

# INTERNATIONAL CONFERENCE ON PARALLEL PROCESSING

## 2006 International Conference on Parallel Processing *Commemorating 35 Years*

August 14-18, 2006 ■ The Columbus, A Renaissance Hotel ■ Columbus, OH

### CONFERENCE AT A GLANCE

**MONDAY  
AUGUST 14  
Workshops**

**TUESDAY  
AUGUST 15**

**WEDNESDAY  
AUGUST 16**

**THURSDAY  
AUGUST 17**

**FRIDAY  
AUGUST 18  
Workshops**

8:00	Registration																											
8:30	WSGA 8:35			IWEW 8:50			Registration			Registration			Registration															
9:00	WSGA			PDM			Opening Remarks & Awards			Keynote Address (Speaker: J. Dongarra)			Session 5A	Session 5B	Session 5C	CRTPC 9:30			HPSEC 8:50									
9:30							Keynote Address (Speaker: M. Elmozahy)			Refreshments			Refreshments															
10:00	WSGA			PDM			IWEW 9:50			Keynote Address (Speaker: M. Elmozahy)			Refreshments			Refreshments			CRTPC 9:30		HPSEC 8:50							
10:30	Refreshments				Refreshments				Session 4A			Session 4B		Session 4C		Session 6A		Session 6B		Session 6C		Refreshments						
11:00	WSGA	PDM	WSNet	IWEW	Session 1A	Session 1B	Session 1C	Session 4A			Session 4B		Session 4C		Session 6A		Session 6B		Session 6C		CRTPC		HPSEC					
11:30					Session 2A		Session 2B		Session 2C		Plenary Session			Session 7A		Session 7B		Session 8C		PEN-PCGCS		CRTPC		HPSEC				
12:00	Lunch (on your own) 12:00-1:30																											
1:00																												
1:30	WSNet			IWEW			Session 2A			Session 2B		Session 2C		Plenary Session			Session 7A		Session 7B		Session 8C		PEN-PCGCS		CRTPC		HPSEC	
2:00	WSNet			IWEW			Session 2A			Session 2B		Session 2C		Plenary Session			Session 7A		Session 7B		Session 8C		PEN-PCGCS		CRTPC		HPSEC	
2:30	WSNet			IWEW			Session 2A			Session 2B		Session 2C		Plenary Session			Session 7A		Session 7B		Session 8C		PEN-PCGCS		CRTPC		HPSEC	
3:00	Refreshments																											
3:30	WSNet			IWEW			Session 3A			Session 3B		Session 3C		Plenary Session			Session 8A		Session 8B		Session 8C		PEN-PCGCS		CRTPC		HPSEC	
4:00	WSNet			IWEW			Session 3A			Session 3B		Session 3C		Plenary Session			Session 8A		Session 8B		Session 8C		PEN-PCGCS		CRTPC		HPSEC	
4:30	WSNet			IWEW			Session 3A			Session 3B		Session 3C		Plenary Session			Session 8A		Session 8B		Session 8C		PEN-PCGCS		CRTPC		HPSEC	
5:00	Recess																											
6:00																												
7:00	Reception				Reception				Banquet Dinner																			
8:00																												

# 35<sup>th</sup> Annual International Conference on Parallel Processing PROGRAM

## MONDAY, AUG. 14 Workshops

### Workshop on Web Services-based Grid Applications (WSGA)

Room 20

8:35 - 8:45 Welcome/Introduction of  
Keynote Speaker, Daniel S. Katz

8:45 - 9:30 Keynote

*The Good, the Bad, and the Ugly: The  
Web Services Stack and the Myth of  
Interoperability*, **Jon MacLaren**

9:30 - 10:30 Session 1

- A Comparative Study of Web Services-based Event Notification Specifications, Yi Huang and Dennis Gannon
- A Hybrid XML-Relational Grid Metadata Catalog, Scott Jensen, Beth Plale, Sangmi Lee Pallickara, and Yiming Sun

