SPAA 2018 Preliminary Schedule

Sunday, July 15
18:00-22:00 Welcome reception

Monday, July 16
8:55-9:05 Opening Remarks
9:05-11:00 Session 1. Graphs. Session chair: Kunal Agrawal
10:37-11:00 Nicholas Harvey, Christopher Liaw, and Paul Liu. Greedy and Local Ratio Algorithms in the MapReduce Model.

11:00-11:30 BREAK
11:30-12:30 Keynote 1. Session chair: Christian Scheideler
Charles E. Leiserson. The Resurgence of Software Performance Engineering

12:30-14:00 LUNCH
14:00-15:09 Session 2a. Matrix and Matrix-Based Algorithms. Session chair: Oded Schwartz
14:00-14:23 Grey Ballard, James Demmel, Laura Grigori, Mathias Jacquelin, and Nicholas Knight. A 3D Parallel Algorithm for QR Decomposition.
*Integrated Model, Batch and Domain Parallelism in Training Neural Networks.*

**15:09-15:36 Session 2b. Brief Announcements.** Session chair: Oded Schwartz
*Brief Announcement: Coloring-based task mapping for Dragonfly systems.*
*Brief Announcement: Parallel Transitive Closure Within 3D Crosspoint Memory.*

**15:36-16:05 BREAK**

**16:05-17:37 Session 3. Concurrent Data Structures.** Session chair: Aydin Buluç
*BQ: A Lock-Free Queue with Batching.*
*An Efficient Wait-free Resizable Hash Table.*
16:51-17:14 Kjell Winblad, Konstantinos Sagonas, and Bengt Jonsson.  
*Lock-free Contention Adapting Search Trees.*
17:14-17:37 Dan Alistarh, Trevor Brown, Justin Kopinsky, Giorgi Nadiradze, and Jerry Li.  
*Distributionally Linearizable Data Structures.*

**18:00-19:00 Business Meeting**

---

**Tuesday, July 17**

**9:05-11:00 Session 4. Distributed Algorithms.** Session chair: Seth Gilbert
*Distributed Domination on Graph Classes of Bounded Expansion.*
Possibilities and Impossibilities for Distributed Subgraph Detection.

Towards a Complexity Theory for the Congested Clique.

Breaking the $\Omega(\sqrt{n})$ Barrier: Fast Consensus under a Late Adversary.

10:37-11:00  Simon Collet and Amos Korman.
Intense Competition can Drive Selfish Explorers to Optimize Coverage.

11:00-11:30  BREAK

11:30-12:30  Keynote 2. Session chair: Guy Blelloch.
David A. Bader. Massive-Scale Streaming Analytics: Models, Parallelsim, and Real-World Applications

12:30-14:00  LUNCH

14:00-14:23  Erik D. Demaine and Quanquan C. Liu.
Red-Blue Pebble Game: Complexity of Computing the Trade-Off between Cache Size and Memory Transfers.
14:23-14:46  Guy Even, Moti Medina and Dror Rawitz.
Online Generalized Caching with Varying Weights and Costs.
14:46-15:09  Andrea Lincoln, Quanquan C. Liu, Jayson Lynch and Helen Xu.
Cache Adaptive Exploration.

15:09-15:18  Leonid Barenboim and Yaniv Tzur.
Brief Announcement: Distributed Symmetry-Breaking with Improved Vertex-Averaged Complexity.
Brief Announcement: Hardware Transactional Persistent Memory.
Brief Announcement: Competitive Routing in Hybrid Communication Networks

15:36-16:05  BREAK

16:05-17:37  Session 6. Non-Volatile Memories. Session chair: TB Schardl
16:05-16:28  Guy Blelloch, Yan Gu, Julian Shun and Yihan Sun.
             Parallel Write-Efficient Geometry Algorithms.
             The Parallel Persistent Memory Model.
             The Inherent Cost of Remembering Consistently.
17:14-17:37  Andreia Correia, Pascal Felber and Pedro Ramalhete.
             Romulus: Efficient Algorithms for Persistent Transactional Memory

17:45-19:30  Guided tour through Vienna inner city (optional)
19:30+       Banquet at the Rathaus

Wednesday, July 18

9:00-10:32  Session 7. Scheduling and Load Balancing. Session Chair: Jeremy Fineman.

9:00-9:23   Nikhil Devanur and Janardhan Kulkarni.
            A Unified Rounding Algorithm For Unrelated Machines Scheduling Problem.

            Online Non-preemptive Scheduling on Unrelated Machines with Rejections.

            The Price of Bounded Preemption.

10:09-10:32 Ori Rottenstreich, Yossi Kanizo, Haim Kaplan and Jennifer Rexford.
            Accurate Traffic Splitting on Commodity Switches.
10:32-11:00  BREAK

11:00-11:46  Session 8a. Parallel Data Structures. Session chair: Julian Shun
11:00-11:23  Wei Quan Lim, Seth Gilbert and Kunal Agrawal. *Parallel Working-Set Search Structures.*

11:46-12:31  Session 8b. Brief Announcements. Session chair: Julian Shun
11:55-12:04  Saurabh Kumar and Samir Khuller.
*Brief Announcement: A Greedy 2 Approximation to the Active Time Problem.*
*Brief Announcement: Open Cilk.*
*Brief Announcement: Stamp-it: A more Thread-efficient, Concurrent Memory Reclamation Scheme in the C++ Memory Model.*
12:22-12:31  Johannes Schäfer and Friedhelm Meyer auf der Heide.
*Brief Announcement: Communication in Systems of Home Based Mobile Agents.*

12:31-14:00  LUNCH

14:00-15:09  Session 9. Online Algorithms. Session chair: Michael Bender
14:00-14:23  Susanne Albers and Jens Quedenfeld. *Optimal Algorithms for Right-Sizing Data Centers.*

15:09-15:45  BREAK
15:45-16:54  **Session 10. Graph and Mesh Computations.** Session chair: Michael Bender

15:45-16:08  (Best Paper) Laxman Dhulipala, Guy Blelloch and Julian Shun.  
*Theoretically Efficient Parallel Graph Algorithms Can Be Fast and Scalable.*

16:08-16:31  Gopal Pandurangan, Peter Robinson and Michele Scquizzato.  
*On the Distributed Complexity of Large-Scale Graph Computations.*

16:31-16:54  Predrag Gruevski, William Hasenplaugh, David Lugato and James Thomas.  
*Laika: Efficient In-Place Scheduling for 3D Mesh Graph Computations.*