SPAA 2015 Program

Friday June 12

5:00-7:00pm: SPAA Reception

Location: Room A107-109, Oregon Convention Center

Saturday June 13

8:45-8:55 Opening Remarks

8:55-10:10 Session 1: Sorting

Chair: Bradley Kuzsmaul

Sorting with Asymmetric Read and Write Costs
Guy E. Blelloch, Jeremy T. Fineman, Phillip B. Gibbons, Yan Gu and Julian Shun

Practical Massively Parallel Sorting
Michael Axtmann, Peter Sanders, Timo Bingmann and Christian Schulz

A Top-Down Parallel Semisort
Yan Gu, Julian Shun, Yihan Sun and Guy Blelloch.

10:10-11:00 Session 2: Caching

Chair: Jeremy Fineman

Matrix Multiplication I/O Complexity by Path Routing
Jacob Scott, Olga Holtz and Oded Schwartz.

Online Caching with Convex Costs
Ishai Menache and Mohit Singh

11:00-11:20 Coffee Break

11:20-12:30 Keynote Address 1: Hans-J Boehm

Chair: Charles E. Leiserson

Myths and Misconceptions about Threads

12:30-2:00 Lunch

2:00 – 3:40 Session 3: Brief Announcements

Chair: Seth Gilbert

New Streaming Algorithms for Parameterized Maximal Matching and Beyond
Rajesh Chitnis, Graham Cormode, Hossein Esfandiari, Mohammadtaghi Hajiaghayi and Morteza Monemizadeh.

Local Computation Algorithms for Graphs with Non-Constant Degrees
Reut Levi, Ronitt Rubinfeld and Anak Yodpinyanee.

Efficient Approximation Algorithms for Computing k Disjoint QoS Paths
Longkun Guo, Kewen Liao, Hong Shen and Peng Li

Fast and Better Distributed MapReduce Algorithms for k-Center Clustering
Sungjin Im and Benjamin Moseley.

Fair Adaptive Parallelism for Concurrent Transactional Memory Applications
Amin Mohtasham and Joao Barreto

Managing Resource Limitation of Best-Effort HTM
Mohamed Mohamedin, Roberto Palmieri, Ahmed Hassan and Binoy Ravindran

On Scheduling Best-Effort HTM Transactions

Mohamed Mohamedin, Roberto Palmieri and Binoy Ravindran

Toward a Universal Approach for the Finite Departure Problem in Overlay Networks
Thim Strothmann, Christian Scheideler and Andreas Koutsopoulos

MultiQueues: Simple Relaxed Concurrent Priority Queues
Hamza Rihani, Peter Sanders and Roman Dementiev

A Compiler-Runtime Application Binary Interface for Pipe-While Loops
Jim Sukha

Hypergraph Partitioning for Parallel Sparse Matrix-Matrix Multiplication
Grey Ballard, Alex Druinsky, Nicholas Knight and Oded Schwartz

3:40-4:00 Coffee Break

4:00-5:40 Session 4: Tools

Chair: Michael Spear

The Cilkprof Scalability Profiler
Tao Schardl, Bradley Kuszmaul, I-Ting Lee, William Leiserson and Charles Leiserson

Race Detection in Two Dimensions
Dimitar Dimitrov, Martin Vechev and Vivek Sarkar

Efficiently Detecting Races in Cilk Programs that Use Reducer Hyperobjects
I-Ting Lee and Tao Schardl.

TheadScan: Automatic, Scalable Memory Reclamation
Dan Alistarh, William Leiserson, Alexander Matveev and Nir Shavit.

5:50-7:00 SPAA Business Meeting

Sunday June 14

8:55-11:00 Session 5: Scheduling

Chair: Tao Schardl

Speed Scaling in the Non-clairvoyant Model
Yossi Azar, Nikhil Devanur, Zhiyi Huang and Debmalya Panigrahi
Best Paper

Cost-Oblivious Reallocation for Scheduling and Planning
Michael Bender, Martin Farach-Colton, Sandor Fekete, Jeremy Fineman and Seth Gilbert

Temporal Fairness of Round Robin: Competitive Analysis for Lk-norms of Flow Time
Sungjin Im, Janardhan Kulkarni and Benjamin Moseley

Scheduling Non-Unit Jobs to Minimize Calibrations
Jeremy Fineman and Brendan Sheridan

Scheduling in Bandwidth Constrained Tree Networks
Sungjin Im and Benjamin Moseley

11:00-11:20 Coffee Break

11:20-12:30 Keynote Address 2: Gary Miller

Chair: Guy Blelloch

The Revolution in Graph Theoretic Optimization Problems

12:30-2:00 Lunch

2:00-3:40 Session 6 Graph Algorithms

Chair: Pierre Fraigniaud

Space and Time Efficient Parallel Graph Decomposition, Clustering, and Diameter Approximation

Matteo Ceccarello, Andrea Pietracaprina, Geppino Pucci and Eli Upfal

Improved Parallel Algorithms for Spanners and Hopsets

Gary Miller, Richard Peng, Adrian Vladu and Shen Chen Xu

Access to Data and Number of Iterations: Dual Primal Algorithms for Maximum Matching Under Resource Constraints

Kook Jin Ahn and Sudipto Guha

Branch Avoiding Graph Algorithms

Oded Green, Marat Dukhan and Richard Vuduc

3:40-4:00 Coffee Break

4:00-5:40 Session 7: Transactional Memory and Concurrent Data Structures

Chair: Jim Sukha

Seer: Probabilistic Scheduling for Hardware Transactional Memory

Nuno Diegues, Stoyan Garbatov and Paolo Romano

Conflict Resolution in Hardware Transactions Using Advisory Locks

Lingxiang Xiang and Michael L. Scott

Transactional Acceleration of Concurrent Datastructures

Yujie Liu, Tingzhe Zhou and Michael Spear

Efficient Memory Management for Lock-Free Datastructures with Optimistic Access

Nachshon Cohen and Erez Petrank

6:00-7:15pm Turing Lecture

8:00-10:00pm Banquet

Location: Red Star at Hotel Monaco

Monday June 15

8:55-11:00 Session 8: Networks, Routing and Communication

Chair: Angelina Lee

Fault Tolerant BFS Structures: A Reinforcement-Backup Tradeoff
Merav Parter and David Peleg

Distributed Backup Placement in Networks
Magnus M. Halldorsson, Sven Köhler, Boaz Patt-Shamir and Dror Rawitz

Better Online Deterministic Packet Routing on Grids
Guy Even, Moti Medina and Boaz Patt-Shamir

Minimizing the Total Weighted Completion time of Coflows in Datacenter Networks
Zhen Qiu, Cliff Stein and Yuan Zhong

Electing a Leader in Wireless Networks Quickly Despite Jamming
Marek Klonowski and Dominik Pajak

11:00-11:20 Coffee Break

11:20-12:30 Plenary Talk

12:30-2:00 Lunch Break

2:00-3:40 Session 9 Parallel and Distributed Algorithms

Chair: Benjamin Moseley

Communication-Efficient Computation on Distributed Noisy Datasets
Qin Zhang

Parallel Computation of Persistent Homology using the Blowup Complex
Ryan Lewis and Dmitriy Morozov.

Self-Stabilizing Repeated Balls-into-Bins
Luca Becchetti, Andrea Clementi, Emanuele Natale, Francesco Pasquale and Gustavo Posta

Randomized Local Network Computing
Laurent Feuillolet and Pierre Fraigniaud