

# Idit Keidar – Curriculum Vitae

Viterbi Faculty of Electrical Engineering, Technion

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## Academic Degrees

<b>Ph.D.</b>	Computer Science, Hebrew University of Jerusalem	1998
<b>M.Sc.</b>	Computer Science, Hebrew University, <i>Summa cum laude</i>	1994
<b>B.Sc.</b>	Computer Science and Mathematics, Hebrew University, <i>Summa cum laude</i>	1992

## Employment

### Academic

Technion Faculty of Elect. Eng.	Lord Leonard Wolfson Academic Chair	May 2017 – current
	Professor (with Tenure)	Dec 2012 – current
	Associate Professor with Tenure	Apr 2007 – Nov 2012
	Senior Lecturer	Mar 2002 – Mar 2007
MIT Lab for Comp. Science	Postdoctoral Research Associate	Oct 1998 – Jul 2002
Hebrew University, Comp. Science	Teaching and Research Assistant	Oct 1992 – Oct 1998
Cornell University, Comp. Science	Visiting Professor	summer 2009

### Industry

Orbs	Advisory Board Member	Jan 2018 – current
Yahoo Labs (now part of Verizon)	Visiting Research Scientist	Mar 2014 – current
Kaminario	Advisory Board Member	Jul 2012 – current
	Consultant	Jul 2012 – Jul 2013
Microsoft Research Silicon Valley	Consulting Researcher	summer 2006
BBN Technologies (Verizon)	Consultant	Mar 2002 – Aug 2002
IBM Almaden Research Center	Summer Visitor	summer 1996

### Military and Social Service

Israel Defense Forces	Officer, Programmer, Project Leader	Sep 1986 – Aug 1990
Israeli Scouts	Social Service Volunteer	Sep 1985 – Aug 1986

## Graduate Students and Postdocs Supervised

### Postdocs – Past

1. *Rui Fan*, Oct 2009 – Oct 2010. Associate Professor at *ShanghaiTech University*.
2. *Mark Silberstein*, Mar 2010 - Oct 2011. Associate Professor at *Technion*.
3. *Stacy Patterson*, Oct 2011 - Sep 2013. Assistant Professor at Rensselaer Polytechnic Institute (*RPI*).

**Ph.D. Students – Graduated**

4. *Roger Khazan*, MIT, Jun 2002, co-supervised with Nancy Lynch. First position: Senior Research Staff Member at *MIT Lincoln Laboratory*.
5. *Roie Melamed*, (direct Ph.D.), Technion, Jul 2006. First position: Research Staff Member at *IBM Research Haifa Labs*.
6. *Gal Badishi*, (direct Ph.D.), Technion, Oct 2007. Chief Scientist at *Cyvera*. First position at *Rupin College*.
7. *Edward Bortnikov*, Technion, Aug 2008, co-supervised with Israel Cidon. Director of Research at *Yahoo! Research, Oath*.
8. *Maxim Gurevich*, Technion, Jan 2010, co-supervised with Ziv Bar-Yossef. First position at *Yahoo! Labs*; continued as Researcher at *Google* and *Yahoo*.
9. *Alexander Shraer*, Technion, Sep 2010. First position at *Yahoo! Labs*; continued at *Google* and *Apple*.
10. *Zvika Guz*, (direct Ph.D.), Technion, Oct 2010, co-supervised with Uri Weiser and Avinoam Kolodny. First position: Research Scientist at *Nvidia Research*. Continued to *Samsung Research*.
11. *Dmitri Perelman*, (direct Ph.D.), Technion, Aug 2012. First position at *Facebook*.
12. *Ittay Eyal*, (direct Ph.D.), Technion May 2013, co-supervised with Raphael Rom. First position: Postdoc at *Cornell University*; Assistant Professor at Technion EE department.
13. *Kfir Lev-Ari*, (direct Ph.D.), Technion Aug 2017. At *Apple*.
14. *Naama Kraus*, Technion Oct 2017, co-supervised with David Carmel. At *Microsoft*.
15. *Alexander (Sasha) Spiegelman*, (direct Ph.D.), Technion Jul 2018. At *Novi*.
16. *Noam Shalev*, (direct Ph.D.), Technion Aug 2018. At *Cornell-Tech*.

**Masters Students – Graduated**

17. *Kyle Ingols*, M.Eng., MIT, May 2000.
18. *Igor Tarashchanskiy*, M.Eng., MIT, Aug 2000.
19. *Omar Bakr*, M.Eng., MIT, Feb 2003. Received a Ph.D. from the *University of California, Berkeley*, co-founder at Tarana Wireless, Inc.
20. *Amir Sasson*, M.Sc., Technion, May 2004.
21. *Nadav Lavi*, M.Sc., Technion, May 2005, with Israel Cidon.
22. *Alexander Shraer*, M.Sc., Technion, May 2006.
23. *Uri Schonfeld*, M.Sc., Technion, Jun 2006, with Ziv Bar-Yossef. Received a Ph.D. at *UCLA*.
24. *Ehud Shavit*, M.Sc., Technion, Jul 2007, with Israel Cidon.
25. *Roman Gindin*, M.Sc., Technion, Jul 2007, with Israel Cidon.
26. *Oleg Romanov*, M.Sc., Technion, Aug 2008.
27. *Alex Friedman*, M.Sc., Technion, Mar 2009.
28. *Amit Berman*, M.Sc., Technion, Feb 2010. Received a Ph.D. at the Technion.
29. *Dmitry Basin*, M.Sc., Technion, Nov 2011. At *Yahoo Research*.
30. *Liat Atsmon*, M.Sc., Technion, Jul 2012.
31. *Elad Gidron*, M.Sc., Technion, Aug 2012. At *Google*.
32. *Oved Itzhak*, M.Sc., Technion, Aug 2013, with Uri Weiser and Avinoam Kolodny.
33. *Meni Orenbach*, M.Sc., Technion, Apr 2015. Continued for Ph.D. at the Technion.
34. *Dani Shaket*, M.Sc., Technion, Apr 2018. At *Amazon*.
35. *Hagar Meir (Porat)*, M.Sc., Technion, Jan 2019. At *IBM*.
36. *Alon Berger*, M.Sc., Technion, Mar 2019. At *Vast Data*.

**Ph.D. Students – Current**

37. *Arik Rinberg.*
38. *Gal Assa.*
39. *Oded Naor.*
40. *Shir Cohen.*

**Masters Students – Current**

41. *Avi Asayag.*

## Selected Professional Activity

**Journals**

**Associate Editor** IEEE Computer Architecture Letters (CAL), 2012–2016.

**Guest Editor** Springer Distributed Computing, Volume 24, Numbers 3–4, Nov 2011, special issue with selected papers from DISC 2009.

