Program SPAA 2012

Sunday 24 June

Noon-6:00pm: Trip to Fallingwater
Meet at the Holiday Inn lobby. Extra cost for this event.

7:00-9:00pm: SPAA Reception at the Pittsburgh Athletic Association
This is located almost across the street from the Holiday Inn

Monday 25 June

8:00 Conference Registration Open and Continental Breakfast

9:10-9:20 Opening Remarks

9:20-11:00 Session 1

- 9:20 Time vs. Space Trade-offs for Rendezvous in Trees
  Jurek Czyzowicz, Adrian Kosowski and Andrzej Pelc.

- 9:45 Allowing Each Node to Communicate Only Once in a Distributed System: Shared Whiteboard Models
  Florent Becker, Adrian Kosowski, Nicolas Nisse, Ivan Rapaport and Karol Suchan.

- 10:10 Optimal and Competitive Runtime Bounds for Continuous, Local Gathering of Mobile Robots
  Barbara Kempkes, Peter Kling and Friedhelm Meyer Auf der Heide.

- 10:35 Online Multi-Robot Exploration of Grid Graphs with Rectangular Obstacles
  Christian Ortolf and Christian Schindelhauer.

11:00-11:30 Coffee Break

11:30 Keynote Address
In Search of Parallel Dimensions
Ravi Rajwar.

12:30-2:00 Lunch Break

2:00-3:15 Session 2

- 2:00 Delegation and Nesting in Best Effort Hardware Transactional Memory
  Yujie Liu, Stephan Diestelhorst and Michael Spear.

- 2:25 Design, Verification and Applications of a New Read-Write Lock Algorithm
  Jun Shirako, Nick Vrvilo, Eric Mercer and Vivek Sarkar.

- 2:50 A Lock-Free B+tree
  Anastasia Braginsky and Erez Petrank.

3:15-3:30 Break

3:30-4:20 Brief Announcements 1

- 3:30 The Problem Based Benchmark Suite

- 3:40 Subgraph Isomorphism in a Multithreaded Shared Memory Architecture
  Claire Ralph, Vitus Leung and William McLeod.

- 3:50 Efficient Cache Oblivious Algorithms for Randomized Divide-and-conquer on the Multicore Model
  Neeraj Sharma and Sandeep Sen.

- 4:00 Strong Scaling of Matrix Multiplication Algorithms and Memory-Independent Communication Lower Bounds
  Grey Ballard, James Demmel, Olga Holtz, Benjamin Lipshitz and Oded Schwartz.

- 4:10 On the Complexity of the Minimum Latency Scheduling Problem on the Euclidean Plane
  Henry Lin and Frans Schalekamp.
4:20-4:50     Break
4:50-6:05     Session 3
4:50     Parallel and I/O Efficient Algorithms for Set Covering Problems
Guy Blelloch, Harsha Vardhan Simhadri and Kanat Tangwongsan.
5:15     A Scalable Framework for Heterogeneous GPU-Based Clusters
Fengguang Song and Jack Dongarra.
5:40     Faster and Simpler Width-Independent Parallel Algorithms for Positive Semidefinite Programming
Richard Peng and Kanat Tangwongsan.
7:00-10:00pm Banquet at the Carnegie Museum of Natural History
Requires a ticket.

