing

Session Chair: TBD (TBD, TBD)

A Generic Execution Management Framework for Scientific Applications
Tanvire Elahi, Cameron Kiddle, Rob Simmonds
 Numerical Simulation of the Thermal Convection in the Earth's Outer Core
Chao Yang, Yunquan Zhang, Ligang Li
 OpenCL: Make Ubiquitous Supercomputing Possible
Slo-Li Chu, Chih-Chieh Hsiao
 Modeling Ion Channel Kinetics with HPC
Allison Gehrke, Katherine Rennie, Timothy Benke, Daniel A. Connors, Ilkyeun Ra

Thursday 2 September 2010 Evening

18:30-22:30 **Conference Banquet (Melbourne Aquarium)**

Friday 3 September 2010 Morning

09:00-10:00	NSS 2010 Keynote Address: Security Risks of Social Networking Systems (CCH 1 & 2) Speaker: <i>Prof Matthew Warren (Deakin University, Australia)</i> Chair: <i>A/Prof Jiankun Hu (RMIT University, Australia)</i>			
10:00-10:30	Morning Tea (Leve 2 PRE FUNCTION)			
10:30-12:30	Session 5A: HPCC 2010 (M16)	Session 5B: HPCC 2010 (M11)	Session 5E: AHPCN 2010 (M13)	Session 5G: IDCS 2010 Keynote Address by <i>Prof Rajkumar Buyya</i> (CCH 1)

Session 5A: HPCC 2010 (M16) – High-performance scientific and engineering computing

Session Chair: TBD (TBD, TBD)

Option Pricing on the GPU

Steven Solomon, Ruppa K. Thulasiram, Parimala Thulasiraman

Exploiting Parallelism in Iterative Irregular Maxflow Computations on GPU Accelerators

Steven Solomon, Parimala Thulasiraman, Ruppa K. Thulasiram

Iterative SLE Solvers over a CPU-GPU Platform

Alécio Pedro Delazari Binotto, Christian Daniel, Daniel Weber, Arjan Kuijper, André Stork, Carlos Eduardo Pereira, Dieter Fellner

Multiple Biological Sequence Alignment with a Parallel Island Injection Genetic Algorithm

Lidia Araujo Miranda, Marcos Fagundes Caetano, Alba Cristina Magalhaes Alves de Melo, Jan Mendonca Correa, Jacir Luiz Bordim

Session 5B: HPCC 2010 (M11) – Network protocols, routing, algorithms I

Session Chair: *TBD (TBD, TBD)*

Constructing a CDS-Based Network Backbone for Energy Efficiency in Industrial Wireless Sensor Networks

Sajid Hussain, Mubashsharul Shafique, Laurence Yang

Distinguishing the Cause of TCP Retransmission Timeouts in Multi-hop Wireless Networks

Mi-Young Park, Sang-Hwa Chung

Providing QoS Guarantees in Large-scale Operator Networks

Stamatia Rizou, Frank Dürr, Kurt Rothermel

Monitoring Underwater Pipelines Using Sensor Networks

Nader Mohamed, Imad Jawhar, Jameela Al-Jaroodi, Liren Zhang

Session 5E: AHPCN 2010 (M13) – Network protocols, routing, algorithms

Session Chair: *TBD (TBD, TBD)*

A Novel Method for Estimating Flow Length Distributions from Double-Sampled Flow Statistics

Weijiang Liu, Wenyu Qu, Zhaobin Liu, Keqiu Li

A Trade-off Between Reliability and Energy Efficiency for Inter-Cluster Communication in Wireless Sensor Networks

Anwar Sadat, Gour Karmakar

Failure Influence: Robustness Measure for Scalable Switch Fabric

Guanghui Yang, Jianping Wu, Youjian Zhao, Shutao Sun

Optimizing Sparse Matrix Vector Multiplication Using Diagonal Storage Matrix Format

Liang Yuan, Yunquan Zhang, XiangZheng Sun, Ting Wang

The Optimal Replica Distribution to Minimize the Search Size in the Unstructured Overlay

Guofu Feng, WenZhong Li, Sanglu Lu, Daoxu Chen

Session 5G: IDCS 2010 (CCH 1) – Grid, cloud, reliability and security

Session Chair: *A/Prof Jemal Abawajy (Deakin University, Australia)*

10:30-11:10	IDCS 2010 Keynote Address: TBD (CCH 1) Speaker: <i>Prof Rajkumar Buyya (The University of Melbourne, Australia)</i> Chair: <i>A/Prof Jemal Abawajy (Deakin University, Australia)</i>
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Dynamic Load Distribution in Grid Using Mobile Threads

Masaya Miyashita, Md. Enamul Haque, Noriko Matsumoto, Norihiko Yoshida

Fault-Tolerant Middleware for Grid Computing

Srinivasa K.G., Siddesh G.M., Sijo Cherian

Mutual Protection in a Cloud Computing Environment

Aiiad Albeshri, William Caelli

Continuous Biometric Authentication: Can It Be More Practical?