**Columnist (Column Editor)** ACM SIGACT News Distributed Computing Column, Aug 2007 – Sep 2013.

**Referee**

Journal of the ACM (JACM); The SIAM Journal on Computing (SICOMP); ACM Transactions on Computer Systems (TOCS); Theoretical Computer Science (TCS); Journal of Algorithms; Springer Distributed Computing; IEEE Transactions on Parallel and Distributed Systems (TPDS); IEEE Transactions on Computers; IEEE Journal on Selected Areas in Communications (JSAC); Journal of Computer and Systems Science (JCSS); Journal of Parallel and Distributed Computing (JPDC); Springer World Wide Web Journal; Information Processing Letters (IPL); Parallel Processing Letters (PPL).

**Conferences****Program Committee Chair or Co-Chair**

Chair, DISC, Sep 2009; Proceedings Editor, LNCS Volume 5805.  
Co-Chair, 5th Annual Henry Taub International TCE Conference, 2015; co-chair: Eran Yahav.  
Co-Chair, Int'l Systems and Storage Conf. (SYSTOR), 2015; co-chair: Gernot Heiser.  
Co-Chair, TRANSACT/WTTM 2017; co-chair: Aleksandar Dragojevic.  
Chair, 37th ACM Symp. on Prin. of Distributed Computing (PODC), Jul 2018.  
Chair, 24th ACM SIGPLAN Symp. on Prin. and Practice of Parallel Programming (PPoPP), 2019.

**Organizing Committee Co-Chair** Int'l Symp. on DIStributed Computing (DISC) 2013.

**Steering Committee Member**

Member-at-Large, ACM Symp. on Principles of Distributed Computing (PODC), Jul 2003 – Jul 2006.  
Member, Int'l Symp. on DIStributed Computing (DISC), Sep 2008 – Sep 2011.  
Member, IEEE/IFIP Int'l Conf. on Dependable Systems and Networks (DSN) and IEEE Technical Committee for Dependability and Fault Tolerance Executive Committee, Jan 2011 – Dec 2012.  
Member, ACM Symp. on Principles of Distributed Computing (PODC), Jul 2017 – Jul 2020.  
Member, ACM Symp. on Principles and Practice of Parallel Programming (PPoPP), 2019 – 2021.

**Workshop Organizer**

*1st W'shop on Large-Scale Distributed Systems and Middleware (LADIS'07)*, Haifa, Israel, Mar 2007; with Gregory Chockler, Eliezer Dekel, and Roy Friedman.

*3rd Bertinoro W'shop on Future Directions in Distributed Computing (FuDiCo III): Building MAD Systems*, Bertinoro, Italy, Jun 2007; with Lorenzo Alvisi and Mike Dahlin.

*4th Israeli Networking Seminar*, Cisco, Natanya, Israel, May 2008; with Shlomi Dolev.

*Israeli Chip MultiProcessor (CMP) Day III*, Haifa, Israel, Feb 2009; with Avi Mendelson and Nir Shavit.

**Program Committee Vice-chair**

Vice-chair, *Distributed Systems and Algorithms* topic, Euro-Par 2005.

Vice-chair, *Fault Tolerant and Dependable Systems* area, 23rd IEEE Int'l Conf. on Distributed Computing Systems (ICDCS'03), May 2003.

Co-vice-chair, *Distributed Algorithms* area, 21st IEEE Int'l Conf. on Distributed Computing Systems (ICDCS'01), Apr 2001.

**Program Committee Member**

PPoPP'21 Extended Review Committee, Feb 2021.

USENIX ATC'20 (lightweight), Jul 2020.

PPoPP'20 Extended Review Committee, Feb 2020.

PPoPP'19, Feb 2019 (chair).

PODC'18, Jul 2018 (chair).

PPoPP'18, Feb 2018.

EuroSys'17, Apr 2017.

TRANSACT/WTTM'17 (co-chair), Feb. 2017.

EuroSys'16, Apr 2016.

SYSTOR'15 (co-chair), Jun 2015.

TRIOS'14, collocated with OSDI, 2014.

EuroSys'13, Apr 2013.

ACM PODC'12, Jul 2012.

ACM ASPLOS'12, Mar 2012.

ACM SPAA'11, Jun 2011.

HotDep'10, collocated with OSDI, Oct 2010.

IEEE/IFIP DSN/PDS'10, Jun 2010.

SYSTOR'10, May 2010.

DISC'09, Sep 2009 (chair).

SYSTOR'09, May 2009.

HotDep'08, collocated with OSDI, Dec 2008.

USENIX OSDI'08, Dec 2008.

IEEE/IFIP DSN/DCCS'08, Jun 2008.

Autonomics'07, Oct 2007.

ACM SIGACT-SIGOPS PODC'07, Aug 2007.

IEEE ICDCS'07, Fault Tolerance and Dependability track, Jun 2007.

IEEE/IFIP DSN/DCCS'06, Jun 2006.

SIROCCO'06, Jul 2006.

IWDDS W'shop, collocated with ICDCS'06, Jul 2006.

Euro-Par 2005, Aug-Sep 2005 (vice-chair).

ACM SIGACT-SIGOPS PODC'04, Jul 2004.

WWW2004, Performance and Reliability track, May 2004.

ACM-SRS W'shop, Oct 2003, collocated with CCS-10.  
 ACM SIGPLAN PPOPP'03 Jun 2003.  
 IEEE ICDCS'03, Fault Tolerant and Dependable Systems Track, May 2003 (vice chair).  
 ACM SIGACT-SIGOPS PODC'02, Jul 2002.  
 IPDPS'02, (IEEE and ACM), Apr 2002.  
 ACM SIGACT-SIGOPS PODC'01, Aug 2001.  
 IEEE ICDCS'01, Distributed Algorithms Track, Apr 2001 (vice chair).  
 IEEE FTPDS W'shop, collocated with IPDPS'01, 2001.  
 DISC'00, Oct 2000.  
 IEEE FTPDS W'shop, collocated with IPDPS'00, 2000.

**Advisory Board Member** The Euro-Par Conf. Series Advisory Board, since 2006.

**Award Committee Chair** Principles of Distributed Computing Dissertation Award, 2018.

**Award Committee Member** Rothschild Prize, 2015-2018.

ACM PODC and EATCS DISC Edsger W. Dijkstra Prize in Distributed Computing, 2009, 2014, 2018, and 2019.

## Technion Activities

### Current activities

**Head**, Rothschild Scholars Program – Technion Program for Excellence, since Jan 2019.

**Member**, Computer Engineering Track Committee, since Oct 2012.

**Member**, Technion Deans Search Committee, since Oct 2018.

**Academic head** the Networked Software Systems Laboratory, since Sep 2004.

### Former activities (selected)

**Head**, EMET Excellence Program, Oct 2018 – Mar 2020.

**Associate Dean** for Graduate Studies, Aug 2014 – Sep 2018.

**Chair**, Department Representation Committee, Oct 2007 – Nov 2008. Responsible for the department's representation on the web since Oct 2002.

Led **evaluation and revision of undergraduate Computer Engineering curricula**, 2007.

Led a project **revamping the department's web page**, 2006–2008.

**Member**, Kasher project awards committee, 2006–2007.

**Member**, committee for termination of studies, Nov 2005 – Jan 2006.

**Member**, committee for encouraging women to study engineering, Oct 2002 – Nov 2006. **Chaired** the committee in the academic year 2002–2003. Organized an open day for female high school students.

