

The 8th International Conference on Parallel and Distributed Computing, Applications and Technologies PDCAT 2007

December 3-6 2007, Adelaide, Australia

PROGRAM GUIDE

Keynotes, Tutorials and Conference



Local Information



0. PDCAT07, Napier Building, University of Adelaide
1. Food court, under David Jones
2. Rundle Street is full of cafes and restaurants (more than 50 eating outlets)
3. Majestic Roof Garden
4. Hyatt Regency
5. Sebel Playford
6. Botanical Gardens

Keynote 1



Prof. Teofilo F. Gonzalez

Department of Computer Science
University of California, Santa Barbara, USA
teo@cs.ucsb.edu

Title: Message Dissemination Under the Multicasting Communication Mode

Abstract: We discuss algorithms, complexity issues, and applications for message dissemination problems under the multicasting communication mode. These problems arise while executing in a parallel or distributed computing environment iterative methods for solving scientific computation applications, dynamic programming procedures, sparse matrix multiplication, etc. Our message communication problems also arise when disseminating information over ad-hoc wireless networks.

Given a communication environment and a set of messages that need to be exchanged, the message dissemination problem is to find a schedule to transmit all the messages in the least total number of communication rounds. Generating an optimal communication schedule (with the least total number of communication rounds) for message dissemination problems over a wide range of communication environments is an NP-hard problem. To cope with intractability efficient message dissemination approximation algorithms have been developed for different types of communication environments and message communication patterns (the communications that must take place). The communication environment consists of the communication network (the direct communications allowed for each processor), primitive operations (the basic communication operations allowed by the system), and the communication model (possible operations during each communication round or step).

Our goal is to present scattered research results developed during the last decade to establish that the multicasting (one-to-many) communication environment is a powerful communication primitive that allows for solutions that are considerable better than those achievable under the telephone (or one-to-one) communication environment. The multicasting communication environment has been available for quite some time in parallel computing systems. We also establish that, within the multicasting communication mode, forwarding plays an important role by allowing solutions that are considerable better than when restricting to direct communications, even when the communication load is balanced and the network is complete (all possible bidirectional links are present). We show that off-line communication scheduling allows for considerably better solutions over on-line scheduling. However, on-line scheduling provides added flexibility and it is applicable to a larger set of scenarios.

About the speaker: Professor Gonzalez was born in Monterrey, Mexico. He was one of the first handful of students to receive a computer science undergraduate degree in Mexico (ITESM 1972). He received his Ph.D. degree from the University of Minnesota (1975). He has been member of the faculty at OU, Penn State, and UT Dallas, and has spent sabbatical leave at the ITESM (Monterrey, Mexico) and U. Utrecht (the Netherlands). Since 1984 he has been professor of computer science at UCSB.

Professor Gonzalez's main research contributions include the development of algorithms for scheduling, computational geometry, computer-aided design, and message dissemination (under the multicasting communication mode) problems. Dr. Gonzalez has also developed exact and approximation algorithms for graph problems, code minimization, map compression, generalized dictionaries, statistical tests, page fault minimization, etc.

His research contributions for the open shop scheduling problem are seminal as they started a research area that is now as important as the more traditional ones. He was one of the first researchers that developed the first set of computationally interesting algorithms for preemptive scheduling problems. He developed a best possible clustering algorithm that has found applications in many research areas. He was one of a small

group researchers that made the first set of contributions to the area of approximation algorithms. One of his main research contributions include the first set of in-approximability results. Professor Gonzalez edited the Handbook on Approximation Algorithms and Metaheuristics (May 2007). This handbook is the first one in the area, and includes contributions from top researchers from all over the world.

His work has been published in the top journals in computer science and operations research. He also has numerous publications in research books and conference proceedings. Professor Gonzalez has served as program committee chair for several conferences, and editor (and guest editor) of several publications. He has received three teaching awards at UCSB and has served as a program evaluator for ABET.

Dr. Gonzalez's current research interests are the design of efficient algorithms for multmessage multicasting in networks, scheduling, message routing, graph, and computational geometry problems.

