16th Annual International Conference on High Performance Computing Program

Thursday, Dec 17, 2009
10:00 - 12:00
Session 1: Scheduling and resource management

ERfair Scheduler with Processor Shutdown
> Arnab Sarkar (Indian Institute of Technology Kharagpur, India); Sarthak Swaroop (B.Tech, India); Partha Chakrabarti (IIT Kharagpur, India); Sujoy Ghose (IIT Kharagpur, India); Partha Chakrabarti (IIT Kharagpur, India)

Service Oriented Architecture for Job Submission and Management on Grid Computing Resources
> Archit Kulshrestha (Louisiana State University, USA); Gabrielle Allen (Louisiana State University, United Kingdom)

Improved Opportunistic Scheduling Algorithms for WiMAX Mobile Multihop Relay Networks
> Srinath Narasimha (Indian Institute of Technology Madras, India); Krishna Sivalingam (University of Maryland, Baltimore County (UMBC), USA)

Automatic Data Placement and Replication in Grids
> Ying Ding (University of Nebraska-Lincoln, USA); Ying Lu (University of Nebraska-Lincoln, USA)

An Effective Scheduling Algorithm for Linear Makespan Minimization on Unrelated Parallel Machines
> Liya Fan (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Fa Zhang (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Gongming Wang (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China); Zhiyong Liu (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China)

Spanning Tree Routing Strategies for Divisible Load Scheduling on Arbitrary Graphs - a Comparative Performance Analysis
> Bharadwaj Veeravalli (National University of Singapore, Singapore)

14:00 - 15:00
Session 2: Best paper session

Non Uniform Power Access in Large Caches with Low-Swing Wires
> Aniruddha Udipi (University of Utah, USA); Naveen Muralimanohar (HP Labs, USA); Rajeev Balasubramonian (University of Utah, USA)

Group File Operations for Scalable Tools and Middleware

Michael Brim (University of Wisconsin-Madison, USA); Barton Miller (University of Wisconsin, USA)

15:30 - 18:10
Session 3: Architecture
Distance-Aware Round-Robin Mapping for Large NUCA Caches

Alberto Ros (University of Murcia, Spain); Manuel Acacio (Universidad de Murcia, Spain); Marcelo Cintra (University of Edinburgh, United Kingdom); José M. García (University of Murcia, Spain)

Three Scalable Approaches to Improving Many-core Throughput for a Given Peak Power Budget

John Sartori (UIUC, USA); Rakesh Kumar (University of Illinois at Urbana-Champaign, USA)

Fast Checkpointing by Write Aggregation with Dynamic Buffer and Interleaving on Multicore Architecture

Xiangyong Ouyang (The Ohio State University, USA); Karthik Gopalakrishnan (The Ohio State University, USA); Tejus Gangadharappa (Ohio State University, USA); Dhabaleswar Panda (The Ohio State University, USA)

HiPPAI: High Performance Portable Accelerator Interface for SoCs

Omesh Tickoo (Intel, USA); Ramesh Illikkal (Intel Corporation, USA); Vineet Chadha (Intel Corporation, USA); Paul Stillwell (Intel, USA); Ravishankar Iyer (Intel Corp, USA); Don Newell (Intel Corporation, USA); Steven Zhang (Intel, USA)

P-Slice Based Efficient Speculative Multithreading

Rakesh Ranjan (UPC-Barcelona, Spain); Pedro Marcuello (Intel Laboratories Barcelona, Spain); Fernando Latorre (Intel Laboratories Barcelona, Spain); Antonio Gonzalez (Intel and UPC, Spain)

A Framework for Routing and Resource Allocation in Network Virtualization

Aashild Solheim (Simula Research Laboratory, Norway); Olav Lysne (Simula Research Laboratory, Norway); Tor Skeie (Simula Research Lab, Norway); Thomas Sødring (Simula Research Laboratory, Norway); Sven-Arne Reinemo (Simula Research Laboratory, Norway)

Cache Streamization for High Performance Stream Processor

Wu Nan (National University of Defense Technology, P.R. China)

Terascale Chip Multiprocessor Memory Hierarchy and Programming Model

Yan Shoumeng (Intel, P.R. China); Xiaocheng Zhou (Intel, P.R. China); Ying Gao (Intel, P.R. China); Hu Chen (Intel, P.R. China); Peinan Zhang (Intel, USA); Naveen Cherukuri (Intel, USA); Bratin Saha (Intel, USA)

Friday, Dec 18, 2009
10:00 - 12:00
Session 4: Mobile computing and sensor neworks
On Providing Event Reliability and Maximizing Network Lifetime Using Mobile Data-Collectors in Wireless Sensor Networks