## Invited Presentations

### Keynote/Plenary Lectures

*Reliable Distributed Storage*, **Keynote Lecture**, The 3rd Annual Int'l Systems and Storage Conf. (SYSTOR'10), May 2010.

Invited talk, *60th Birthday celebration of Danny Dolev and Eli Gafni*, at the 29th ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC), Jul 2010, Zurich, Switzerland.

*Dynamic Computations in Ever-Changing Networks*, Invited Talk, 3rd Workshop on Theoretical Aspects of Dynamic Distributed Systems (TADDS'11) Sep 2011, Rome, Italy .

*On Locality and NUMA Effects in STM and Other Libraries*, Invited Talk, TransForm/Euro-TM 3rd Workshop on the Theory of Transactional Memory (WTTM'11), Sep 2011, Rome, Italy.

*The subtle differences among models with infinitely many processes*, Invited Talk, W'shop on Theoretical Aspects of Dynamic Distributed Systems (TADDS'14), Jul 2014, Paris, France.

*On Correctness of Concurrent Data Structures under Reads-Write Concurrency*, Invited Talk, EuroTM 6th Workshop on the Theory of Transactional Memory (WTTM'14), Jul 2014, Paris, France.

*Space Bounds for Reliable Storage: Fundamental Limits of Coding*, **Keynote Lecture**, Int'l Conf. On Principles Of DIstributed Systems (OPODIS'15), Dec 2015, Rennes, France.

*Space Bounds for Reliable Storage: Fundamental Limits of Coding*, Invited talk, the 7th Annual Henry Taub TCE Conference *Coding for Storage and Information Systems*, Jun 2017, Technion, Haifa, Israel.

*Harnessing Multicores for Big Data Processing*, **Keynote Lecture**, the 19th Annual IEEE/ACM Int'l Symp. in Cluster, Cloud, and Grid Computing (CCGrid 2019), Larnaca, Cyprus, May 2019.

Invited talk, *ApPLIED 2019 – Advanced tools, programming languages, and PLatforms for Implementing and Evaluating algorithms for Distributed systems*, Budapest, Hungary, October 2019.

## Tutorials

*On the Cost of Fault-Tolerant Consensus When There Are No Faults*, with Sergio Rajsbaum, at the 21st ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC), Jul 2002, Monterey, California.

Also presented (by my co-author Sergio Rajsbaum) at the 1st Latin American Symp. on Dependable Computing (LADC), São Paulo, Brazil, Oct 2003, and at the 2nd French-Mexican School on Cooperative Distributed Systems, Sep–Oct 2003, IRISA, Campus de Beaulieu Rennes, France.

*Local computations in large-scale sensor and wireless mesh networks (WMNs)*, at the Minema Winter School, Anzere, Switzerland, Feb 2007.

*Distributed Storage Reconfiguration*, with Alexander Spiegelman and Dahlia Malkhi, given by Alexander Spiegelman at the Int'l Conf. On Principles Of DIstributed Systems (OPODIS'15), Dec 2015, Rennes, France.

*Distributed Storage Fundamentals*, at the 1st ACM SIGOPS Summer School on Advanced Topics in Systems (SATIS'18), Aug 2018, Tromsø, Norway.

## Colloquia and Seminars

MIT EECS department Special Seminar.

MIT Theory of Computation seminar.

MIT Theory of Distributed Systems Group seminar (3 times).

EPFL Distributed Programming Laboratory and Programming Methods Laboratory, colloquium (twice).  
 Brown University, CS department colloquium.  
 Tel Aviv University, CS department colloquium.  
 Hebrew University, CS department colloquium.  
 University of Connecticut, invited lecture.  
 Ben-Gurion University, seminar.  
 Cornell University, seminar (4 times).  
 University of California at Berkeley, seminar.  
 Emory University, seminar.  
 BBN Technologies, invited lecture (twice).  
 AT&T Research, Murry Hill, NJ, invited lecture.  
 IBM Almaden Research Center, invited lecture.  
 KTH, Stockholm, Sweden, invited lecture.  
 Vrije University, Netherlands, invited lecture.  
 Sapienza University, Rome, invited lecture.  
 Yahoo! University, Sunnyvale, invited lecture.  
 University of Texas at Austin, invited lecture.  
 RiSE Seminar, TU Vienna.  
 VMWare Research Group, Palo Alto, CA.

#### Invited Conference and Workshop Presentations

- I. Keidar and K. Marzullo. **The Need for Realistic Failure Models in Protocol Design.** *Position paper in the 4th Information Survivability W'shop (ISW)* (sponsored by IEEE) 2001/2002, Vancouver, Canada, Mar 2002.
- I. Keidar. **Challenges in Evaluating Distributed Algorithms.** In the *Int'l W'shop on Future Directions in Distributed Computing (FuDiCo)*, Bertinoro, Italy, Jun 2002.
- G. Badishi, I. Keidar, and R. Melamed. **Towards Survivability of Application-Level Multicast.** In the *2nd Bertinoro W'shop on Future Directions in Distributed Computing (FuDiCo II): S.O.S. Survivability: Obstacles and Solutions*, Bertinoro, Italy, Jun 2004.
- G. Chockler, I. Keidar, and D. Malkhi. **Optimal Resilience Wait-Free Storage from Byzantine Components: Inherent Costs and Solutions.** In the *2nd Bertinoro W'shop on Future Directions in Distributed Computing (FuDiCo II): S.O.S. Survivability: Obstacles and Solutions*, Bertinoro, Italy, Jun 2004.
- I. Keidar, R. Melamed, and A. Orda. **EquiCast: Efficient Multicast with Selfish Users.** In the *DYNAMO W'shop: Dynamic Communication Networks: Foundations and Algorithms*, co-located with DISC 2005, Cracow, Poland, Sep 2005.
- R. Melamed and I. Keidar. **Scalable and Robust Content Distribution.** In IBM Systems and Storage Seminar, Haifa, Israel, Dec 2005.
- I. Keidar and A. Shraer. **Timeliness, Failure Detectors, and Consensus Performance.** In the *Perspectives on Dependability W'shop*, Austin, Texas, Feb 2006.
- E. Bortnikov, I. Cidon, and I. Keidar. **Nomadic Service Points.** In the *2nd Israeli Networking Seminar*, Cisco, Natanya, Israel, Apr 2006.

