27th International Symposium on Distributed Computing
DISC 2013
October 14-18, 2013, Jerusalem, Israel
Program (including tutorials & workshops)

Monday, October 14, 2013

★ 1st Workshop on Biological Distributed Algorithms (BDA)

8:30am — Welcome Remarks

Session 1. Chair: Yuval Emek

8:35-9:05am  [Invited talk]: “Executable Biology: Successes and Challenges”. J. Fisher (Microsoft Research UK and Univ. of Cambridge.)

9:05-9:30am  [Contributed talk]: “Firefly Synchronization with Asynchronous Wake-up” D. Alistarh (USA, MIT), A. Cornejo (USA, Harvard), M. Ghaffari (USA, MIT), and N. Lynch (United States, MIT).

9:30-10:00  [Invited talk]: “Synaptic Pruning: An Algorithmic Perspective” S. Navlakha (USA, CMU).

10:00-10:30  [Invited talk]: “Integrating Theoretical Algorithmic Ideas in Empirical Biological Study” A. Korman (France, CNRS and Univ. of Paris Diderot)

10:30-11:00 — Break

Session 2. Chair: Amos Korman

11:00-11:30  [Invited talk]: “Fighting noise with limited resources: an ant colony perspective” O. Feinerman (Israel, Weizmann Institute).

11:30-12:00  [Invited talk]: “Robust computing over networks : Lessons from nature” Z. Bar-Joseph (USA, CMU).

12:00-12:25  [Contributed talk]: “The Power of Pheromones in Ant Foraging” C. Lenzen (USA, CSAIL MIT) and T. Radeva (USA, CSAIL MIT).
12:25-12:55 [Invited talk]: “Distributed computing on the (fruit) fly”
Y. Emek (Zurich, ETH).

12:55-14:30 — Lunch break

Session 3: Chair Ziv Bar-Joseph

14:30-15:20 [Keynote]: “Evolutionary tradeoffs and the geometry of phenotype space”
U. Alon (Israel, Weizmann Institute).

15:20-15:45 [Contributed talk]: “Ameba-inspired Self-organizing Particle Systems”
S. Dolev (Israel, Ben-Gurion Univ.), R. Gmyr (Germany, Univ. of Paderborn), A.W. Richa (USA, Arizona State Univ.), and C. Scheideler (Germany, Univ. of Paderborn).

15:45-15:50 Closing remarks

★ 2nd Workshop on Advances on Distributed Graph Algorithms (ADGA)

8:30am-9:30pm Christoph Lenzen
Distributed Algorithms on a Congested Clique

9:30am-10:30pm Rotem Oshman
Communication Complexity and Graph Algorithms

10:30am-11:00am Break

11:00am-12:00am Michael Elkin
Distributed Algorithms for Graph Coloring

12:00am-1:00pm Thomas Sauerwald
Distributed Load Balancing on Graphs

1:00pm-2:30pm Lunch

2:30pm-3:30pm Danny Dolev
Distributed Graph Algorithms and Very Large Scale Integrated Circuits

★ 5th Workshop on the Theory of Transactional Memory
TransForm/EuroTM (WTTM 2013)

09:05-9:10 Welcome

09:10-9:45 Keynote: Hagit Attiya
A Programming Language Perspective on Transactional Memory Consistency
Session: TM Semantics
9:45-10:00  Mohsen Lesani and Jens Palsberg
Write-observation and Read-preservation TM Correctness Invariants
10:00-10:15  Mohsen Lesani, Victor Luchangco and Mark Moir
Specifying Transactional Memories with Nontransactional Operations
10:00-10:15  Wenjia Ruan, Yujie Liu and Michael Spear
On the Relationship Between Delaying Operators and Language-Level Semantics

10:30-11:00  Coffee Break

11:00-11:35  Keynote: Danny Hendler
STM contention management: from multiprocessors to distributed systems
11:35-12:10  Keynote: Costas Busch
Transactional memory schedulers for diverse distributed computing environment

Session: Contention Management: From multiprocessor to distributed TMs
12:10-12:35  Christopher Rossbach and Jean-Philippe Martin
Distributed Optimistic Concurrency Considered Optimistic
12:35-13:00  Shlomi Dolev, Panagiota Fatourou and Eleftherios Kosmas
Abort Free SemanticTM by Dependency Aware Scheduling of Transactional Instructions