Saamaja Vupputuri (Indian Institute of Technology Madras, India); Kiran Rachuri (IIT Madras, India)

Taming the Exponential State Space of the Maximum Lifetime Sensor Cover problem

Akshaye Dhawan (Georgia State University, USA); Sushil Prasad (Georgia State University, USA)

Comparison of Secure Data Aggregation Schemes for Wireless Sensor Networks

Rajendra Boppana (University of Texas at San Antonio, USA); Pengjun Pan (University of Texas at San Antonio, USA)

An Energy Efficient Deterministic Key Establishment Scheme for Clustered Wireless Sensor Networks

Poornima Kulkarni (Siddaganga Institute of Technology, India)

Enhancing Bandwidth Reservation Guarantee for QoS Routing Protocol in Mobile Ad Hoc Networks

Khaled Al Soufy (Aligarh Muslim University, India)

Integrating Traffic Estimation and Dynamic Channel Reconfiguration in Wireless Mesh Networks

Athula Balachandran (IIT Madras, India); Antony Franklin A (Indian Institute of Technology Madras, India); Siva Ram Murthy (IIT Madras, India)

13:00 - 15:40

Session 5: Software systems

Integrating and Optimizing Transactional Memory In a Data Mining Middleware

Vignesh Ravi (Ohio State University, USA); Gagan Agrawal (The Ohio State University, USA)

Impact of Early Abort Mechanisms on Lock-Based Software Transactional Memory

Zhengyu He (Georgia Institute of Technology, USA); Bo Hong (Georgia Institute of Technology, USA)

Supporting Load Balancing For Distributed Data-Intensive Applications

Leo Glimcher (The Ohio State Universitry, USA); Vignesh Ravi (Ohio State University, USA); Gagan Agrawal (The Ohio State University, USA)

CellMT: A Cooperative Multithreading Library for the Cell/B.E.

Vicenç Beltran (Barcelona Supercomputing Center, Spain); Eduard Ayguade (Universitat Politècnica de Catalunya, Spain); Jordi Torres (Technical University of Catalonia (UPC)-Barcelona Supercomputing Center (BSC), Spain); David Carrera (Technical University of Catalonia (UPC) - Barcelona Supercomputing Center (BSC), Spain)

Extracting the Textual and Temporal Structure of Supercomputing Logs

Sourabh Jain (University of Minnesota-Twin cities, USA); Inderpreet Singh (University of Minnesota, USA); Abhishek Chandra (University of Minnesota, USA); Zhi-Li Zhang (University of Minnesota, USA); Greg Bronevetsky (Lawrence Livermore National Laboratory, USA)

Compile-time Disambiguation of MATLAB Types through Concrete Interpretation with Automatic Run-time Fallback

Chun-Yu Shei (Indiana University, USA); Arun Chauhan (Indiana University, USA); Sidney Shaw (Indiana University, USA)

Statistical Workload Shaping for Storage Systems

Hui Wang (Rice University, USA); Peter Varman (Rice University, USA)

Demand-driven Execution of Static Directed Acyclic Graphs

Prabhanjan Kambadur (Indiana University, USA); Anshul Gupta (IBM T.J. Watson Research Center, USA); Torsten Hoefler (Indiana University, USA); Andrew Lumsdaine (Indiana University, USA)

Saturday, Dec 19, 2009

08:40 - 10:00

Session 6: Communication networks

Improving throughput fairness in k-ary n-cube networks
Cruz Izu (The University of Adelaide, Australia)

Multiple Virtual Lanes-aware MPI Collective Communication in Multi-core Clusters
Bo Li (Institute of Computing Technology, Chinese Academy of Science, P.R. China); Zhigang Huo (NCIC,Institute of Computing Technology, Chinese Academy of Science, P.R. China); PanYong Zhang (NCIC,Institute of Computing Technology, Chinese Academy of Science, P.R. China); Dan Meng (Chinese Academy of Sciences, P.R. China)

High Search Performance, Small Document Index: P2P Search Can Have Both
Yingwu Zhu (Seattle University, USA), Haiying Shen (Clemson Univeristy,USA)

CORP: A Cooperative File Replication Protocol for Structured P2P Networks
Haiying Shen (Clemson Univeristy, USA)

10:30 - 11:50

Session 7: Algorithms

Highly Scalable Algorithm For Distributed Real-Time Text Indexing
Ankur Narang (IBM India Research Labs, New Delhi, India., India); Vikas Agarwal (IBM India Research Lab, India); Monu Kedia (IBM India Research Laboratory, India); Vijay Garg (IBM India Research Lab, India)