10:30 - 11:00 Break

11:00 - 12:00 Session 2

- A Mechanism for Creating Scientific Application Services On-demand from Workflows, Gopi Kandaswamy and Dennis Gannon
- TrustCell: Towards the End-to-End Trustworthiness in Data-Oriented Scientific Computing, Sangmi Lee Pallickara and Beth Plale

### The Workshop on Parallel and Distributed Multimedia (PDM)

Room 21

9:00 – 9:05: Welcome, Introduction

9:05 – 10:30 Session 1

- Computation and Energy Efficient Image Processing in Wireless Sensor Networks Based on Reconfigurable Computing, T. T. Kwok and Y.K. Kwok, University of Hong Kong
- A first look at the Properties of Many-to-One Data Flows, V.T. Sam, P.Y. Ho, and Jack Lee, Chinese University of HK
- Grid Resource Allocation and Task Scheduling for Resource Intensive Application, Abdul Aziz, Hesham El-Rewini, Southern Methodist University

10:30 – 11:00 Break

11:00 – 12:30 Session 2

- Model-Based OpenMP Implementation of a 3D Facial Pose Tracking System, Sankalita Saha,

Chia-Jui Hsu, Chung-Ching Shen, Ashok Veeraraghavan, Alan Sussman, Shuvra Bhattacharaya, and Rama Chellappa, University of Maryland

- A Scalable Synchronization Environment Technique for Distributed Virtual Environments Based on Networked-Server Architectures, P. Morillo, J.M. Orduma, and J. Duato, Universidad de Valencia
- Parallel Algorithms for Motion Panorama Construction, Yong Wi, Hongyu Wang, and Suchendra M. Bhandarkar, University of Georgia

### The Workshop on Ad hoc and Sensor Networks (WSNet)

Room: Hayes E

10:30 AM-12:00 Session 1: Routing Protocols, Chair – Yu Wang

- Impact of Aggregation Efficiency on GIT Routing for Wireless Sensor Networks, Takafumi Aonishi, Hironori Yoshino, Takashi Takeuchi, Shinji Mikami, Hiroshi Kawaguchi, Chikara Ohta, and Masahiko Yoshimoto
- Locators of Mobile Sinks for Wireless Sensor Networks, Gyudong Shim and Daeyeon Park
- Maximum Lifetime Routing in Wireless Sensor Network by Minimizing Rate Capacity Effect, Kumar Padmanabh, Rajarshi Roy

12:00-1:30 Lunch Break

1:30-3:00 Session 2: Information

Assurance, Chair – C.K. Chang

- A Hexagon-Based Key Predistribution Scheme in Sensor Networks Guorui Li, Jingsha He and Yingfang Fu
- An Adaptive Directed Query Dissemination Scheme for Wireless Sensor Networks, Supriyo Chatterjea, Simone De Luigi, and Paul Havinga
- m-LPN: An Approach Towards a Dependable Trust Model for Pervasive Computing Applications, Munirul M. Haque and Sheikh Ahamed
- Trading Computation & Precision for Energy in Wireless Sensor Networks with Applications, K. Kalpakis and Shilang Tang

3:00-3:30 Break

3:30-5:00 Session 3: Scheduling and System Development, Chair – Min-Te Sun

- A Secure and Scalable Time Synchronization Protocol in IEEE 802.11 Ad Hoc Networks, Lin Chen, Jean Leneutre
- Dynamic Critical-Path Task Mapping and Scheduling for Collaborative In-Network Processing in Multi-Hop Wireless Sensor Networks, Yuan Tian, Yaoyao Gu, Eylem Ekici and Fusun Ozguner
- A Survey of Middleware for Sensor Network and Challenges, Mohammad M. Molla and Sheikh Iqbal Ahmed
- A Toolkit-Based Approach to Indoor Localization, Yu Wang and Adam Harder