13:00-14:30  Lunch break

14:30-15:05  Keynote: Michel Raynal
Hybrid implementations of concurrent objects

Session: Hybrid TM
15:05-15:20  Alex Matveev and Nir Shavit
Reduced Hardware Transactions: A Hybrid NOREC
15:20-15:35  Lingxiang Xiang and Michael Scott
Composable Partitioned Transactions

15:35-16:00  Coffee Break

Session: Parallelism
16:00-16:15  Victor Bushkov, Dmytro Dzjuma, Panagiota Fatourou and Rachid Guerraoui
Snapshot Isolation Does Not Scale Either
16:15-16:30  Faith Ellen, Panagiota Fatourou, Eleftherios Kosmas, Alessia Milani and Corentin Travers
Wait-Free Universal Constructions that ensure Timestamp-Ignoring Disjoint-Access Parallelism

Session: Multiversion Transactional Memories

16:30-16:45  Nuno Diegues and Paolo Romano
Input Acceptance of Time-Warping Transactional Memory

16:45-17:00  Priyanka Kumar and Sathya Peri
Multiversion Conflict Notion

Monday, October 14, 2013  DISC Welcome

16:00-18:00  Tutorial: The Evolution of SDN and How Your Network Is Changing
              Teemu Kopenen, VMware

18:00-18:30  Uri Alon - "Love and Fear in the Lab" - a guitar and discussion session.

18:00-20:00  DISC Welcome Reception

Tuesday, October 15, 2013  DISC Day One

8:30-10:25  Session 1a: Invited Lecture
            Session Chair: Yehuda Afek

8:30-8:35  Opening remarks
           Adventures in Parallel Dimensions
9:35-10:00  Mohsen Ghaffari and Fabian Kuhn. (Best Paper)
            Distributed Minimum Cut Approximation
10:00-10:25  David Woodruff and Qin Zhang.
            When Distributed Computation is Communication Expensive
10:25-10:45  Break

10:45-12:57  Session 1b: Topology, Leader Election, and Spanning Trees
            Session Chair: Michael Elkin

10:45-11:10  Emanuele Guido Fusco, Andrzej Pelc and Rossella Petreschi
             Use knowledge to learn faster: Topology recognition with advice
11:10-11:35  George Giakkoupis, Maryam Helmi, Lisa Higham and Philipp Woelfel
             An $O(\sqrt{n})$ Space Bound for Obstruction-Free Leader Election
11:35-12:00  Ittai Abraham, Danny Dolev and Joseph Halpern
             Distributed Protocols for Leader Election: a Game-Theoretic Perspective
12:00-12:25  Lélia Blin and Sébastien Tixeuil
Compact Deterministic Self-Stabilizing Leader Election: The Exponential Advantage of Being Talkative
12:25 - 12:50 Alex Kravchik and Shay Kutten
Time Optimal Synchronous Self Stabilizing Spanning Tree
12:50 - 12:57 Brief Announcement: Chen Avin, Michael Borokhovich, Zvi Lotker and David Peleg.
Distributed MST in Core-Periphery Networks

13:00 - 14:15 Lunch
14:15 - 16:55 Session 1c: Software Transactional Memory
Session Chair: Victor Luchangco
14:15 - 14:40 Mohsen Lesani and Jens Palsberg
Proving Non-opacity
14:40 - 15:05 Danny Hendler, Alex Naiman, Sebastiano Peluso, Francesco Quaglia, Paolo Romano and Adi Suissa
Exploiting Locality in Lease-Based Replicated Transactional Memory via Task Migration
15:05 - 15:30 Li Lu and Michael L. Scott
Generic Multiversion STM
15:30 - 15:55 Nuno Diegues and João Cachopo
Practical Parallel Nesting for Software Transactional Memory
16:55 - 16:10 Brief Announcements:
• Nuno Diegues and Paolo Romano.
  Time-warp: lightweight abort minimization in Transactional Memory
• Nhan Nguyen, Philippas Tsigas and Håkan Sundell.
  ParMarkSplit: A Parallel Mark-Split Garbage Collector Based on a Lock-Free Skip-List