A Parallel Algorithm for Exact Bayesian Network Inference
Olga Nikolova (Iowa State University, USA); Jaroslaw Zola (Iowa State University, USA); Srinivas Aluru (Iowa State University, USA)

An Efficient Parallel Algorithm for Evaluating Join Queries on Heterogeneous Distributed Systems
Mostafa Bamha (LIFO, University of Orléans, France); Mohamad Al Hajj hassan (LIFO, University of Orléans, France)

A Fast Algorithm for Energy-Aware Mapping of Cores Onto WK-Recursive NoC under Performance Constraints
Chen TianZhou (Zhejiang University,China, P.R. China); Chen Du (University of ZheJiang, P.R. China); Like Yan (Zhejiang University, P.R. China); Wei Hu (Zhejiang University, P.R. China)

13:00 - 15:40

Session 8: Applications

Towards a Robust, Real-time Face Processing System using CUDA-enabled GPUs.
Bharatkumar Sharma (IIIT-B, India); Rahul Thota (Siemens Information Systems Ltd, India); Nagavijayalakshmi Vydyanathan (Siemens Corporate Technology, India, India); Amit Kale (Siemens Corporate Technology, India)

Comparing the performance of Clusters, Hadoop, and Active Disks on Microarray Correlation Computations

Jeffrey Delmerico (University at Buffalo, USA); Nathanial Byrnes (Netezza Corporation, USA); Andrew Bruno (University at Buffalo, USA); Matthew Jones (SUNY-Buffalo, USA); Steven Gallo (University at Buffalo, USA); Vipin Chaudhary (University at Buffalo, SUNY, USA)

Speculative p-DFAs for Parallel XML Parsing

Ying Zhang. (SUNY Binghamton, USA); Yinfei Pan (SUNY Binghamton, USA); Kenneth Chiu (SUNY Binghamton, USA)

Performance Optimizations for Distributed Real-time Text Indexing

Ankur Narang (IBM India Research Labs, New Delhi, India., India); Karthik Swaminathan (IBM India Research Lab, New Delhi, India); Prashant Agrawal (Indian Institute of Technology Kharagpur, India)

Optimizing the use of GPU Memory in Applications with Large data sets

Nadathur Satish (University of California, Berkeley, USA); Narayanan Sundaram (University of California, Berkeley, USA); Kurt Keutzer (UC, Berkeley, USA)

Detailed analysis of I/O traces of large scale applications

Nithin Nakka (Northwestern University, USA); Alok Choudhary (Northwestern University, USA); Ruth Klundt (Sandia National Laboratories, USA); Marlow Weston (Hewlett Packard, USA); Lee Ward (Sandia National Laboratories, USA)

Designing Systems for Large-Scale, Discrete-Event Simulations: Experiences with the FastTrans Parallel Microsimulator

Sunil Thulasidasan (Los Alamos National Laboratory, USA); Shiva Kasiviswanathan (Los Alamos National Laboratory, USA); Stephan Eidenbenz (Los Alamos National Laboratory, USA); Emanuele Galli (Univerità di Roma Tor Vergata, Italy); Susan Mniszewski (Los Alamos National Laboratory, USA); Philip Romero (Los Alamos National Laboratory, USA)

Acceleration of Conjugate Gradient Method for Circuit Simulation Using CUDA

Anirudh Maringanti (Indian Institute of Technology, Bombay, India); Viraj Athavale (Indian Institute of Technology, Bombay, India); Sachin Patkar (Indian Institute of Technology, Bombay, India)

16:10 - 17:10
Session 9: Performance evaluations

Continuous Performance Monitoring for Large-Scale Parallel Applications

Isaac Dooley (University of Illinois at Urbana-Champaign, USA); Chee Wai Lee (University of Illinois at Urbana-Champaign, USA); Laxmikant Kale (University of Illinois at Urbana-Champaign, USA)

Evaluating Implications of Virtual Worlds on Server Architecture using Second Life

Srihari Makineni (Intel Corp., USA); Omesh Tickoo (Intel, USA); Don Newell (Intel Corporation, USA); Jessica Young (Intel Corporation, USA); Aaron Terrell (Linden Lab, USA)

A Performance Prediction Model for the CUDA GPGPU Platform

Kishore Kothapalli (International Institute of Information Technology, India); Rishabh Mukherjee (International Institute of Information technology, Hyderabad, India); Suhail Rehman (International Insitute of Information Technology, India); P. Narayanan (International Institute of Information Technology, India); Kannan Srinathan

(International Institute of Information Technology, India); Suryakant Patidar (International Insitute of Information Technology, India)