### The 3<sup>rd</sup> International Workshop on Embedded Computing (IWEC)

Room: Hayes D

8:50-9:00 Introduction by Salvatore Vitabile and Antonio Gentile

9:00-9:50 Keynote Speech: *Embedded Medical Computing*, **Majid Sarrafzadeh**

09:50-10:30 Session 1: Embedded Software, Chair – Abelardo Lopez-Lagunas

- Multidimensional Dataflow-based Parallelization for Multimedia Instruction Set Extensions, Lewis Baumstark, Linda Wills
- Dynamic Binary Translation and Optimization in a Whole-System Emulator—SkyEye, Chen Yu, Ren Jie, Zhu Hui, Shi Yuan

10:30-11:00 Break

11:00-12:00 Session 2: Embedded Hardware, Chair – Lewis Baumstark

- Compiler Manipulation of Stream Descriptors for Data Access Optimization, Abelardo Lopez-Lagunas, Sek Chai
- Scalable Core-Based Methodology and Synthesizable Core for Systematic Design Environment in Multicore SoC, Ben A. Abderazek, Sotaro Kawata, Tsutomu Toshinaga, Masahiro Sowa
- Embedded Knowledge-based Speech Detectors for Real-Time Recognition Tasks, Sabato Marco Siniscalchi, Fulvio Gennaro, Salvatore Andolina, Salvatore

Vitabile, Antonio Gentile, Filippo Sorbello

12:00-1:30 Lunch Break

1:30-3:00: Session 3: Embedded Applications, Chair – Sek Chai

- A monitoring framework exploiting the synergy between actual and virtual wireless sensors, Luca Gatani, Giuseppe Lo Re, Marco Ortolani, Filippo Sorbello
- Combined People Position and Compass Detection for Context-aware, Service Provision, Alessandro Genco, Salvatore Sorce, Emanuele Varrica
- Retargeting Image-Processing Algorithms to Varying Processor Grain Sizes, Samuel Sander, Linda Wills
- A Lightweight Software Architecture for Robot Navigation and Visual Logging through Environmental Landmarks Recognition, Edoardo Ardizzone, Antonio Chella, Irene Macaluso, Daniele Peri

3:00-3:30 Break

3:30-5:00 Session 4: Security, Testing and Verifications, Chair – Samuel Sander

- Model Checking Control Communication of a FACTS Device, David Cape, Bruce McMillin, James Townsend
- Automatic flow analysis using symbolic execution and path enumeration, Djemai Kebbal
- Protected JTAG interface, Ronald Buskey, Barbara Frosik

## TUESDAY, AUG. 15

### Opening Remarks and Awards

9:00-9:30 – Hayes D and E

### Keynote Address

9:30-10:30 – Hayes D and E

**Dr. Mootaz Elmozahy**, *Four Years with the High Productivity Computing Systems – A Perspective*

10:30-11:00 Break

### Session 1A: Resource Management

Room: Hayes D

11:00-12:00

Chair – David Du, University of Minnesota/NSF

- Empirical Studies on the Behavior of Resource Availability in Fine-Grained Cycle Sharing Systems, Xiaojuan Ren, Rudolf Eigenmann

- Solving Energy-Latency Dilemma: Task Allocation for Parallel Applications in Heterogeneous Embedded Systems, Tao Xie, Xiao Qin, Mais Nijim

### Session 1B: Switch Architectures

Room: Hayes E

11:00-12:00

Chair – Kevin Barker, Los Alamos National Lab

- RECN-DD: A Memory-Efficient Congestion Management Technique for Advanced Switching, Pedro J. Garcia, Jose Flich, Jose Duato, Ian Johnson, Francisco J. Quiles, Finbar Naven
- Dynamic Fault Tolerance with Misrouting in Fat Trees, Frank Olaf Sem-Jacobsen, Tor Skeie, Olav Lysne, Jose Duato

### Session 1C: Microarchitectures

Room 20

11:00-12:00

Chair – Beth Plale, Indiana University

- Exploring the Performance Limits of Simultaneous Multithreading for Scientific Codes, Evangelia Athanasiaki, Nikos Anastopoulos, Kornilios Kourtis, Nectarios Koziris
- Vector Lane Threading, Suzanne Rivoire, Rebecca Schultz, Tomofumi Okuda, Christos Kozyrakis