Eesa Al Solami, Colin Boyd, Andrew Clark, Asadul K. Islam

Friday 3 September 2010 Afternoon

12:30-13:30	Lunch (EXHIBITION HALL)
13:30-14:30	Panel Session: Services, Security, and Privacy in Cloud Computing (Conference Hall 1 & 2) Chair: <i>Prof Rajkumar Buyya (The University of Melbourne, Australia)</i> Panellists: <i>Professor Geoffrey Charles Fox (Indiana University Bloomington, USA)</i> <i>Prof Wolfgang Gentzsch (DEISA Distributed European Infrastructure for Supercomputing Applications, Germany)</i> <i>Professor Matthew Warren (Deakin University, Australia)</i> <i>Professor Wanlei Zhou (Deakin University, Australia)</i>

14:30-15:00	Afternoon Tea (Leve 2 PRE FUNCTION)			
15:00-17:30	Session 6A: HPCC 2010 (CCH 1)	Session 6B: HPCC 2010 (M11)	Session 6E: AHPCN 2010 (M13)	Session 6G: IDCS 2010 (M16)

Session 6A: HPCC 2010 (CCH 1) – Mobile computing and wireless communications

Session Chair: TBD (TBD, TBD)

Tree-based Adaptive Broadcasting of Bandwidth Allocation for Vehicle Ad Hoc Networks

Gwo-Jiun Horng, Chi-Hsuan Wang, Sheng-Tzong Cheng, Chih-Wei Hsu, Sheng-Fu Su

Efficient Utilization of WLAN Networks in the Next-Generation Heterogeneous Environments

Ammar Haider, Iqbal Gondal, Joarder Kamruzzaman, Bin Qiu

BF-SD-ZRP: A Smart Integrated Scheme for Service and Route Discovery in Mobile Ad Hoc Network

Fatma Outay, Florent Kaisser, Veronique Veque, Ridha Bouallegue

Call Admission Control Scheme for the IEEE 802.16e at Vehicular Speeds

Iftexhar Ahmad, Daryoush Habibi

Markov Modelling of the IEEE 802.11 DCF for Real-time Applications with Periodic Traffic

Guosong Tian, Yu-Chu Tian

Session 6B: HPCC 2010 (M11) – Network protocols, routing, algorithms II

Session Chair: TBD (TBD, TBD)

A Feasible Localization Algorithm for Wireless Sensor Networks Using Directional Antenna

Baoli Zhang, Fengqi Yu

X-Network: An Area-Efficient and High-Performance On-Chip Wormhole-Switching Network

Xiaofang Wang, Leeladhar Bandi

On Problem for Aggregate Node Selection for Unstructured Overlay Networks

Imran Rao

Coexistence Mechanism for Industrial Automation Network

Muhammad Farrukh Yaqub, Iqbal Gondal, Joarder Kamruzzaman

A Distributed Slot Assignment Algorithm with Minimum Jitter and Delay Guarantee for Real Time

Applications for Wireless Sensor Networks

Li Qiang Tao, Feng Qi Yu

Session 6E: AHPCN 2010 (M13) – Mobile computing and wireless communications

Session Chair: TBD (TBD, TBD)

An Adaptive Routing Protocol Associated with Urban Traffic Control Mechanism for Vehicular Sensor Networks

Xin Su, Sangman Moh, Ilyong Chung, Dongmin Choi

Diversified Adaptive Frequency Rolling to Mitigate Self and Static Interferences

Muhammad Farrukh Yaqub, Iqbal Gondal, Joarder Kamruzzaman

Energy Cost of Control Packets in Hybrid MAC Protocols

Qian Dong, Walteneus Dargie, Alexander Schill

Provisioning Delay Sensitive Services in Cognitive Radio Networks by Opportunistically Sharing

Spectrum from CSMA/CA Networks

Rashidul Hasan, Manzur Murshed

Performance Analysis of Vertical Handoff Algorithms with QoS Parameter Differentiation

Shusmita Anwar Sharna, Manzur M. Murshed

Session 6G: IDCS 2010 (M16) – Distributed computing systems

Session Chair: Christian Vecchiola (The University of Melbourne, Australia)

Scheduling and Queue Management for Multi-class Traffic in Access Router of Mobility Protocol

Md. Shohrab Hossain, Mohammed Atiquzzaman, William Ivancic

Implementation and Evaluation of a NAT-Gateway for the General Internet Signaling Transport Protocol

Roland Bless, Martin Röhrich

A Throughput Optimizing Routing Protocol for Wireless Mesh Networks

Jaydip Sen

An Enhanced Tree-based Key Management Scheme for Secure Communication in Wireless Sensor Network

Khadija Rasul, Nujhat Nuerie, Al-Sakib Khan Pathan

A Quick-response Real-time Stepping Stone Detection Scheme

Ping Li, Wanlei Zhou, Yanli Yu

Cooperative Routing Approach for ISP-provided Content Delivery Service Using Hierarchical DHT

Kyounghee Jung, Dohyun Kim, Younghee Lee

Performance Modeling of Bandwidth Aggregation for TCP Connections

Ehsan Elahi , Najmul Hassan , Sohail Asghar, Amir Qayyum

A Lightweight Intrusion Alert Fusion System

Sheng Wen, Yang Xiang, Wanlei Zhou