Keynote 2



Prof. Paul Watson

School of Computing Science
Newcastle University, UK
Director of the North East Regional e-Science Centre
paul.watson@newcastle.ac.uk

Title: e-Science in the Cloud with CARMEN

Abstract: Understanding how the brain works is a major scientific challenge which will benefit medicine, biology and computer science. It requires knowledge of how information is encoded, accessed, analysed, archived and decoded by networks of neurons. Globally, over 100,000 neuroscientists are working on this problem. However, the data that forms the basis for their work is rarely shared even though it is difficult and expensive to produce. One of the main reasons for this is that vast amounts of data are produced in a variety of formats; this is then locally described and curated. One consequence is a shortage of analysis techniques that can be applied across neuronal systems. Further, there is only a limited amount of interaction between research centres with complementary expertise.

The CARMEN project (<http://www.carmen.org.uk/>) is addressing these challenges. It enables data sharing, integration, and analysis supported by metadata. An expandable range of services are provided to extract value from raw and transformed data. The project's approach is to design and build a generic e-science platform "in the cloud". This provides functionality to neuroscientists, who access it over the web. Scientists upload the data they generate into the system (called a CAIRN) and describe it with metadata. Internally, the CAIRN is built as a set of Web Services. These include a workflow enactment service which allows scientists to analyze data by running workflows that utilise the analysis services also held in the CAIRN. Users can browse the catalogue of existing workflows to select one that is appropriate for the task they are trying to accomplish. More expert users can build their own workflows from the available services. Even more sophisticated users can create their own services to use in workflows. A novel feature of the architecture is that the services are stored in a repository in the CAIRN and scheduled on a grid as required by the execution of workflows. This promotes the sharing of analysis services as well as data, and allows services to execute close to the data on which they operate. This is essential to avoid having to ship vast quantities (TBs) of data out of the CAIRN to the user's machine for analysis. Storing both the data and the services in the CAIRN also enables the reproducibility of analyses.

This talk describes the design of the CAIRN and shows how it is used to support neuroinformatics.

Biographical Sketch: Paul Watson is Professor of Computer Science at Newcastle University, UK, and Director of the North East Regional e-Science Centre. He graduated in 1983 with a BSc in Computer Engineering from Manchester University, followed by a PhD in 1986. In the 80s, as a Lecturer at Manchester University, he was a designer of the Alvey Flagship and Esprit EDS parallel systems. From 1990-5 he worked for ICL as a system designer of the Goldrush MegaServer parallel database server, which was released as a product in 1994.

In August 1995 he moved to Newcastle University, where he has been an investigator on research projects worth over £20M. His interests are in scalable information management, including parallel database servers, data-intensive e-science and grid computing.

In total, he has over forty refereed publications, and three patents. Professor Watson is a Chartered Engineer, a Fellow of the British Computer Society, and a member of the UK Computing Research Committee.

Keynote 3



Prof. Albert Y. Zomaya

School of Information Technologies
The University of Sydney, Sydney, NSW 2006, Australia
zomaya@it.usyd.edu.au

Title: Exploring Biocomplexity - New Challenges for High Performance Computing

Abstract: The talk will address some of the key algorithmic and computational challenges associated with the modelling of certain classes of biological networks (e.g. biochemical, signalling). This will involve several research threads that cover a range of theoretical, software and hardware implementation issues. The theoretical modelling developments involve a variety of issues related to the numerical, probabilistic, logical, and symbolic aspects of computation and implementation. A lack of effective tools for modelling and analysing networks has prevented their use in many possible applications. The simulation tools will allow us to develop applications in which millions of randomly generated networks can be simulated and analyzed with great computational efficiency. This efficiency can be obtained by parallelizing the modelling process and address problems that arise from the increasing size of networks and the parallel computing systems that they will require. The problems will include, for example, the unpredictable workload and strong data dependencies characteristic of the modelling of networks; they will require us to investigate a number of related design issues, such as domain decomposition, data access and management, workload balancing, and architecture selection.

