

## SPAA 2018 Preliminary Schedule

**Sunday, July 15**

**18:00-22:00**    **Welcome reception**

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**Monday, July 16**

**8:55-9:05**    **Opening Remarks**

**9:05-11:00**    **Session 1. Graphs**

9:05-9:28    Barbara Geissmann and Lukas Gianinazzi.  
*Minimum Cuts in Near-Linear work and Low Depth.*

9:28-9:51    Shirel Attali, Merav Parter, David Peleg, and Shay Solomon.  
*Wireless Expanders.*

9:51-10:14    Harald Räcke, Roy Schwartz, and Richard Stotz.  
*Trees for Vertex Cuts, Hypergraph Cuts and Minimum Hypergraph Bisection.*

10:14-10:37    Haim Kaplan and Shay Solomon.  
*Dynamic Representations of Sparse Distributed Networks: A locality-sensitive approach.*

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:**

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**

14:00-14:23    Grey Ballard, James Demmel, Laura Grigori, Mathias Jacquelin, and Nicholas Knight.  
*A 3D Parallel Algorithm for QR Decomposition.*

14:23-14:46    Ojas Parekh, Cynthia A. Phillips, Conrad D. James, and James B. Aimone.  
*Constant Depth and Subcubic Size Threshold Circuits for Matrix Multiplication.*

14:46-15:09    Amir Gholami, Ariful Azad, Peter Jin, Kurt Keutzer, and

Aydin Buluc.

*Integrated Model, Batch and Domain Parallelism in Training Neural Networks.*

**15:09-15:36 Session 2b. Brief Announcements**

15:09-15:18 Marco Bressan, Enoch Peserico, and Luca Pretto.  
*Brief Announcement: On Approximating PageRank Locally with Sublinear Query Complexity.*

15:18-15:27 Ink Chinavinijkul, Jacob Newcomb, Lingzhi Xi, and David P. Bunde.  
*Brief Announcement: Coloring-based task mapping for Dragonfly systems.*

15:27-15:36 Alvaro Velasquez and Sumit Kumar Jha.  
*Brief Announcement: Parallel Transitive Closure Within 3D Crosspoint Memory.*

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

**16:05-17:37 Session 3. Concurrent Data Structures**

16:05-16:28 Gal Milman, Alex Kogan, Yossi Lev, Victor Luchangco, and Erez Petrank.  
*BQ: A Lock-Free Queue with Batching.*

16:28-16:51 Panagiota Fatourou, Nikolaos D. Kallimanis, and Thomas Ropars.  
*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**

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**Tuesday, July 17**

**9:05-11:00 Session 4. Distributed Algorithms**

9:05-9:28 Saeed Akhoondian Amiri, Patrice Ossona de Mendez, Roman Rabinovich and Sebastian Siebertz.  
*Distributed Domination on Graph Classes of Bounded Expansion.*

9:28-9:51 Orr Fischer, Tzlil Gonen, Fabian Kuhn and Rotem

- Oshman.  
*Possibilities and Impossibilities for Distributed Subgraph Detection.*
- 9:51-10:14 Janne H. Korhonen and Jukka Suomela.  
*Towards a Complexity Theory for the Congested Clique.*
- 10:14-10:37 Peter Robinson, Christian Scheideler and Alexander Setzer.  
*Breaking the  $\Omega(vn)$  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:**  
David A. Bader. *Massive-Scale Streaming Analytics: Models, Parallelsim, and Real-World Applications*
- 12:30-14:00 LUNCH**
- 14:00-15:09 Session 5a. Caching**
- 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.*
- 15:09-15:36 Session 5b. Brief Announcements**
- 15:09-15:18 Leonid Barenboim and Yaniv Tzur.  
*Brief Announcement: Distributed Symmetry-Breaking with Improved Vertex-Averaged Complexity.*
- 15:18-15:27 Ellis Giles, Kshitij Doshi, and Peter Varman.  
*Brief Announcement: Hardware Transactional Persistent Memory.*
- 15:27-15:36 Christina Kolb, Daniel Jung, Jannik Sundermeier, and Christian Scheideler.  
*Brief Announcement: Competitive Routing in Hybrid Communication Networks*

- 15:36-16:05**      **BREAK**
- 16:05-17:37**      **Session 6. Non-Volatile Memories**
- 16:05-16:28      Guy Blelloch, Yan Gu, Julian Shun and Yihan Sun.  
*Parallel Write-Efficient Geometry Algorithms.*
- 16:28-16:51      Guy E. Blelloch, Phillip B. Gibbons, Yan Gu, Charles McGuffey and Julian Shun.  
*The Parallel Persistent Memory Model.*
- 16:51-17:14      Nachshon Cohen, Rachid Guerraoui and Igor Zablotchi.  
*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
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**Wednesday, July 18**

- 9:00-10:32**      **Session 7. Scheduling and Load Balancing**
- 9:00-9:23        Nikhil Devanur and Janardhan Kulkarni.  
*A Unified Rounding Algorithm For Unrelated Machines Scheduling Problem.*
- 9:23-9:46        Giorgio Lucarelli, Benjamin Moseley, Nguyen Kim Thang, Abhinav Srivastav and Denis Trystram.  
*Online Non-preemptive Scheduling on Unrelated Machines with Rejections.*
- 9:46-10:09      Noga Alon, Yossi Azar and Mark Berlin.  
*The Price of Bounded Preemption.*
- 10:09-10:32    Ori Rottenstreich, Yossi Kanizo, Haim Kaplan and Jennifer Rexford.  
*Accurate Traffic Splitting on Commodity Switches.*
- 11:32-11:00**      **BREAK**
- 11:00-11:46**      **Session 8a. Parallel Data Structures**
- 11:00-11:23      Wei Quan Lim, Seth Gilbert and Kunal Agrawal.  
*Parallel Working-Set Search Structures.*
- 11:23-11:46      Tsvi Kopelowitz, Ely Porat and Yair Rosenmutter.  
*Improved Worst-Case Deterministic Parallel Dynamic*

*Minimum Spanning Forest.*

**11:46-12:31      Session 8b. Brief Announcements**

11:46-11:55 Kanthi Sarpatwar, Baruch Schieber, and Hadas Shachnai.

*Brief Announcement: Approximation Algorithms for Preemptive Resource Allocation.*

11:55-12:04 Saurabh Kumar and Samir Khuller.

*Brief Announcement: A Greedy 2 Approximation to the Active Time Problem.*

12:04-12:13 Tao B. Schardl, I-Ting Angelina Lee, and Charles E. Leiserson.

*Brief Announcement: Open Cilk.*

12:13-12:22 Manuel Pöter and Jesper Larsson Träff.

*Brief Announcement: Stamp-it: A more Thread-efficient, Concurrent Memory Reclamation Scheme in the C++ Memory Model.*

12:22-12:31 Johannes Schaefer 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**

14:00-14:23 Susanne Albers and Jens Quedenfeld.

*Optimal Algorithms for Right-Sizing Data Centers.*

14:23-14:46 Björn Feldkord and Friedhelm Meyer auf der Heide.

*Online Facility Location with Mobile Facilities.*

14:46-15:09 Dan Alistarh, Syed Kamran Haider, Raphael Kübler and Giorgi Nadiradze.

*The Transactional Conflict Problem.*

**15:09-15:45      BREAK**

**15:45-16:54      Session 10. Graph and Mesh Computations**

15:45-16:08 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 Squizzato.

*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.*