12:00-1:30 Lunch Break

### Session 2A: Algorithms

Room: Hayes D

1:30-3:00

Chair – Tao Xi, San Diego State University

- ExactMP: An Efficient Parallel Exact Solver for Phylogenetic Tree Reconstruction Using Maximum Parsimony, David A. Bader, Vaddadi P. Chandu, Mi Yan
- A Parallel, Out-of-Core Algorithm for RNA Secondary Structure Prediction, Wenduo Zhou, David K. Lowenthal
- Generalized Edge Coloring for Channel Assignment in Wireless Networks, Chun-Chen Hsu, Pangfeng Liu, Da-wei Wang, Jan-Jan Wu

### Session 2B: Data Management

Room: Hayes E

1:30-3:00

Chair – Jeffrey Vetter, Oak Ridge National Lab

- Generic Adaptive Moving Object Tracking Algorithms, Jing Zhou, Hong Va Leong, Qin Lu, Ken C.K. Lee
- Object Placement in Parallel Tape Storage Systems, Xianbo Zhang, Dingshan He, David H.C. Du, Yingping Lu
- FREERIDE-G: Supporting Applications that Mine Remote Data Repositories, Leonid Glimcher, Ruoming Jin, Gagan Agrawal

### Session 2C: Parallel Molecular Dynamics

Room 20

1:30-3:00

Chair – Bruce McMillin, University of Missouri

- **(BEST PAPER)** Scalable Time-Parallelization of Molecular Dynamics Simulations in Nano Mechanics, Yanan Yu, Ashok Srinivasan, Namas Chandra
- Salsa: Scalable Asynchronous Replica Exchange for Parallel Molecular Dynamics Applications, Li Zhang, Manish Parashar, Emilio Gallicchio, Ronald M. Levy
- Adaptive Load Balancing for Long-Range MD Simulations in a Distributed Environment, Sumanth J.V, David R. Swanson, Hong Jiang

3:00-3:30 Break

### Session 3A: Scheduling

Room: Hayes D

3:30-5:00

Chair – Dan Stanzione, Arizona State University

- Edge Scheduling Algorithms in Parallel and Distributed Systems, Jian-Jun Han, Duo-Qiang Wang
- Decoupling the bandwidth and latency bounding for table-based schedulers, Raul Martinez, Francisco J. Alfaro, Jose L. Sanchez
- AOPC: an Adaptive Optimized Proportional Controller for AQM, Jianxin Wang, Liang Rong

### Session 3B: Compilers and Tools

Room: Hayes E

3:30-5:00

Chair – Rudolf Eigenmann, Purdue University

- Data-Flow Analysis for MPI Programs, Michelle Mills Strout, Barbara Kreaseck, Paul Hovland
- History-aware Self-Scheduling, Arun Kejariwal, Alexandru Nicolau, Constantine D. Polychronopoulos

- A Flexible and Dynamic Infrastructure for MPI Tool Interoperability, Martin Schulz, Bronis R. de Supinski

### **Session 3C: Ad Hoc Networks**

Room 20

3:30-5:00

*Chair – Min-Te Sun, Auburn University*

- Truthful Topology Control in Wireless Ad Hoc Networks with Selfish Nodes, Jianfeng Cai, Yunhuai Liu, Udo Pooch, Mo Li, Jie Lian, Lionel Ni
- Social Welfare Based Routing in Ad hoc Networks, Mingming Lu, Jie Wu
- Improving Spatial Reuse with Collision-Aware DCF in Mobile Ad Hoc Networks, Lubo Song, Chansu Yu

### **ICPP '06 Reception**

*Outdoor deck, 4<sup>th</sup> Floor*

6:00-8:00pm

## **WEDNESDAY, AUG. 16**

### **Keynote Address**

*Room: Hayes D and E*

9:00-10:00

**Professor Jack Dongarra**, *The Impact of Multicore on Math Software and Exploiting Single Precision Computing to Obtain Double Precision Results*