Biographical Sketch: Albert Y. ZOMAYA is currently the Head of School and the CISCO Systems Chair Professor of Internetworking 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 300 publications in technical journals and conferences, and the editor of eight books and eight conference volumes. He is currently an associate editor for 15 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 has been actively involved in the organization of national and international conferences. He received the 1997 Edgeworth David Medal from the Royal Society of New South Wales for outstanding contributions to Australian Science. He is also the recipient of the Meritorious Service Award (in 2000) and the Golden Core Recognition (in 2006), both from the IEEE Computer Society. Professor Zomaya 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.

Conference Program Overview

**4pm-6pm, Sunday 2nd December 2007: Registration opens
(Napier Ground Floor)**

Monday 3rd December			
8:30-9:30	Registration Opens (Napier Ground Floor)		
9:30-10:50	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px; vertical-align: top;"> Tutorial 1: P2P Architecture and Distributed Services (Room: Napier 208) Part 1 </td> <td style="width: 50%; padding: 5px; vertical-align: top;"> Tutorial 2: Open MPI: Internal Architecture and Performance Maximization (Room: Napier 209) Part 1 </td> </tr> </table>	Tutorial 1: P2P Architecture and Distributed Services (Room: Napier 208) Part 1	Tutorial 2: Open MPI: Internal Architecture and Performance Maximization (Room: Napier 209) Part 1
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10:50-11:10	Coffee Break (Napier Ground Floor)		
11:10-12:30	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px; vertical-align: top;"> Tutorial 1: P2P Architecture and Distributed Services (Room: Napier 208) Part 2 </td> <td style="width: 50%; padding: 5px; vertical-align: top;"> Tutorial 2: Open MPI: Internal Architecture and Performance Maximization (Room: Napier 209) Part 2 </td> </tr> </table>	Tutorial 1: P2P Architecture and Distributed Services (Room: Napier 208) Part 2	Tutorial 2: Open MPI: Internal Architecture and Performance Maximization (Room: Napier 209) Part 2
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12:30-14:30	Lunch Break		
14:30-15:50	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px; vertical-align: top;"> Tutorial 3: Design and Analysis of Peer-to-Peer Systems (Room: Napier 208) Part 1 </td> <td style="width: 50%; padding: 5px; vertical-align: top;"> Tutorial 4: Modern Problems in Network Measurement (Room: Napier 209) Part 1 </td> </tr> </table>	Tutorial 3: Design and Analysis of Peer-to-Peer Systems (Room: Napier 208) Part 1	Tutorial 4: Modern Problems in Network Measurement (Room: Napier 209) Part 1
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15:50-16:10	Coffee Break (Napier Ground Floor)		
16:10-17:30	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px; vertical-align: top;"> Tutorial 3: Design and Analysis of Peer-to-Peer Systems (Room: Napier 208) Part 2 </td> <td style="width: 50%; padding: 5px; vertical-align: top;"> Tutorial 4: Modern Problems in Network Measurement (Room: Napier 209) Part 2 </td> </tr> </table>	Tutorial 3: Design and Analysis of Peer-to-Peer Systems (Room: Napier 208) Part 2	Tutorial 4: Modern Problems in Network Measurement (Room: Napier 209) Part 2
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18:00-19:00	Reception (State Library) 17:45: meet at Napier Ground Floor		

Tuesday 4th December

8:30-9:00 Registration Opens (Napier Ground Floor)

9:00-9:20 **Opening and Welcome** (Room: Napier G04)
Prof. James McWha, Vice-Chancellor and President of the University of Adelaide
Prof. Richard Brent, ARC Federation Fellow, Australian National University

9:20-10:20 **Keynote 1: Message Dissemination under the Multicasting Communication Mode**
(Room: Napier G04)
Prof. Teofilo F. Gonzalez, The Uni. of California, Santa Barbara, USA
Introduction: Si-Qing Zheng