- G. Badishi, A. Herzberg, and I. Keidar. **Denial of Service? Leave it to Beaver!** In *Dagstuhl* seminar, “From Security to Dependability”, Sep 2006.
- G. V. Chockler, R. Guerraoui, I. Keidar, and M. Vukolić. **Secure Distributed Storage: Recent Results and Open Problems.** In *Dagstuhl* seminar, “From Security to Dependability”, Sep 2006.
- G. V. Chockler, R. Guerraoui, and I. Keidar. **On the Space Requirements of Robust Storage Implementations.** In *Dagstuhl* seminar, “From Security to Dependability”, Sep 2006.
- I. Keidar. **Local Computations in Large-Scale Networks.** In the *W’shop on Large-Scale Distributed Systems and Middleware (LADIS’07)*, Haifa, Israel, Mar 2007.
- E. Bortnikov, M. Gurevich I. Keidar, G. Kliot, and A. Shraer. **Brahms: Byzantine Resilient Random Membership Sampling.** In the *3rd Bertinoro W’shop on Future Directions in Distributed Computing (FuDiCo III): Building MAD Systems*, Jun 2007.
- E. Bortnikov, I. Cidon, and I. Keidar. **Scalable Load-Distance Balancing.** In the *2nd W’shop on Locality Preserving Distributed Computing Methods (LOCALITY 2007)*, Aug 2007, co-located with ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC’07).
- A. Shraer, S. Bercovici, G. Chockler, I. Keidar, R. Melamed, Y. Tock, and R. Vitenberg. **Local Building Blocks for a Scalable Pub/Sub Infrastructure.** In the *2nd W’shop on Locality Preserving Distributed Computing Methods (LOCALITY 2007)*, Aug 2007, co-located with ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC’07).
- E. Bortnikov, M. Gurevich I. Keidar, G. Kliot, and A. Shraer. **Brahms: Byzantine Resilient Random Membership Sampling.** In the *5th Israeli Networking Seminar*, Cisco, Natanya, Israel, Apr 2009.
- I. Keidar and D. Perelman. **On Maintaining Multiple Versions in STM.** In *What theory for transactional memory?* W’shop, Sep 2009, Elche, Spain, co-located with DISC 2009.
- C. Cachin, I. Keidar, and A. Shraer. **From Byzantine-Tolerant to Intrusion-Safe Services.** In *BFTW<sup>3</sup>: Why? When? Where?* W’shop on Theory and Practice of Byzantine Fault Tolerance, Sep 2009, Elche, Spain, co-located with DISC 2009.
- I. Keidar. **On Multi-Versioning in Transactional Memory.** In *EuroTM 1st Plenary Meeting*, May 2011, Paris, France.
- I. Keidar. **Threads vs. Caches: Modeling the Behavior of Parallel Workloads.** In *Computer Systems Design for the 21st Century*, mini-symposium with speakers from the ASPLOS’12 program committee, Rochester, NY, Oct 2011.
- E. Gidron, I. Keidar, D. Perelman and Y. Perez. **SALSA: Scalable and Low Synchronization NUMA-aware Algorithm for Producer-Consumer Pools.** In *Dagstuhl* seminar, “Abstractions for scalable multi-core computing”, Apr 2012.
- S. Patterson, Y. Eldar, and I. Keidar. **Distributed Compressed Sensing in Dynamic Networks.** In 2013 IEEE *GlobalSIP* Symp. on Network Theory.
- A. Spiegelman, G. Golan-Gueta and I. Keidar. **Transactional Data Structure Libraries. Highlight paper** in SYSTOR, Jun 2016.
- A. Spiegelman, G. Golan-Gueta and I. Keidar. **Transactional Data Structure Libraries.** In 8th Workshop on the Theory of Transactional Memory (WTTM’16), Jul 2016, Chicago, Illinois, USA.



- I. Keidar. **Dynamic Memory – It’s Time to Talk About Complexity**. In BIRS Workshop on Complexity and Analysis of Distributed Algorithms, Nov 2016, Oaxaca, MEX.

## Awards and Honors

**DISC 2020 Best Student Paper Award**, 2020.  
**OPODIS’19 Best Paper Award**, 2019.  
**Shirat Ha’Mada 2018** creative writing contest for scientists, 2nd place.  
**PLDI’16 Distinguished Paper Award**, 2016.  
**Henry M. Taub Award for Academic Excellence**, 2016.  
**Yanai Award for Excellence in Academic Education**, 2013.  
**IBM Faculty Award**, IBM International, 2011.  
**Muriel and David Jackow Award for Excellence in Teaching**, 2010.  
**David Dudi Ben-Aharon Research Award**, 2009.  
**SPAA’08 Best Paper Award**, 2008.  
**Citations for Excellence in Teaching**, Winter 2007–2008 and Winter 2008–2009.  
**Google Research Award**, 2007.  
**IBM Faculty Award**, IBM International, 2006, renewed 2007.  
**Allon Fellowship** for young scientists the Israeli Council for Higher Education, 2001 – 2004.  
**Technion Management Career Development Chair (CDC)**, the Technion, Israel 2001 – 2003.  
**Outstanding Service Award**, 21st IEEE Int’l Conf. on Distributed Computing Systems (ICDCS), 2001.  
**NSF CISE Postdoctoral Fellowship in Experimental Computer Science**, Aug 1999 – Jul 2001.  
**Rothschild Yad-Hanadiv fellowship** for postdoctoral studies in any discipline, 1998 – 1999.  
**Israeli Ministry of Science Eshkol Scholarship**, Nov 1996 – Nov 1998.  
**Leibnitz Scholarship** for Ph.D. students, Oct 1994 – Jun 1996.  
**Wolf Foundation Prize** for Ph.D. students, Jan 1996.  
**Intel Israel Prize** for Ph.D. students, Jun 1994.  
**M.Sc. Summa cum laude**, Computer Science, Apr 1994.  
**Hebrew University, Faculty of Mathematics and Natural Sciences Awards** for M.Sc. students, 1992 and 1993.  
**Hebrew University Rector’s Prize** for M.Sc. students, Jan 1993.  
**B.Sc. Summa cum laude**, Computer Science and Mathematics, Aug 1992.  
**Hebrew University Dean’s Honor Lists**, 1991, 1992, and 1993.  
**Hebrew University Rector’s Prize**, Dec 1991.  
**Tel Aviv University Dean’s Honor List**, Summer 1990.

## External Research Grants

**Magnet Consortium** – Israeli Ministry of Industry, Trade, and Labor, *GenPro*, 350K NIS for 18 months, starting Oct 2018.

**Hasso Platner Institute (HPI) Center Scalable Computing - Software and Architecture**, 2015–2020.  
 Center speaker. Additional members: H. Attiya, Y. Birk, Y. Etsion, R. Friedman, R. Ginosar, I. Keslassy, A. Kolodny, A. Schuster, and M. Silberstein. Approximately 270K Euro a year.

**Israeli Ministry of Science**, Israeli-French High Council for Scientific and Technological Research, *Cognizant Abstractions for Efficient Cloud Usage*, 296K ILS for two years, 2014–2015, with S. Kutten. French partners J. Beauquier, J. Burman, and A. Korman.

