

**27th International Symposium on Distributed Computing****DISC 2013****October 14-18, 2013, Jerusalem, Israel****Program (including tutorials & workshops)****Monday, October 14, 2013****Workshops****★ 1<sup>st</sup> 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

### ★ 2<sup>nd</sup> 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*

### ★ 5<sup>th</sup> 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 Dziurma, 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 Notio

<b>Monday, October 14, 2013</b>	<b>DISC Welcome</b>
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**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.**

**18:30- 20:00** ***DISC Welcome Reception***

<b>Tuesday, October 15, 2013</b>	<b>DISC Day One</b>
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**8:30-10:25** ***Session 1a: Invited Lecture***

*Session Chair: Yehuda Afek*

8:30-8:35 Opening remarks

8:35-9:35 Invited Lecture: **Ravi Rajwar, Intel Corporation.**

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- 16:10 **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
- 15:55- 16:10 **Brief Announcements:**
- Nuno Diegues and Paolo Romano.  
Time-warp: lightweight abort minimization in Transactional Memory
  - Nhan Nguyen, Philippos 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.*
- 8:45- 9:30** *Invited Lecture:* Nati Linial, The Hebrew University.  
*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
- 11:30- 11:55 James Aspnes and Keren Censor-Hillel.  
Atomic snapshots in expected  $O(\log^3 n)$  steps using randomized helping
- 11:55- 12:20 Carole Delporte-Gallet, Hugues Fauconnier, Eli Gafni and Leslie Lamport.  
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**

<b>Thursday, October 17, 2013</b>	<b>DISC Day Three</b>
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- 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
- 18:10-18:40: Efficient multi-pattern matching on Compressed HTTP traffic.  
Yaron Koral, Tel Aviv University and the Hebrew University
- 18:40-19:10: Some Open Questions on the Borderline of Networking and Distributed Computing.  
Michael Schapira, the Hebrew University

<b>Thursday &amp; Friday, October 17/18, 2013</b>	<b>Workshops &amp; Tutorials</b>
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★ **9<sup>th</sup> International Workshop on Foundations of Mobile Computing (FOMC)**

*Thursday, October 17*

**5:00- 7:00 TBA**

*Friday, October 18*

**8:30- 13:00 TBA**

★ **5<sup>th</sup> 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