10:20-10:40 **Coffee Break (Napier Ground Floor)**

10:40-12:40 **Session 1A: Task Mapping and Job Scheduling** (Room: Napier 208)
Session Chair: Yamin Li

Session 1B: Internet Computing (Room: Napier 209)
Session Chair: John Zic

12:40-14:00 **Lunch Break**

14:00-15:30 **Session 2A: Task Mapping and Job Scheduling** (Room: Napier 208)
Session Chair: Susumu Horiguchi

Session 2B: High-Performance Computing (Room: Napier 209)
Session Chair: George Bosilca

Session 2C: Internet Computing (Room: Napier 210)
Session Chair: Michael Sheng

15:30-15:50 **Coffee Break (Napier Ground Floor)**

Poster Promotion Session
(Room: Napier G04)
Chair: Brad Alexander

15:50-16:15

16:15-17:45 **Session 3A: High-Performance Computing** (Room: G03)
Session Chair: Zhiwei Xu

Session 3B: Poster Session 1
Session 3C: Poster Session 2 (Room: Napier G04)
Session Chair: Brad Alexander

Wednesday 5th December

8:30-9:00 Registration Opens (Napier Ground Floor)

9:00-10:00 **Keynote 2:** e-Science in the Cloud with CARMEN (Room: Napier G04)
Prof. Paul Watson, The University of Newcastle upon Tyne, UK
 Introduction: David Munro

10:00-10:30 **Coffee Break (Napier Ground Floor)**

10:30-12:30 **Session 4A:** Parallel/Distributed Architectures and Algorithms (Room: Napier 208)
Session Chair: Brad Alexander

Session 4B: Distributed Databases (Room: Napier 209)
Session Chair: Xueqi Cheng

12:30-14:00 **Lunch Break**

14:00-15:30 **Session 5A:** Parallel/Distributed Architectures and Algorithms (Room: Napier 208)
Session Chair: Paul Coddington

Session 5B: Network Routing and Communication Algorithms (Room: Napier 209)
Session Chair: Matthew Roughan

Session 5C: Grid Computing (Room: Napier 210)
Session Chair: Michael Hannaford

15:30-15:50 **Coffee Break (Napier Ground Floor)**

15:50-17:20 **Session 6A:** Parallel/Distributed Architectures and Algorithms (Room: Napier 208)
Session Chair: ShieTung Peng

Session 6B: Network Routing and Communication Algorithms (Room: Napier 209)
Session Chair: Aaron Harwood

Session 6C: Networks (Other) (Room: Napier 210)
Session Chair: Cruz Izu

19:00-22:00 **Conference Dinner (Ayers House)**
18:45: Meet at Napier Ground Floor

Thursday 6th December

8:30-9:00 Registration Opens (Napier Ground Floor)

9:00-10:00 **Keynote 3:** Exploring Biocomplexity: New Challenges for High Performance Computing
(Room: Napier G04)
Prof. Albert Zomaya, The University of Sydney, Australia
Introduction: Hong Shen

10:00-10:30 **Coffee Break (Napier Ground Floor)**

10:30-12:30 **Session 7A:** Sensor Networks
(Room: Napier 208)
Session Chair: Paul Werstein

Session 7B: Security and Privacy
(Room: Napier 209)
Session Chair: Koji Nakano

12:30-14:00 **Lunch Break**

14:00-16:00 **Session 8A:** Formal Methods and Programming Languages (Room: Napier 208) *Session Chair: David Hemer*

Session 8B: P2P and Ad-Hoc Networks (Room: Napier 209)
Session Chair: Stuart Norcross

16:00 **End of Conference Program**

PDCAT 2007 Conference Program

Monday December 3, 2007

8:30-9:30 Registration opens (Napier Ground Floor)

9:30-12:30 **Parallel Tutorial Session**

Tutorial 1: P2P Architectures and Distributed Services (Room: Napier 208)
Stuart J. Norcross, University of St Andrews, Scotland

Tutorial 2: Open MPI: Internal Architecture and Performance Maximization
(Room: Napier 209)
George Bosilca, University of Tennessee, USA