10:00-10:30 Break

### **Session 4A: Performance Analysis**

*Room: Hayes D*

10:30-12:00

*Chair – Michelle Strout, Arizona State University*

- An Analysis of System Balance Requirements for Scientific Applications, Sadaf Alam, Jeffrey Vetter
- Performance Analysis of a High Energy Colliding Beam Simulation Code on Four HPC Architectures, Hongzhang Shan, Ji Qiang, Erich Strohmaier, Kathy Yelick
- A Performance Model of the KRAK Hydrodynamics Application, Kevin J. Barker, Scott Pakin, Darren J. Kerbyson

### **Session 4B: Replication**

*Room: Hayes E*

10:30-12:00

*Chair – Ashok Srinivasan, Florida State University*

- False Rate Analysis of Bloom Filter Replicas in Distributed Systems, Yifeng Zhu, Hong Jiang
- About the efficiency of partial replication to implement Distributed Shared Memory, Jean-Michel Helary, Alessia Milani
- Using Space and Attribute Partitioned Partial Replicas for Data Subsetting and Aggregation Queries, Li Weng, Umit Catalurek, Tahsin Kurc, Gagan Agrawal, Joel Saltz

### **Session 4C: Peer to Peer**

*Room 20*

10:30-12:00

*Chair – Quianping Gu, Simon Fraser University*

- Adaptively Routing P2P Queries Using Association Analysis, Brian D. Connelly, Christopher W. Bowron, Li Xiao, Pang-Ning Tan, Chen Wang
- hiREP: Hierarchical Reputation Management for Peer-to-Peer Systems, Xiaomei Liu, Li Xiao
- Analyzing Multiple File Downloading in BitTorrent, Ye Tian, Di Wu, Kam-Wing Ng

12:00-1:30 Lunch Break

### **Plenary Panel**

*Room: Hayes D and E*

1:30-3:00

**Parallel Processing – The First 35 Years and The Next 35 Years**

**Co-Chaired and Moderated by: Xiaodong Zhang**, The Ohio State University and **Bruce Berra**

**Panelists:** Frederica Darema (NSF), David Du (Minnesota/NSF), Jose Duato (Technical University of Valencia, Spain), Rudi Eigenmann (Purdue University), Kai Li (Princeton University), Bruce Maggs (CMU), Lionel Ni (Hong Kong University of Science and Technology, China), Gregory Pfister (IBM), Timothy Pinkston (USC/NSF), H. J. Siegel (Colorado State University), Thomas Sterling (Louisiana State University), Jeffery Vetter (Oak Ridge National Lab) and Wei Zhao (Texas A&M and NSF)

3:00-3:30 Break

### **Plenary Panel** – continued

*Room: Hayes D and E*

3:30-5:00

### **ICPP '06 Banquet**

*Room: Hayes C*

6:00-8:00pm

## **THURSDAY, AUG. 17**

### **Session 5A: Resource Discovery**

*Room: Hayes D*

9:00-10:00

*Chair – Li Xiao, Michigan State University*

- Parallel Information Extraction on Shared Memory Multi-processor System, Jiulong Shan, Yurong Chen, Qian Diao, Yimin Zhang
- Using Gossip for Dynamic Resource Discovery, Eric Simonton, Byung Kyu Choi, Steven Seidel

### **Session 5B: Microarchitectures (II)**

*Room: Hayes E*

9:00-10:00

*Chair – Jose Duato, Technical University of Valencia*

- Balancing ILP and TLP in SMT Architectures through Out-of-Order Instruction Dispatch, Joseph Sharkey, Dmitry Ponomarev
- Address-Value Decoupling for Early Register Deallocation, Deniz Balkan, Joseph Sharkey, Dmitry Ponomarev, Aneesh Aggarwal

### **Session 5C: Optical Networking**

*Room 20*

9:00-10:00

*Chair – Yuanyuan Yang, SUNY Stony Brook*

- Ant Colony Optimal Algorithm: Fast Ants on the Optical Pipelined R-Mesh, Ken D. Nguyen, Anu G. Bourgeois
- Efficient Algorithms for Symmetric Traffic Grooming in SONET/WDM Networks, Yong Wang, Qian-Ping Gu