16:10 - 16:30 Coffee Break
16:30 - 17:41 Session 1d: Shared Memory Executions
Session Chair: Michel Raynal
16:30 - 16:55 Sagar Chordia, Sriram Rajamani, Kaushik Rajan, Ganesan Ramalingam and Kapil Vaswani
Asynchronous Resilient Linearizability
16:55 - 17:20 Gadi Taubenfeld
Fair Synchronization
17:20 - 17:41 Brief Announcements:
• Hammurabi Mendes, Maurice Herlihy and Christine Tasson
  The Topology of Asynchronous Byzantine Colorless Tasks
• Carlos Gómez-Calzado, Alberto Lafuente, Mikel Larrea and Michel Raynal
  Revisiting Dynamic Distributed Systems
• Sergio Rajsbaum, Michel Raynal and Julien Stainer
  What Can Be Computed in the Presence of Concurrent Solo Executions

17:41 - 18:00 Happy hour
18:00-19:45 DISC 2013 Business Meeting

Wednesday, October 16, 2013 DISC Day Two

8:30-10:20 Session 2a: Dijkstra Prize Ceremony and Invited Lecture;
Session Chair: Gadi Taubenfeld
8:30-9:30 Dijkstra Prize Ceremony.
Simplicial complexes - Much more than a trick for concurrent computation lower bounds
9:30-9:55 George Giakkoupis, Anne-Marie Kermarrec and Philipp Woelfel
Gossip Protocols for Renaming and Sorting
9:55-10:20 Chen Avin and Robert Elsässer
Faster Rumor Spreading: Breaking the log n Barrier
10:20-10:40 Break
10:40-13:00 Session 2b: Shared Memory Tasks and Data Structures
Session Chair: Dan Alistarh
10:40-11:05 Erez Petrank and Shahar Timnat. (Best Student Paper)
Lock-Free Data Structure Iterators
11:05-11:30 Kunlong Zhang, Yujiao Zhao, Yajun Yang, Yujie Liu and Michael Spear.
Practical Non-blocking Unordered Lists
Atomic snapshots in expected $O(\log^3 n)$ steps using randomized helping
Adaptive Register-Allocation with a linear number of registers
12:20-12:45 Faith Ellen and Philipp Woelfel.
An Optimal Implementation of Fetch-and-Increment
12:45-13:00 Brief Announcements:
• Aravind Natarajan and Neeraj Mittal.
  A Concurrent Lock-Free Red-Black Tree
• Trevor Brown, Faith Ellen and Eric Ruppert.
  A General Technique for Non-blocking Trees

13:00-14:20 Lunch
14:20-15:05 Session 2c: Replication and Consensus
Session Chair: Rotem Oshman
14:20-14:45 Flavio Junqueira and Marco Serafini
On barriers and the gap between active and passive replication
14:45-15:05 Brief Announcements:
• Danny Dolev and Christoph Lenzen.
Silence is Golden: Communication-Efficient Consensus Without a Common Clock

- Gregory Chockler, Dan Dobre and Alexander Shraer
  Consistency and Complexity Tradeoffs for Highly-Available Multi-Cloud Store
- Christian Cachin, Dan Dobre and Marko Vukolić. BFT Storage with 2t+1 Data Replicas

15:05- 15:30 Coffee break

15:30- 19:30 Excursion: Old City of Jerusalem Sight Seeing

19:30-22:30 DISC 2013 Banquet and award ceremony

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**Thursday, October 17, 2013**

**DISC Day Three**

**8:30-10:10** **Session 3a: Wireless networks**

*Session Chair: Chen Avin*

8:30- 8:55  Bojun Huang and Thomas Moscibroda
  Conflict Resolution and Membership Problem in Beeping Channels

8:55- 9:20  Yuval Emek and Roger Wattenhofer
  Frequency Hopping against a Powerful Adversary

9:20- 9:45  Johannes Dams, Martin Hoefer and Thomas Kesselheim
  Sleeping Experts in Wireless Networks

9:45- 10:10 Sebastian Daum, Seth Gilbert, Tomasz Jurdzinski, Dariusz Kowalski, Fabian Kuhn, Calvin Newport, Grzegorz Stachowiak and Michal Rozanski
  Distributed Broadcast in SINR Models

