

# Dagstuhl Seminar on Scalable Data Structures (25191)

## Organizers

- Michael A. Bender (Stony Brook University, US)
- John Iacono (ULB - Brussels, BE)
- László Kozma (FU Berlin, DE)
- Eva Rotenberg (Technical University of Denmark - Lyngby, DK)

## SUNDAY (May 4)

18:00 Dinner buffet

## MONDAY (May 5)

07:30 Breakfast

09:00 Opening & Introductions (1-slide / 1.5-minutes per participant)

09:45 Coffee break

10:30 Short presentations (10-15 minutes max)

- Philip Bille, Ultrawide word ram
- Ulrich Meyer, Utilizing latency on parallel operations on SSDs,
- Alex Conway, History independent priority queues
- Valerie King, Distributed collaboration to share the cost of obtaining external data, even when the fraction of Byzantine players is large
- Gonzalo Navarro, Dynamic representation of bitvectors
- John Iacono, working set heaps with decrease-key
- Gerth Stølting Brodal, Simple Data Structures with Slightly Worse Bounds
- Stefan Walzer, A proper Analysis of “A Fast Relaxed FIFO Queue”

12:15 Lunch

14:00 Medium presentations (20-25 mins each + 5 questions)

- Or Zamir, Improved Runtimes using Cryptography
- Nicole Wein, Covering Approximate Shortest Paths with DAGs
- Quanquan Liu, Monte Carlo Batch-Dynamic Connectivity

15:30 Coffee & Cake

16:00 Collaboration time / Nap time / Email Time

18:00 Dinner

## TUESDAY (May 6)

07:30 Breakfast

09:00 Short presentations (10-15 minutes max)

- Peyman Afshani, Separations between I/O and Work
- J Ian Munro, Minimizing Cache Misses with Repeated Data
- Ivor van der Hoog, Greedy chain decomposition on DAGs
- Bob Tarjan, On the recurrence in *Top-down analysis of path compression* by Seidel and Sharir

- Pawel Gawrychowski. Two problems on Lempel-Ziv compression
- Mike Goodrich, Computational geometry with probabilistically noisy primitive errors

10:30 Coffee break

11:00 Medium presentations (20-25 mins each + 5 questions)

- Bob Sedgwick, Cardinality Estimation, A Poster Child for Algorithm Science
- William Kuszmaul, Quadratic probing hash tables

12:15 Lunch

13:30 Collaboration time

15:30 Coffee & Cake and status update: What have people been discussing?

18:00 Dinner

## WEDNESDAY (May 7)

07:30 Breakfast

09:00 Short presentations

- Martin Farach-Colton. Detecting collisions in Karp-Rabin fingerprinting
- Kunal Agrawal. Scheduling parallel jobs with a DAG of constraints
- Sabine Storandt. Some intersection problems.

10:15 Coffee break

10:45 Short presentations

- Shiri Chechik, Maximum independent set in the congested clique model.
- Davide Bilo, Single-source shortest p-disjoint paths; Fast computation and sparse preservers
- Joachim Gudmundsson, Approximate distance oracles for lambda-low density graphs

12:00 Group picture

12:15 Lunch

14:00 Hike

15:30 Coffee & Cake

18:00 Dinner

## THURSDAY (May 8)

07:30 Breakfast

09:00 Meet in seminar room

- Jeremy Fineman, Incremental topological sort
- Gonzalo Navarro, A graph problem with applications to grammar compression
- Ioana Oriana Bercea, Oracles for Bloom filters with predictions
- László Kozma, Selection

10:30 Coffee break

11:00 Collaboration time

12:15 Lunch

13:30 Collaboration time

15:30 Coffee & Cake and status update: What have people been discussing?

18:00 Dinner

## FRIDAY (May 9)

07:30 Breakfast

09:00 Check-out

09:00 Wrap-up session: what were the outcomes of discussions and directions to continue in the future?

9:20 William Kuszmaul, Progress on history independent heaps

10:30 Coffee break

11:00 Discussions

12:15 Lunch