10:00-10:30 Break

### **Session 6A: Grids**

*Room: Hayes D*

10:30-12:00 –

*Chair – Gagan Agrawal, The Ohio State University*

- Data Sharing Pattern Aware Scheduling on Grids, Young Choon Lee, Albert Y. Zomaya
- A Framework to Achieve Guaranteed QoS for Applications and High System Performance in Multi-Institutional Grid Computing, Umar Farooq, Shikharesh Majumdar, Eric W. Parsons

- Vishwa: A Reconfigurable P2P Middleware for Grid Computations, Venakateswara Reddy, A Vijay Srinivas, Tarun Gopinath, D. Janakiram

### **Session 6B: Message Scheduling**

10:30-12:00 – Hayes E

Chair – Xin Yuan, Florida State University

- High Performance Block I/O for Global File System (GFS) with InfiniBand RDMA, Shuang Liang, Weikuan Yu, Dhabaleswar K. Panda
- The Power and Limit of Adding Synchronization Messages for Synchronous Agreement, Jiannong Cao, Michel Raynal, Xianbing Wang, Weigang Wu
- Achieving Bounded Delay on Message Delivery in Publish/Subscribe Systems, Jinling Wang, Jiannong Cao, Jing Li, Jie Wu

### **Session 6C: Group Communication**

10:30-12:00 – Room 20

Chair – Byung Choi, Michigan Tech University

- Inter-Overlay Cooperation in High-Bandwidth Overlay Multicast, Guang Tan, Stephen A. Jarvis
- A Service-Centric Multicast Architecture and Routing Protocol, Yuanyuan Yang, Jianchao Wang, Min Yang
- Worst-Case Delay Control in Multi-Group Overlay Networks, Wanqing Tu

12:00-1:30 Lunch Break

### **Session 7A: Resource Management (II)**

1:30-3:00– Hayes D

Chair – Dr. Almadena Y. Chtchelkanova, National Science Foundation

- An Integrated Approach for Processor Allocation and Scheduling of Mixed-Parallel Applications, Nagavijayalakshmi Vydyanathan, Sriram Krishnamoorthy, Gerald Sabin, Umit Catalyurek, Tahsin Kurc, P. Sadayappan, Joel Saltz
- Managing Risk of Inaccurate Runtime Estimates for Deadline Constrained Job Admission Control in Clusters, Chee Shin Yeo, Rajkumar Buyya

- A Stochastic Approach to Measuring the Robustness of Resource Allocations in Distributed Systems, Vladimir Shestak, Jay Smith, H. J. Siegel, Anthony A. Maciejewski

### **Session 7B: Clusters**

1:30-3:00– Hayes E

Chair – Martin Schulz, Lawrence Livermore National Laboratory

- Application-Transparent Checkpoint/Restart for MPI Programs over InfiniBand, Qi Gao, Weikuan Yu, Wei Huang, Dhabaleswar K. Panda
- A Switch-tagged VLAN Routing Methodology for PC Clusters with Ethernet, Tomohiro Otsuka, Michihiro Koibuchi, Tomohiro Kudoh, Hideharu Amano
- Data Transfers between Processes in a SMP System: Performance Study and Application to MPI, Darius Buntinas, Guillaume Mercier, William Gropp

### **Session 7C: Multi-dimensional Algorithms**

1:30-3:00– Room 20

Chair – David Bader, Georgia Institute of Technology

- A Coarse Grained Parallel Algorithm for Hausdorff Voronoi Diagrams, Frank Dehne, Anil Maheshwari, Ryan Taylor
- A Formal Analysis of Space Filling Curves for Parallel Domain Decomposition, Srikanta Tirthapura, Sudip Seal, Srinivas Aluru
- Performance Modeling based on Multidimensional Surface Learning for Performance Predictions of Parallel Applications in Non-Dedicated Environments, Jay Yagnik, H.A. Sanjay, Sathish Vadhiyar