10:10- 10:30 Break

**10:30- 12:56** **Session 3b: Crypto, Trust and Influence**

*Session Chair: Dahlia Malkhi*

10:30- 10:55 Ashish Choudhury, Martin Hirt and Arpita Patra
  Unconditionally Secure Asynchronous Multiparty Computation with Linear Communication Complexity

10:55- 11:20 Paul Bunn and Rafail Ostrovsky
  Secure End-to-End Communication with Optimal Throughput and Resilient Against Malicious Adversary
11:20- 11:45 Cyril Gavoille, Christian Glacet, Nicolas Hanusse and David Ilcinkas
On the Communication Complexity of Distributed Name-Independent Routing Schemes

11:45- 12:10 Silvio Frischknecht, Barbara Keller and Roger Wattenhofer
Convergence in (Social) Influence Networks

12:10- 12:35 Olivier Bournez, Jonas Lefèvre and Mikael Rabie
On trustful population protocols

12:35- 12:56 Brief Announcements:
- Faith Ellen, Rotem Oshman, Toni Pitassi and Vinod Vaikuntanathan
  Private-Channel Models in Multi-Party Communication Complexity
- Cédric Auger, Zohir Bouzid, Pierre Courtieu, Sébastien Tixeuil and Xavier Urbain
  Certified impossibility results for Byzantine-tolerant mobile robots
- Yonina Eldar, Idit Keidar and Stacy Patterson
  Distributed Compressed Sensing for Sensor Networks

12:56- 14:00 Lunch

14:00-15:40 Session 3c: Networking I
Session Chair: Dmitri Perelman

14:00- 14:25 Erez Kantor, Israel Cidon and Shay Kutten
Prudent Opportunistic Cognitive Radio Access Protocols

14:25- 14:50 Michael Dinitz and Merav Parter
Braess's Paradox in Wireless Networks: The Danger of Improved Technology

14:50- 15:15 Mohsen Ghaffari and Bernhard Haeupler
Fast Structuring of Radio Networks for Multi-Message Communications

15:15- 15:40 Ittay Eyal, Idit Keidar, Stacy Patterson and Raphael Rom
In-Network Analytics for Ubiquitous Sensing

15:40- 16:00 Break

16:00- 17:05 Session 3d: Networking II
Session Chair: Yuval Emek

16:00- 16:25 James Hegeman and Sriram Pemmaraju
A Super-Fast Distributed Algorithm for Bipartite Metric Facility Location

16:25- 16:50 Sebastian Kniesburges, Andreas Koutsopoulos and Christian Scheideler
CONE-DHT: A distributed self-stabilizing algorithm for a heterogeneous storage system

16:50- 17:05 Brief Announcements:
- Marco Canini, Petr Kuznetsov, Dan Levin and Stefan Schmid.
  Towards Distributed and Reliable Software Defined Networking
- Marcin Bienkowski, Nadi Sarrar, Stefan Schmid and Steve Uhlig.
  Dynamic Forwarding Table Aggregation without Update Churn: The Case of Dependent Prefixes

17:05- 17:30 Break

★ 17:30- 19:00 DISC Event on Networking

17:30-17:40: Welcome Remarks
17:40-18:10: Resource Placement Under Stochastic Demands in Networked Topologies  
Hanoch Levy, Tel Aviv University
Yaron Koral, Tel Aviv University and the Hebrew University
Michael Schapira, the Hebrew University

Thursday & Friday, October 17/18, 2013  Workshops & Tutorials

★ 9th International Workshop on Foundations of Mobile Computing (FOMC)

Thursday, October 17
5:00-7:00  TBA

Friday, October 18
8:30-13:00  TBA

★ 5th Workshop on Theoretical Aspects of Dynamic Distributed Systems (TADDS)

Friday, October 18
8:30-8:35  Welcome & Opening
8:35-9:20  Merav Parter  
Computing on Anonymous Dynamic Networks
9:20-10:05  Sébastien Tixeuil  
Quantitative evaluation of self-stabilizing algorithms using probabilist model-checking and simulation.
10:05-10:25  Coffee Break
10:25-11:10  Stefan Schmid  
Self-stabilizing and self-optimizing distributed datastructures
11:10-11:55  Roberto Baldoni  
Computing on Anonymous Dynamic Networks
12:55-12:15  Coffee Break
12:15-13:00  Shay Kutten  
Title: To be announced