9:30-10:50 Tutorial (First Half)

10:50-11:10 Coffee Break (Napier Ground Floor)

11:10-12:30 Tutorial (Second Half)

12:30-14:30 Lunch (on your own)

14:30-17:30 **Parallel Tutorial Session**

Tutorial 3: Design and Analysis of Peer-to-Peer Systems (Room: Napier 208)
Aaron Harwood, The University of Melbourne, Australia

Tutorial 4: Modern Problems in Network Measurement (Room: Napier 209)
Matthew Roughan, The University of Adelaide, Australia

14:30-15:50 Tutorial (First Half)

15:50-16:10 Coffee Break (Napier Ground Floor)

16:10-17:30 Tutorial (Second Half)

18:00- **Reception (State Library)**
Meet at Napier Ground Floor at 17:45

Tuesday, December 4, 2007

- 8:30-9:00 Registration opens (Napier Ground Floor)
- 9:00-9:20 Opening and Welcome (Room: Napier G04)
Prof. James McWha, Vice-Chancellor and President of the University of Adelaide
- 9:20-10:20 Keynote 1: Message Dissemination under the Multicasting Communication Mode (Room: Napier G04)
Prof. Teofilo F. Gonzalez, The University of California, Santa Barbara, USA
Introduction: Si-Qing Zheng
- 10:20-10:40 Coffee Break (Napier Ground Floor)

10:40-12:40 **Parallel Session 1**

Session 1A: Task Mapping and Job Scheduling (Room: Napier 208)

Chair: Yamin Li

Prediction based Models for Evaluating Backfilling Scheduling Policies
Francesc Guim Bernat, Julita Corbalan Gonzalez, Jesus Labarta Mancho

Multiprocessor Scheduling for Distance-Constrained Task Systems
Da-Ren Chen, Yu-Chun Chu, Chiun-Chieh Hsu

Task Allocation in Distributed Embedded Systems by Genetic Programming
Allan Tengg, Andreas Klausner, Bernhard Rinner

Distant-Based Resource Placement in Product Networks
Navid Imani, Hamid Sarbazi-Azad, Albert Y. Zomaya

Session 1B: Internet Computing (Room: Napier 209)

Chair: John Zic

Optimizing IP Flow Classification Using Feature Selection
Dai Lei, Chen You, Yun Xiaochun

Monitoring Employees' Emails without Violating Their Privacy Right
Giannakis Antoniou, Udaya Paramballi, Lynn Batten

Email Categorization Using Multi-Stage Classification Technique
Md Rafiqul Islam and Wanlei Zhou

A Trap-door Method for Subscription-based Mobile Content
Toshihiko Yamakami

- 12:40-14:00 Lunch (on your own)

14:00-15:30 **Parallel Session 2**

Session 2A: Task Mapping and Job Scheduling (Room: Napier 208)

Chair: Susumu Horiguchi

Improved Genetic Algorithms and List Scheduling Techniques for Independent Task Scheduling in Distributed Systems

Thanasis Loukopoulos, Petros Lampsas, Panos Sigalas

A Remote Memory Swapping System for Cluster Computers

Paul Werstein, Xiangfei Jia, and Zhiyi Huang

Collaborative Environment with Visualizing Medical Volume Data by Virtual Reality

Masahiro Watanabe, Motoi Okuda, Yukihiro Karube, Ryuichi Matsukura, Teruo Matsuzawa

Session 2B: High-Performance Computing (Room: Napier 209)

Chair: George Bosilca

Performance Evaluation of a Novel CMP Cache Structure for Hybrid Workloads

Xuemei Zhao, Karl Sammut, Fangpo He

Realistic Evaluation of Interconnection Network Performance at High Loads

F. Javier Ridruejo, Javier Navaridas, Jose Miguel-Alonso and Cruz Izu

Detecting Atomicity Errors in Message Passing Programs

H. F. Li, Eslam Al Maghayreh and D. Goswami

Session 2C: Internet Computing (Room: Napier 210)