3:00-3:30 Break

### **Session 8A: Algorithms (II)**

3:30-5:00– Hayes D

Chair – Srikanta Tirthapura, Iowa State University

- Designing Multithreaded Algorithms for Breadth-First Search and *st*-connectivity on the Cray MTA-2, David A. Bader, Kamesh Madduri

- A Parallel External-Memory Frontier Breadth-First Traversal Algorithm for Clusters of Workstations, Robert Niewiadomski, Jose Nelson Amaral, Robert C. Holte
- Parallel Algorithms for Evaluating Centrality Indices in Real-world Networks, David A. Bader, Kamesh Madduri

### **Session 8B: Data Management (II)**

3:30-5:00–Hayes E

Chair – Srimi Parthasarathy, The Ohio State University

- On Creating Efficient Object-relational Views of Scientific Datasets, Sivaramakrishnan Narayanan, Tahsin Kurc, Umit Catalyurek, Joel Saltz
- A PROactive Request Distribution (PRORD) Using Web Log Mining in Cluster-Based Web Server, Heung Ki Lee, Gopinath Vageesan, Ki Hwan Yum, Eun Jung Kim

### **Session 8C: Multimedia**

3:30-5:00– Room 20

Chair – Wu-chi Feng, Portland State University

- Distribution Coordination Protocols to Realize Scalable Multimedia Streaming in Peer-to-Peer Overlay Networks, Satoshi Itaya, Naohiro Hayashibara, Tomoya Enokido, Makoto Takizawa
- CoopStream: A Cooperative Cache Based Streaming Schedule Scheme for On-demand Media Services on Overlay Networks, Baoliu Ye, Minyi Guo, Jingling Xue
- Towards the Parallelization of Shot Detection - a Typical Video Mining Application Study, Eric Li, Wenlong Li, Tao Wang, Nan Di, Carole Dulong, Yimin Zhang

## **FRIDAY, AUG. 18 Workshops**

### **The Workshop on Performance Evaluation of Networks for Parallel, Cluster and Grid Computing Systems (PEN-PCGCS)**

Room 20

1:30-1:40 Welcome and Opening

1:40-3:00 Session 1, Chair – A. Khonsari

- Performance Analysis of a Parallel Discrete Model for the Simulation of Laser Dynamics, J.L. Guisido, F. Fernandez, K. Iskra
- Implementation Experiences in Transparently Harnessing Cluster-

Wide Memory, M.R. Hines, M. Lewandowski, K Gopalan

- A New Architecture of Grid Security System Construction, M. Li, D. Wang

3:00-3:30 Break

3:30-4:45 Session 2, Chair – B. Javadi

- Servers Reintegration in Disconnection-Resilient Mobile, A. Boukerche, R. Al-Shaikh
- Analysis of Interconnection Networks in Heterogeneous Multi-Cluster Systems, B. Javadi, M.K. Akbari, J.H. Abawajy
- How to Improve the Scalability of Read/Write Operations with Dynamic Reconfiguration of a Tree-Structured Coterie, I. Frain, R. Basmadjian, J. Bahoun, A. M'zoughi

4:45-5:50 Session 3, Chair –

A. Boukerche

- PLT – Positional Lexicographic Tree: A New Structure for Mining Frequent Itemsets, A. Boukerche, S. Samarah
- Analysis of Circuit Switching for the Torus Interconnect Networks with Hot-Spot Traffic, F. Safaei, A. Khonsari, M. Fathy, M Ould-Khaoua

### **The 5<sup>th</sup> Workshop on Compile and Runtime Techniques for Parallel Computing (CRTPC)**

Room: Hayes D

9:30-10:30 Keynote/Session 1, Chair – P.