Tuesday 26 June
8:30-9:20 Continental Breakfast
9:20-11:00 Session 4
9:20     Deterministic Multi-Channel Information Exchange
Stephan Holzer, Thomas Locher, Yvonne-Anne Pignolet and Roger Wattenhofer.
9:45     High-Performance RMA-Based Broadcast on the Intel SCC
Darko Petrovic, Omid Shahmirzadi, Thomas Ropars and Andre Schiper.
10:10    The Impact of the Power Law Exponent on the Behavior of a Dynamic Epidemic Type Process
Adrian Ogierman and Robert Elsaesser.
10:35    Discovery through Gossip
Bernard Haeupler, Gopal Pandurangan, David Peleg, Rajmohan Rajaraman and Zhifeng Sun.
11:00-11:30 Coffee Break
11:30 Keynote Address
Abstraction Failures in Concurrent Programming
Doug Lea.
12:30-2:00 Lunch Break
2:00-3:15 Session 5
2:00     SALSA: Scalable and Low Synchronization NUMA-aware Algorithm for Producer-Consumer Pools
Elad Gidron, Idit Keidar, Dmitri Perelman and Yonathan Perez.
2:25     A Non-Blocking Internal Binary Search Tree
Shane V. Howley and Jeremy Jones.
2:50     Lower Bounds for Restricted-Use Objects
James Aspnes, Hagit Attiya, Keren Censor-Hillel and Danny Hendler.
3:15-3:40     Break
3:40-4:20     Brief Announcements 2
3:40     Towards a Communication Optimal Fast Multipole Method and its Implications at Exascale
Aparna Chandramowlishwaran, Jee Choi, Kamesh Madduri and Richard Vuduc.
3:50     Application-Sensitive QoS Scheduling in Storage Servers
Ahmed Elnably and Peter Varman
4:00     An Efficient GPU Implementation of the Iterative Hill Climbing Based TSP Solver
Kamil Rocki and Reiji Suda.
4:10     Speedups for Parallel Graph Triconnectivity
James Edwards and Uzi Vishkin.
4:20-4:50     Break
4:50-6:05  Session 6
4:50  Communication-Optimal Parallel Algorithm for Strassen's Matrix Multiplication
Grey Ballard, James Demmel, Olga Holtz, Benjamin Lipshitz and Oded Schwartz.
5:15  Parallel Probabilistic Tree Embeddings, k-Median, and Buy-at-Bulk Network Design
Guy Blelloch, Anupam Gupta and Kanat Tangwongsan
5:40  A Parallel Buffer Tree
Nodari Sitchinava and Norbert Zeh

6:30 Business Meeting
At the conference location

Wednesday 27 June

8:30-9:20  Continental Breakfast

9:20-11:00 Session 7
9:20:  A (3/2+epsilon) Approximation Algorithm for Scheduling Malleable and Non-malleable Parallel Tasks
Klaus Jansen.
9:45:  Cache-Conscious Scheduling of Streaming Applications
Kunal Agrawal, Jeremy Fineman, Jordan Krage, Charles Leiserson and Sivan Toledo.
10:10:  Non-clairvoyant Weighted Flow Time Scheduling with Rejection Penalty
Ho-Leung Chan, Sze-Hang Chan, Tak-Wah Lam, Lap-Kei Lee and Jianqiao Zhu.
10:35:  Near-Optimal Scheduling Mechanisms for Deadline-Sensitive Jobs in Large Computing Clusters
Navendu Jain, Ishai Menache, Joseph Naor and Jonathan Yaniv.

11:00-11:30 Coffee Break

11:30-12:20 Session 8
11:30-11:55  Hedonic Clustering Games
Moran Feldman, Liane Lewin-Eytan and Seffi Naor.
11:55-12:20  Enforcing Efficient Equilibria in Network Design Games Via Subsidies
John Augustine, Ioannis Caragiannis, Angelo Fanelli and Christos Kalaitzis.

12:25-2:00 Lunch Break

2:00-3:15 Session 9
2:00  Memory-Mapping Support for Reducer Hyperobjects
I-Ting Lee, Aamir Shafi and Charles Leiserson.
2:25  On the Complexity of Composing Concurrent Algorithms
Dan Alistarh, Rachid Guerraoui, Giuliano Losa and Petr Kuznetsov.
2:50  Greedy Sequential Maximal Independent Set and Matching Are Parallel on Average
Guy Blelloch, Jeremy Fineman and Julian Shun.

3:15-3:30  Break

3:30-4:20  Session 10
3:30  Efficient Computation of Distance Sketches in Distributed Networks
Atish Das Sarma, Michael Dinitz and Gopal Pandurangan.
3:55  Scheduling in Wireless Networks with Rayleigh-Fading Interference
Johannes Dams, Martin Hoefer and Thomas Kesselheim.

Thursday 28 June

8:30-6:00pm  NSF Workshop on Research Directions in the Principles of Parallel Computation.  This is a separate workshop.  Registration is free, but please register online.