Chair: Michael Sheng

An Efficient Method for p-Server Coordinated En-Route Web Caching

Shihong Xu and Hong Shen

Service-centric Object Fragmentation for Efficient Retrieval and Management of Huge XML Documents

Chang-Hoo Jeong et al

On Checking the Compatibility of Web Services' Policies

Zakaria Maamar, Quan Z. Sheng, Hamdi Yahyaoui, Djamel Benslimane, and Fenglin Liu

15:30-15:50 Coffee Break (Napier Ground Floor)

15:50-16:15 **Poster Promotion Session** (Room: Napier G04)

Chair: Brad Alexander

16:15-17:45 **Parallel Session 3**

Session 3A: High-Performance Computing (Room: Napier G03)

Chair: Zhiwei Xu

Analysis of Algorithm Selection for Optimizing Collective Communication with MPICH for Ethernet and Myrinet Networks

Nor Asilah Wati Abdul Hamid, Paul David Coddington

Permutation Capability of Optical Cantor Network

REN Kaixin, GU Naijie

CBX-1 Switch: An Effective Load Balanced Switch
Xiaoliang Wang, Xiaohong Jiang, Susumu Horiguchi

Session 3B: Poster Session (Room: Napier G04)
Chair: Brad Alexander

An Efficient Multi-sender Identity Based Threshold Signcryption with Public Verifiability
Chen Wen, Lei Feiyu

Checking Integrity Constraints with Various Types of Integrity Tests for Distributed Databases
Hamidah Ibrahim, Ali Amer Alwan, Nur Izura Udzir

An Object Driven Partitioning Approach for Distributed Virtual Environments
Christos Bouras, Eri Giannaka, Thrasyvoulos Tsiatsos

A Service Provision Model Based on Context Awareness for Ubiquitous Computing
Faqun Jiang, Jintao Li, Zhenmin Zhu

High Throughput Multi-port MT19937 Uniform Random Number Generator
Vinay Bajee Sriram, David Kearney

Incorporating Security Requirements into Communication Protocols in Multi-Agent Software Systems
Yuxiu Luo, Giannakis Antoniou, Leon Sterling

A System for Robust Peer-to-Peer Communication with Dynamic Protocol Selection
Mark Wallis, Frans Henskens, Michael Hannaford

Automatic Generation Algorithm of FAST Protocol Templates for Efficient Transmission of Financial Data
Gun-Woo Lee, Youn-Jung Park, Gyun Woo

Session 3C: Poster Session (Room: Napier G04)
Chair: Brad Alexander

MHGrid: Towards an Ideal Optimization Environment for Global Optimization Problems using Grid Computing
Mohamed Wahib, Asim Munawar, Masaharu Munetomo, Kiyoshi Akama

Exploratory Day-scale Behavior Assumption-Based User Clustering with the Mobile Clickstream
Toshihiko Yamakami

SCMD-CLUSTER: Design, Implementation, and Primary Evaluation
Kiyoshi Hayakawa

A Simple Efficient Electronic Auction Scheme
Chen Wen, Lei Feiyu

A Service Discovery Framework for Ubiquitous Computing
Xiaoguang Gu, Hongzhou Shi, Jian Ye, Zhenmin Zhu

DCGG: Digital City Group Grid
Dingju Zhu, Jianping Fan, Jie Sun

Source Code Similarity Detection Using Adaptive Local Alignment of Keywords
Jeong-Hoon Ji, Soo-Hyun Park, Gyun Woo, Hwan-Gue Cho

Isolation and Web Services Transactions
David Paul, Frans Henskens, Michael Hannaford

Wednesday, December 5, 2007

8:30-9:00 Registration (Napier Ground Floor)

9:00-10:00 Keynote 2: e-Science in the Cloud with CARMEN (Room: Napier G04)
Prof. Paul Watson, The University of Newcastle upon Tyne, UK
Introduction: David Munro

10:00-10:30 Coffee Break (Napier Ground Floor)