- The Royal Society** International Exchanges Scheme, *Scalable Software for Multicores*, 12K GBP for two years, 2014–2015, with G. Chockler.
- General Motors Corp.** *Ubiquitous Sensing with Vehicle Networks II*, 63K USD for two years, starting May 2013, with Y. Eldar.
- Intel Corporation** *Heterogeneous Computing Platforms – Power Management, Scheduling, Software Model and Data Sharing*, 350K USD a year for two years, starting Jul 2012. In collaboration with Y. Etsion, I. Keslassy, S. Mannor, D. Tsafirir, and U. Weiser.
- Intel Corporation** *Brain-Inspired Computing: Dynamic self-configurable architectures for intelligent learning agents*, 150K USD for one year, starting Jul 2012. Joint with R. Meir, I. Keslassy, A. Kolodny, S. Marom, A. Orda, and N. Ziv. In collaboration with N. Tishby (HUJI), B. Ginzburg (Intel), A. Globerson (HUJI), and E. Vaadia (HUJI).
- General Motors Corp.** *Ubiquitous Sensing with Vehicle Networks*, 63K USD for two years, starting Jan 2012.
- Israel Science Foundation (ISF)** *Dynamic Controlling and Monitoring in Highly Dynamic Networks*, 230K NIS a year for four years, starting Oct 2011. Joint with S. Kutten.
- IBM Faculty Award** *Solutions for CloudBoost: A Power-Efficient Cloud Data Store*, 40K USD for one year, 2011.
- Intel Corporation** *Heterogeneous Computing the Inevitable Solution: Power Management, Scheduling, and ISA*, 150K USD for one year, starting Sep 2010. Joint with I. Cidon, R. Ginosar, I. Keslassy, A. Kolodny, and U. Weiser.
- Hasso Platner Institute (HPI) Center** *Scalable Computing - Software and Architecture*, 2010–2015. Joint with H. Attiya, Y. Birk, I. Cidon, R. Friedman, R. Ginosar, I. Keslassy, A. Kolodny, A. Schuster, and U. Weiser. 230K Euro a year.
- Semiconductors Research Corporation (SRC)** *Innovative cache structures and architectures for multi-threaded applications in multi-core chips*, 180K USD for three years, starting Nov 2008. Joint with I. Cidon, A. Kolodny, R. Ginosar, and U. Weiser.
- Magnet Consortium** – Israeli Ministry of Industry, Trade, and Labor, *Rapidly Deployable Wireless Mesh Networks for RESCUE*, 300K NIS a year, for five years, starting Jul 2008. Joint with I. Cidon.
- Israeli Ministry of Science and Technology** *Knowledge Center: Infrastructure for CMP (Chip Multi-Processor) Research*, 500K NIS a year, for three years, starting Dec 2007; 10% acceptance rate (6 of 58 proposals funded). Knowledge Center Manager. Co-manager: U. Weiser.
- Intel Corporation Research Council** *Interconnected Multi-Core Processor Architecture*, 80K USD a year for three years, starting Oct 2007. Joint with I. Cidon, R. Ginosar, A. Kolodny, and U. Weiser.
- Google Research Award** *Foundations of Reliable Distributed Storage*, 20K USD, 2007.
- IBM Faculty Award** *Overlay Networks for Scalable and Dependable Publish-Subscribe Solutions*, 20K USD a year, 2006 and 2007.
- Technion-Haifa University Joint Research Grant** *Groupware services for mobile Wireless Networks*, 7K USD, 2006. Joint with I. Cidon and Z. Naor.

**Intel Corporation Research Council** *Interconnected Multi-Core Processor Architecture*, 80K USD a year for three years, starting Oct 2004. Joint with I. Cidon, R. Ginosar, and A. Kolodny.

**Israel Science Foundation (ISF)** *Group Communication in Wireless Mobile Ad-Hoc Networks*, 55K USD a year, for four years, starting Oct 2003. Joint with R. Friedman.

**Intel Corporation Research Council** Wireless Communications and Computing Group, *Middleware Services for Wireless PCA Environments*, 80K USD a year, for two years, starting Nov 2002. Joint with I. Cidon, R. Friedman, and A. Segall.

## Publication List

My publications are available online from my web page: <http://www.ee.technion.ac.il/people/idish>.

(\*) Indicates that a revised and extended version has been published elsewhere.

## Theses

- [T1] I. Keidar. **A Highly Available Paradigm for Consistent Object Replication**. *Master's thesis, Institute of Computer Science, The Hebrew University of Jerusalem, Jerusalem, Israel, 1994*. Also *Technical Report CS95-5*. Supervised by Prof. Danny Dolev.
- [T2] I. Keidar. **Consistency and High Availability of Information Dissemination in Multi-Processor Networks**. *Ph.D. dissertation, Institute of Computer Science, The Hebrew University of Jerusalem, Jerusalem, Israel, 1998*. Supervised by Prof. Danny Dolev.

## Refereed Journal Articles

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- [J11] I. Abraham, G. Chockler, I. Keidar, and D. Malkhi. **Wait-Free Regular Storage from Byzantine Components**. *Information Processing Letters (IPL)* 101(2), pp. 60–65, Jan 2007.
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- [J17] R. Melamed, I. Keidar, and Y. Barei. **Octopus: A Fault-Tolerant and Efficient Ad-hoc Routing Protocol**. *Wireless Networks* 14(6), pp. 731–743, Dec 2008.
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- [J28] M. Aguilera, I. Keidar, D. Malkhi, and A. Shraer. **Dynamic Atomic Storage Without Consensus**. In *Journal of the ACM (J. ACM)*, 58(2), Apr 2011.
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- [J31] M. Silberstein, B. Ford, I. Keidar, and E. Witchel. **GPUs: Integrating a File System with GPUs**. In *ACM Transactions on Computer Systems (TOCS)*, 32(1), Feb 2014.
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- [J34] I. Keidar and D. Perelman. **On Avoiding Spare Aborts in Transactional Memory**. In *Springer Theory of Computing Systems (TOCS)*, February 2015. (Special Issue with Selected Papers from SPAA’09).
- [J35] T. Morad, N. Shalev, I. Keidar, A. Kolodny, and U. Weiser. **EFS: Energy-Friendly Scheduler for Memory Bandwidth Constrained Systems**. In *Journal of Parallel and Distributed Computing (JPDC)*.
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- [J37] E. Bortnikov, A. Braginsky, E. Hillel, I. Keidar, and G. Sheffi. **Accordion: Better Memory Organization for LSM Key-Value Stores**. Proceedings of the VLDB Endowment (PVLDB) 11(12), pp. 1863–1875; and 44th Int’l Conf. on Very Large Databases (VLDB), Industry Track, Rio De Janeiro, Brazil, August 2018.
- [J38] O. Shacham, Y. Gottesman, A. Bergman, E. Bortnikov, E. Hillel, and I. Keidar. **Taking Omid to the Clouds: Fast, Scalable Transactions for Real-Time Cloud Analytics**. Proceedings of the VLDB Endowment (PVLDB) 11(12), pp. 1795–1808; and 44th Int’l Conf. on Very Large Databases (VLDB), Industry Track, Rio De Janeiro, Brazil, August 2018.
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### Invited (Non-Refereed) Journal Articles

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- [J41] I. Keidar and A. Schuster. **Want Scalable Computing? Speculate!** In *ACM SIGACT News*, 37(3), Distributed Computing Column 23, pp. 59–66, Sep 2006.
- [J42] E. Bortnikov, I. Cidon, I. Keidar, T. Kol and A. Vaisman. **A QoS WMN with Mobility Support**. In *ACM SIGMOBILE Mobile Computing and Communications Review (MC<sup>2</sup>R)* 12(1), pp. 46–48, Jan 2008, Special Issue: MobiCom 2007 poster abstracts.
- [J43] C. Cachin, I. Keidar, and A. Shraer. **Trusting the Cloud**. In *ACM SIGACT News*, 40(2), pp. 81–86, Distributed Computing Column 34, Jun 2009.
- [J44] M. Aguilera, I. Keidar, D. Malkhi, J.-P. Martin, and A. Shraer. **Reconfiguring Replicated Atomic Storage: A Tutorial**. *Bulletin of the European Association for Theoretical Computer Science (BEATCS)* 102, pp. 84–108, Distributed Computing Column, Oct 2010.