Sadayappan, Keynote: *Challenges and Opportunities of Multi-Core*

*Architectures in Run-Time Systems,*

**Jarek Nieplocha**, PNNL

10:30-11:00 Break

11:00-12:00 Session 2, Chair – Hai Jiang

- Using Overdecomposition to Overlap Communication Latencies With Computation and Take Advantage of SMT Processors, Lars Ailo Bongo, Brian Vinter, Otto J. Anshus, Tore Larsen and John Markus Bjoerndalen
- MPI Pre-Processor: Generating MPI Derived Datatypes from C Datatypes Automatically, Eric Renault and Christian Parrot

12:00-1:30 Lunch Break

1:30-3:00 Session 3, Chair – P.

Sadayappan

- Dynamic Load-Balancing of Jini and .NET Services, Ying Chen Lin, Sy-Yuan Li and Yuan-Shin Hwang
- An Adaptive Heterogeneous Software DSM, John Paul Walters, Hai Jiang and Vipin Chaudhary

- A Run-Time Scheduling Method for Dynamic and Heterogeneous Platforms, Salah-Salim Boutamine, Daniel Millot and Christian Parrot

3:00-3:30 Break

3:30-5:00 Session 4, Chair – Vipin

Chaudhary

- Improving the Efficiency of Functional Parallelism by Means of Hyper-scheduling, Udo Höning and Wolfram Schiffmann
- Practical Task Flow Scheduling for High Throughput Computational Grid, Wei Sun, Yasushi Inoguchi, Yuanyuan Zhang, and Yanwei Wu
- Towards a Source Level Compiler: Source Level Modulo Scheduling, Yosi Ben-Asher and Danny Meisler

### **The 8<sup>th</sup> Workshop on High Performance Scientific and Engineering Computing (HPSEC)**

Room: Hayes E

8:50-9:00 Introduction

9:00-9:50 Keynote Speech. Surgery needs

HPC, Really!, **Vipin Chaudhary**

9:50-10:30 Session 1: Grid Computing

- Framework for Interactive Parallel Dataset Analysis on the Grid, David A. Alexander, Balamurali Ananthan, Tony Johnson, Victor Serbo
- A Generic Task-Farming Framework for Reservoir Analysis in a Grid Environment, Santiago Pena, Dayong Huang, Xin Li, Zhou Lei, Gabrielle Allen, Chris White

10:30-11:00 Break

11:00-12:00 Session 2: Scheduling and Load Balancing

- Multiple Flows of Control in Migratable Parallel Programs, Gengbin Zheng, Orion Lawlor, Laxmikant Kale
- Robust Resource Allocation in Weather Data Processing Systems, Mohana Oltikar, Jeff Brateman, Joe White, Jon Martin, Keith Knapp, Anthony Maciejewski, Howard Siegel
- A FLOPs based Model for Performance Analysis and Scheduling of Applications for Single and Multiple CPUs, Nilesh Padhariya, Kolin Paul, Dheeraj Bhardwaj

12:00-1:30 Lunch Break

1:30-2:50 Session 3: Applications

- Parallel Hyperspectral Image Processing on Commodity, Graphics Hardware, Javier Setoain, Christian Tenllado, Manuel Prieto, David

Valencia, Antonio Plaza, Javier Plaza

- High performance multiscale simulation for crack propagation, Guillaume Anciaux, Olivier Coulaud, Jean Roman
- Parallel Implementation of the Polyhedral Homotopy Method, Jan Verschelde, Yan Zhuang
- Dynamic Algorithm Selection in parallel GAMESS calculations, Nurzhan Ustemirov, Masha Sosonkina, Mark Gordon, Mike Schmidt

3:00-3:30 Break

3:30-4:10 Session 4: Data Structures and Algorithms

- Tetrahedral Mesh Refinement in Distributed Environments, Mehmet Balman
  - Efficient FEM Parallel Iterative Solvers with Polynomial Preconditioning, Yu Liang, Ramdev Kanapady, Kumar Tamma
- 4:10-4:50 Session 5: System Architecture
- Building Cost Effective High Performance Computing Environment via PCI Express, Akira Nishida
  - Remote iSCSI Cache on InfiniBand: An Approach to Optimize iSCSI System, Xuhui Liu, Nan Wang, Jizhong Han, Lisheng Zhang, Chengde Han