10:30-12:30 **Parallel Session 4**

Session 4A: Parallel/Distributed Architectures and Algorithms

(Room: Napier 208)

Chair: Brad Alexander

New Code Generation Algorithm for QueueCore - An Embedded Processor with High ILP

Arquimedes Canedo, Ben A. Abderazek, Masahiro Sowa

Semantics of an Exception Mechanism for Bulk Synchronous Parallel ML

Louis Gesbert, Frédéric Loulergue

Transactional Memory Execution for Parallel Multithread Programming without Lock

Xiaoqi Yang, Qilong Zheng, Guoliang Chen, Shujuan Liu, Jun Luan

A FPGA implementation of variable kernel convolution

Bajee Sriram

Session 4B: Distributed Databases (Room: Napier 209)

Chair: Xueqi Cheng

Anitya: An Ephemeral Data Management Service and Secure Data Access

Surya Nepal, Julian Jang, John Zic

Robust Placement of Mobile Relational Operators for Large Scale Distributed Query Optimization

Belgin Ergenç, Franck Morvan, Abdelkader Hameurlain

Parallel Database Join Operations in Heterogeneous Grids

Werner Mach, Erich Schikuta

The Implementation of Distributed Retrieval System for a Large Number of Collections

Kwang Young Kim

12:30-14:00 Lunch (on your own)

14:00-15:30 **Parallel Session 5**

Session 5A: Parallel/Distributed Architectures and Algorithms

(Room: Napier 208)

Chair: Paul Coddington

An Efficient Parallel Algorithm for the Longest Increasing Subsequence Problem on a LARPBS

David Seme and Sideny Youlou

Exploiting Object-Based Parallelism on Multi-Core Multi-Processor Clusters

Xuli Liu

Choosing Method of the Most Effective Nested Loop Shearing for Parallelism

Kyoko Iwasawa, Alan Mycroft

Session 5B: Network Routing and Communication Algorithms

(Room: Napier 209)

Chair: Matthew Roughan

Two Tree-based Algorithms for Network Spare Capacity Design

Hovhannes A. Harutyunyan, Calin D. Morosan, Yunzan Zhang

An Algorithm for Constructing Hamiltonian Cycle in Metacube Networks

Yamin Li, Shietung Peng, Wanming Chu

Pairwise disjoint paths in pancake graphs

Naoki Sawada, Keiichi Kaneko and Shietung Peng

Session 5C: Grid Computing (Room: Napier 210)

Chair: Michael Hannaford

Grid Unit: a Self-Managing Building Block for Grid System

Jianfeng Zhan, Lei Wang, Ming Zou, Hui Wang, Shuang Gao, Yulei Ding

Peer Clustering-based Cache Sharing for Multi-Attribute Range Queries in Grid Environments

Mo Hai and Zhiwei Xu

Incorporating Fault Tolerance with Replication on Very Large Scale Grids

Elankovan Sundararajan, Aaron Harwood, and Ramammohanarao Kotagiri

15:30-15:50 Coffee Break (Napier Ground Floor)

15:50-17:20 **Parallel Session 6**

Session 6A: Parallel/Distributed Architectures and Algorithms

(Room: Napier 208)

Chair: ShieTung Peng

A Distributed Virtual Machine for Parallel Graph Reduction

Peter M. Kelly, Paul D. Coddington, Andrew L. Wendelborn

A Visualized Parallel Network Simulator for Modeling Large-scale Distributed Applications

Siming Lin, Xueqi Cheng, Jianming Lv

A Distributed Approach for Negotiating Resource Contributions in Dynamic Collaboration

Surya Nepal, John Zic, Jonathan Chan

Session 6B: Network Routing and Communication Algorithms

(Room: Napier 209)

Chair: Aaron Harwood

Efficient Algorithms for finding a Trunk on a Tree Network and its Applications

Yamin Li, Shietung Peng, Wanming Chu

Optimal Routing in Binomial Graph Networks

Thara Angskun, George Bosilca, Brad Vander Zanden, and Jack Dongarra

The Edge Product of Networks

Ali Jalali, Hamid Sarbazi-Azad

Session 6C: Networks (Others) (Room: Napier 210)