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- [J45] O. Hazzan, A. Tal, and I. Keidar. **Can a one-day conference change female high school students’ perception of Electrical Engineering?** *Short paper in IEEE Transactions on Education*, 49(3), Aug 2006.

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- [B1] T. Anker, G. Chockler, D. Dolev, and I. Keidar. **Scalable Group Membership Services for Novel Applications**. In *Networks in Distributed Computing (DIMACS workshop)*. Edited by: Marios Mavronicolas, Michael Merritt, and Nir Shavit. DIMACS 45. American Mathematical Society, pp. 23–42, 1998.
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- [B3] I. Keidar. **Group Communication**. Chapter in *The Encyclopedia of Distributed Computing*, Joseph Urban and Partha Dasgupta, editors, Kluwer Academic Publishers. Unpublished. Completed: 2001.
- [B4] I. Keidar. **Challenges in Evaluating Distributed Algorithms**. In *Future Directions in Distributed Computing*, Lecture Notes in Computer Science Volume 2584, pp. 40–44, 2003.
- [B5] I. Keidar and S. Rajsbaum. **Open Questions on Consensus Performance in Well-Behaved Runs**. In *Future Directions in Distributed Computing*, Lecture Notes in Computer Science Volume 2584, pp. 35–39, 2003.
- [B6] O. Hazzan, A. Tal, and I. Keidar. **Female Pupils Perception of Electrical Engineering**. Chapter in *Gender and IT Encyclopedia*, Eileen M. Trauth, editor, Information Science Publishing, Idea Group Inc., Apr 2006.
- [B7] I. Keidar and D. Perelman. **Multi-versioning in Transactional Memory**. Chapter 7 in *Transactional Memory; Foundations, Algorithms, Tools, and Applications*, Rachid Guerraoui and Paolo Romano, editors, Lecture Notes in Computer Science Volume 8913, pp. 150–165, 2015.

## Research Papers in Refereed Conference Proceedings

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- [C2] I. Keidar and D. Dolev. **Efficient Message Ordering in Dynamic Networks**. Proceedings, *15th ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC)*, pp. 68–76, Philadelphia, Pennsylvania, May 1996; (31% acceptance rate).
- [C3] G. V. Chockler, N. Huleihel, I. Keidar, and D. Dolev. **Multimedia Multicast Transport Service for Groupware**. Proceedings, *TINA Conf. on the Convergence of Telecommunications and Distributed Computing Technologies*, pp. 43–54, Heidelberg, Germany, Sep 1996.
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- [C5] T. Anker, D. Dolev, and I. Keidar. **Fault Tolerant Video-on-Demand Services**. Proceedings, *19th IEEE Int'l Conf. on Distributed Computing Systems (ICDCS)*, pp. 244–252, Austin, Texas, Jun 1999.
- [C6] (\*) I. Keidar and R. Khazan. **A Client-Server Approach to Virtually Synchronous Group Multicast: Specifications and Algorithms**. Proceedings, *20th IEEE Int'l Conf. on Distributed Computing Systems (ICDCS)*, pp. 344–355, Taipei, Taiwan, Apr 2000.
- [C7] (\*) I. Keidar, J. Sussman, K. Marzullo, and D. Dolev. **A Client-Server Oriented Algorithm for Virtually Synchronous Group Membership in WANs**. Proceedings, *20th IEEE Int'l Conf. on Distributed Computing Systems (ICDCS)*, pp. 356–365, Taipei, Taiwan, Apr 2000.
- [C8] (\*) I. Keidar, R. Khazan, N. Lynch, and A. Shvartsman. **An Inheritance-Based Technique for Building Simulation Proofs Incrementally**. Proceedings, *22nd Int'l Conf. on Software*

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- [C11] K. Ingols and I. Keidar. **Availability Study of Dynamic Voting Algorithms**. Proceedings, *21st IEEE Int'l Conf. on Distributed Computing Systems (ICDCS)*, pp. 247–254, Phoenix, Arizona, Apr 2001; (31% acceptance rate).
- [C12] O. Bakr and I. Keidar. **Evaluating the Running Time of a Communication Round over the Internet**. Proceedings, *21st ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC)*, pp. 243–252, Monterey, California, Jul 2002; (22% acceptance rate).
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- [C18] (\*) N. Lavi, I. Cidon, and I. Keidar. **Supporting Groupware in Mobile Networks**. Proceedings, *6th IFIP/IEEE Int'l Conf. on Mobile and Wireless Communication Networks (MWCN)*, Paris, France, Oct 2004.
- [C19] (\*) G. Badishi, A. Herzberg, and I. Keidar. **Keeping Denial-of-Service Attackers in the Dark**. Proceedings, *19th Int'l Symp. on Distributed Computing (DISC)*, *Lecture Notes in Computer Science* Volume 3724, pp. 18–32, Cracow, Poland, Sep 2005; (19% acceptance rate).
- [C20] (\*) R. Melamed, I. Keidar, and Y. Barel. **Octopus: A Fault-Tolerant and Efficient Ad-hoc Routing Protocol**. Proceedings, *24th IEEE Symp. on Reliable Distributed Systems (SRDS 2005)*, pp. 39–49, Orlando, Florida, Oct 2005; (27% acceptance rate).



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- [C22] (\*) E. Bortnikov, I. Cidon, and I. Keidar. **Nomadic Service Points.** Proceedings, *IEEE INFOCOM 2006*, Barcelona, Spain, Apr 2006; (18% acceptance rate).
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- [C25] Y. Birk, I. Keidar, L. Liss, A. Schuster, and R. Wolff. **Veracity Radius - Capturing the Locality of Distributed Computations.** Proceedings, *25th ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC)*, pp. 102–111, Denver, Colorado, Jul, 2006; (22% acceptance rate).
- [C26] Y. Birk, I. Keidar, L. Liss, and A. Schuster. **Efficient Dynamic Aggregation.** Proceedings, *20th Int'l Symp. on Distributed Computing (DISC), Lecture Notes in Computer Science* Volume 4167, pp. 90–104, Stockholm, Sweden, Sep 2006; (24% acceptance rate).
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- [C28] (\*) Z. Bar-Yossef, I. Keidar, and U. Schonfeld. **Do Not Crawl in the DUST: Different URLs with Similar Text.** Proceedings, *16th Int'l World Wide Web Conf. (WWW2007)*, pp. 111–120, Banff, Canada, May 2007; (14% acceptance rate).
- [C29] R. Gindin, I. Cidon, and I. Keidar. **NoC-Based FPGA: Architecture and Routing.** Proceedings, *1st ACM/IEEE Int'l Symp. on Networks-on-Chips (NOCS)*, pp. 253–262, Princeton, New Jersey, May 2007; (26% acceptance rate).
- [C30] (\*) I. Keidar and A. Shraer. **How to Choose a Timing Model?** Proceedings, *37th IEEE/IFIP Int'l Conf. on Dependable Systems and Networks (DSN)*, pp. 389–398, Edinburgh, UK, Jun 2007; (22% acceptance rate).
- [C31] G. Chockler, R. Guerraoui, and I. Keidar. **Amnesic Distributed Storage.** Proceedings, *21st Int'l Symp. on Distributed Computing (DISC), Lecture Notes in Computer Science* Volume 4731, pp. 139–151, Cyprus, Sep 2007; (32% acceptance rate).
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- [C33] E. Bortnikov, I. Cidon, and I. Keidar. **Scalable Real-time Gateway Assignment in Mobile Mesh Networks.** Proceedings, *3rd Int'l Conf. on emerging Networking EXperiments and Technologies (CoNEXT)*, New York, Dec 2007; (20% acceptance rate).

- [C34] G. Badishi and I. Keidar. **Improving Denial of Service Resistance using Dynamic Local Adaptations**. Proceedings, *23rd Annual ACM Symp. on Applied Computing (SAC)*, Dependable and Adaptive Distributed Systems (DADS) track, pp. 2212–2218, Fortaleza, Ceara, Brazil, Mar 2008; (27% acceptance rate).
- [C35] Z. Guz, I. Keidar, A. Kolodny, and U. Weiser. **Utilizing Shared Data in Chip Multiprocessors with the Nahal Architecture**. Proceedings, *20th ACM Symp. on Parallelism in Algorithms and Architectures (SPAA)*, special track on Hardware and Software Techniques to Improve the Programmability of Multicore Machines, pp. 1–10, Munich, Germany, Jun 2008; (28% acceptance rate). **Awarded SPAA'08 Best Paper Award**.
- [C36] (\*) E. Bortnikov, M. Gurevich I. Keidar, G. Kliot, and A. Shraer. **Brahms: Byzantine Resilient Random Membership Sampling**. Proceedings, *27th ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC)*, pp. 145–154, Toronto, Canada, Aug 2008; (30% acceptance rate).
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- [C38] H. Eran, O. Lutzky, Z. Guz, and I. Keidar. **Transactifying Apache's Cache Module**. Proceedings, *SYSTOR 2009 – The Int'l Systems and Storage Conf.*, ACM Int'l Conf. Proceedings Series, May 2009.
- [C39] (\*) C. Cachin, I. Keidar, and A. Shraer. **Fail-Aware Untrusted Storage**. Proceedings, *39th IEEE/IFIP Int'l Conf. on Dependable Systems and Networks (DSN)*, pp. 494–503, Estoril, Portugal, Jun-Jul 2009; (21% acceptance rate).
- [C40] (\*) M. Gurevich and I. Keidar. **Correctness of Gossip-Based Membership under Message Loss**. Proceedings, *28th ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC)*, pp. 151–160, Calgary, Canada, Aug 2009; (24% acceptance rate).
- [C41] (\*) M. Aguilera, I. Keidar, D. Malkhi, and A. Shraer. **Dynamic Atomic Storage Without Consensus**. Proceedings, *28th ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC)*, pp. 17–25, Calgary, Canada, Aug 2009; (24% acceptance rate).
- [C42] (\*) I. Keidar and D. Perelman. **On Avoiding Spare Aborts in Transactional Memory**. Proceedings, *21st ACM Symp. on Parallelism in Algorithms and Architectures (SPAA)*, pp. 59–68, Calgary, Canada, Aug 2009; (30% acceptance rate; invited to Special Issue of TOCS).
- [C43] A. Berman and I. Keidar. **Low-Overhead Error Detection for Networks-on-Chip**. Proceedings, *27th IEEE Int'l Conf. on Computer Design (ICCD)*, pp. 219–224, Lake Tahoe, California, Oct 2009; (35% acceptance rate).
- [C44] (\*) I. Eyal, I. Keidar, and R. Rom. **Distributed Data Classification in Sensor Networks**. Proceedings, *29th ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC)*, pp. 151–160, Zurich, Switzerland, Jul 2010; (21% acceptance rate).
- [C45] D. Perelman, R. Fan, and I. Keidar. **On Maintaining Multiple Versions in STM**. Proceedings, *29th ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC)*, pp. 16–25, Zurich, Switzerland, Jul 2010; (21% acceptance rate).

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- [C47] Z. Guz, O. Itzhak, I. Keidar, A. Kolodny, A. Mendelson, and U. C. Weiser. **Threads vs. Caches: Modeling the Behavior of Parallel Workloads**. Proceedings, *28th IEEE Int'l Conf. on Computer Design (ICCD)*, Amsterdam, Netherlands, Oct 2010; (29% acceptance rate).
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- [C49] D. Perelman, A. Byshevsky, O. Litmanovich, and I. Keidar. **SMV: Selective Multi-Versioning STM**. Proceedings, *25th Int'l Symp. on Distributed Computing (DISC), Lecture Notes in Computer Science* Volume 6950, (Advanced Research in Computing and Software Science series), pp. 125–140, Rome, Italy, Sep 2011; (23% acceptance rate).
- [C50] D. Basin, R. Fan, I. Keidar, O. Kiselov, and D. Perelman. **CAFÉ: Scalable Task Pools with Adjustable Fairness and Contention**. Proceedings, *25th Int'l Symp. on Distributed Computing (DISC), Lecture Notes in Computer Science* Volume 6950, (Advanced Research in Computing and Software Science series), pp. 475–488, Rome, Italy, Sep 2011; (23% acceptance rate).
- [C51] (\*) I. Eyal, I. Keidar, and R. Rom. **LiMoSense – Live Monitoring in Dynamic Sensor Networks**. Proceedings, *7th Int'l Symp. on Algorithms for Sensor Systems, Wireless Ad Hoc Networks and Autonomous Mobile Entities (ALGOSENSORS)*, Saarbruecken, Germany, Sep 2011.
- [C52] E. Gidron, I. Keidar, D. Perelman and Y. Perez. **SALSA: Scalable and Low Synchronization NUMA-aware Algorithm for Producer-Consumer Pools**. Proceedings, *24th ACM Symp. on Parallelism in Algorithms and Architectures (SPAA)*, Pittsburgh, Pennsylvania, USA, Jun 2012.
- [C53] (\*) M. Silberstein, B. Ford, I. Keidar and E. Witchel. **GPUfs: Integrating a File System with GPUs**. Proceedings, *18th Int'l Conf. on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, Houston, Texas, Mar 2013; (23% acceptance rate).
- [C54] S. Patterson, Y. Eldar, and I. Keidar. **Distributed Sparse Signal Recovery For Sensor Networks**. Proceedings, *38th Int'l Conf. on Acoustics, Speech, and Signal Processing (ICASSP)*, Vancouver, Canada, May 2013.
- [C55] I. Eyal, I. Keidar, S. Patterson, and R. Rom. **In-Network Analytics for Ubiquitous Sensing**. Proceedings, *27th Int'l Symp. on Distributed Computing (DISC), Lecture Notes in Computer Science* Volume 8205, (Advanced Research in Computing and Software Science series), pp. 512–526, Jerusalem, Israel, Oct 2013; (25% acceptance rate).
- [C56] S. Patterson, Y. Eldar, and I. Keidar. **Distributed Compressed Sensing in Dynamic Networks**. Proceedings, *1st IEEE Global Conf. on Signal and Information Processing (GlobalSIP'13)*, Austin, Texas, Dec 2013.
- [C57] K. Lev-Ari, G. Chockler, and I. Keidar. **On Correctness of Data Structures under Read-Write Concurrency**. Proceedings, *Int'l Symp. on Distributed Computing (DISC)*, pp. 273–287, Austin, Texas, Oct 2014; (23% acceptance rate).