Chair: Cruz Izu

A Distributed Scheduling Algorithm for End-to-End Flow Fairness in Wireless Multi-hop Networks

Xiaowei Qin and Peixia Xu

Implementing a Phase Screen Generator in Hardware

Vinay Bajee Sriram, David Kearney

Randomized Initialization on the 1-Dimensional Reconfigurable Mesh

Koji Nakano

19:00-22:00 **Conference Dinner (Ayers House)**
Meet at Napier Ground Floor at 18:45

Thursday, December 6, 2007

- 8:30-9:00 Registration (Napier Ground Floor)
- 9:00-10:00 Keynote 3: Exploring Biocomplexity: New Challenges for High Performance Computing (Room: Napier G04)
Prof. Albert Zomaya, The University of Sydney, Australia
Introduction: Hong Shen
- 10:00-10:30 Coffee Break (Napier Ground Floor)
- 10:30-12:30 **Parallel Session 7**

Session 7A: Sensor Networks (Room: Napier 208)

Chair: Paul Werstein

A Fault Tolerant Topology Control Algorithm for Large-scale Sensor Networks
Lili Wang, Huihua Jin, Jianxun Dang, Yi Jin

Design and Analysis of a Backpressure Congestion Control Algorithm in Wireless Sensor Network
Ying Ouyang, Chuang Lin, Fengyuan Ren, Hongkun Yang, Xiaomeng Huang, Ting Liu

A Local Voronoi Diagrams-Based Approximate Algorithm for Minimum Disc Cover Problem
KeZhong Lu, XiaoHui Lin, FengXia Ding

OTC: an Optimized Topology Control Algorithm for Wireless sensor Networks
Nedal Ababneh, S. Selvadurai

Session 7B: Security and Privacy (Room: Napier 209)

Chair: Koji Nakano

Extending the Strand Space Method to Verify Kerberos V
Yongjian Li and Jun Pang

File System Security in the Environment of Non-Dedicated Computer Clusters
Martin Stava and Pavel Tvrdik

Trust Management and Negotiation for Attestation in Trusted Platforms using Web Services
Aarthi Nagarajan, Vijay Varadharajan, Michael Hitchens

Privacy Preserving Set Intersection Protocol Secure Against Malicious Behaviors
Yingpeng Sang and Hong Shen

- 12:30-14:00 Lunch (on your own)

14:00-16:00 **Parallel Session 8**

Session 8A: Formal Methods and Programming Languages (Room: Napier 208)

Chair: David Hemer

Implementation Issues Concerning the Action Systems Formalism

Fredrik Degerlund, Marina Waldén, Kaisa Sere

Symbolic Language Representations for Parametric Verification of the Revised
Capability Exchange Signalling Protocol

Lin Liu, Jonathan Billington

Modeling Session Initiation Protocol with Extended Finite State Machines

Sun Wenhui, Liu Feng, Dai Gang, Li Honghui

Formal Analysis of the VPN Service Management System

Sun Wenhui, Liu Feng, Dai Gang, Zhang Jinyu

Session 8B: P2P and Ad-Hoc Networks (Room: Napier 209)

Chair: Stuart Norcross

LiveBT: Providing Video-on-demand Streaming Service over BitTorrent Systems

Jianming Lv, Xueqi Cheng, Qing Jiang, JingYe, Tieying Zhang, Siming Lin, Lei Wang

A Resource-Search and Routing Algorithm within PCDN Autonomy Area

Ke Li, Wanlei Zhou, Shui Yu, Yunsheng Zhang

Supporting Multi-Attribute Queries in Peer-to-Peer Data Management Systems

Min Yu, Zhanhuai Li, Longbo Zhang

Local Reputation for P2P MMOG Design

Shanshan Liu, Jinlong Li, Xufa Wang

16:00

Conference Closing