- [C58] G. Golan-Gueta, E. Bortnikov, E. Hillel, and I. Keidar. **Scaling Concurrent Log-Structured Data Stores**. In *EuroSys*, Bordeaux, France, Apr 2015; (21% acceptance rate).
- [C59] K. Lev-Ari, G. Chockler, and I. Keidar. **A Constructive Approach for Proving Data Structures' Linearizability**. Proceedings, *Int'l Symp. on Distributed Computing (DISC)*, pp. 356–370, Tokyo, Japan, Oct 2015; (29% acceptance rate).
- [C60] M. Arbel, G. Golan-Gueta, E. Hillel, and I. Keidar. **Towards Automatic Lock Removal for Scalable Synchronization**. Proceedings, *Int'l Symp. on Distributed Computing (DISC)*, pp. 170–184, Tokyo, Japan, Oct 2015; (29% acceptance rate).
- [C61] N. Shalev, E. Harpaz, H. Porat, I. Keidar, and Y. Weinsberg. **CSR: Core Surprise Removal in Commodity Operating Systems**. Proceedings, *21st Int'l Conf. on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, Atlanta, GA, USA, Apr 2016; (22% acceptance rate).
- [C62] A. Spiegelman, G. Golan-Gueta and I. Keidar. **Transactional Data Structure Libraries**. Proceedings, *37th Annual ACM SIGPLAN Conf. on Programming Language Design and Implementation (PLDI)*, Santa Barbara, CA, USA, Jun 2016; (16% acceptance rate). **PLDI'16 Distinguished Paper Award**.
- [C63] K. Lev-Ari, E. Bortnikov, I. Keidar, and A. Shraer. **Modular Composition of Coordination Services**. Proceedings, *Usenix Annual Technical Conference (ATC)*, Denver, Co, USA, Jun 2016; (19% acceptance rate).
- [C64] A. Spiegelman, Y. Cassuto, G. Chockler, and I. Keidar. **Space Bounds for Reliable Storage: Fundamental Limits of Coding**. Proceedings, *ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC)*, Chicago, IL, USA, Jul 2016; (29% acceptance rate).
- [C65] N. Kraus, D. Carmel, I. Keidar, and M. Orenbach. **NearBucket-LSH: Efficient Similarity Search in P2P Networks**. Proceedings, *9th Int'l Conf. on Similarity Search and Applications (SISAP)*, Tokyo, Japan, Oct 2016; (38% acceptance rate).
- [C66] A. Spiegelman and I. Keidar. **Dynamic Atomic Snapshots**. Proceedings, *20th Int'l Conf. on Principles of Distributed Systems (OPODIS)*, Madrid, Spain, Dec 2016; (37% acceptance rate). **Invited to Special Issue** of Theoretical Computer Science (TCS) with selected papers from OPODIS'16.
- [C67] (\*) D. Basin, E. Bortnikov, A. Braginsky, G. Golan-Gueta, E. Hillel, I. Keidar, and M. Sulamy. **KiWi: A Key-Value Map for Scalable Real-Time Analytics**. Proceedings, *22nd ACM SIGPLAN Symp. on Principles and Practice of Parallel Programming (PPoPP)*, Austin, Texas, Feb 2017; (22% acceptance rate). **Invited to Special Issue** of ACM Transactions on Parallel Computing (TOPC) with selected papers from PPoPP'17 (27% of accepted papers invited).
- [C68] O. Shacham, F. Perez-Sorrosal, E. Bortnikov, E. Hillel, I. Keidar, I. Kelly, M. Morel, and S. Paranjpye. **Omid, Reloaded: Scalable and Highly-Available Transaction Processing**. Proceedings, *15th USENIX Conf. on File and Storage Technologies (FAST)*, Santa Clara, CA, Feb 2017; (24% acceptance rate).
- [C69] A. Spiegelman and I. Keidar. **On Liveness of Dynamic Storage**. Proceedings, *24th Int'l Colloquium on Structural Information and Communication Complexity (SIROCCO)*, Porquerolles, France, Jun 2017.

- [C70] A. Spiegelman, I. Keidar, and D. Malkhi. **Dynamic Reconfiguration: Abstraction and Optimal Asynchronous Solution.** Proceedings, *31st Int'l Symp. on Distributed Computing (DISC)*, Vienna, Austria, Oct 2017; (23% acceptance rate).
- [C71] N. Shalev, I. Keidar, Y. Weinsberg, Y. Moatti, and E. Ben-Yehuda. **WatchIT: Who Watches Your IT Guy?** Proceedings, *26th ACM Symp. on Operating Systems Principles (SOSP)*, Shanghai, China, Oct 2017; (16% acceptance rate).
- [C72] N. Kraus, D. Carmel, and I. Keidar. **Fishing in the Stream: Similarity Search over Endless Data.** Short paper in Proceedings, *IEEE Big Data*, Boston, MA, USA, Dec 2017; (20% acceptance rate).
- [C73] A. Berger, I. Keidar, and A. Spiegelman. **Integrated Bounds for Disintegrated Storage.** Proceedings, *32nd Int'l Symp. on Distributed Computing (DISC)*, New Orleans, USA, October 2018; (24% acceptance rate).
- [C74] K. Lev-Ari, A. Spiegelman, I. Keidar, and D. Malkhi. **FairLedger: A Fair Blockchain Protocol for Financial Institutions.** Proceedings, *23rd Int'l Conf. on Principles of Distributed Systems (OPODIS)*, Neuchâtel, Switzerland, Dec 2019. **Best Paper Award.**
- [C75] A. Rinberg, A. Spiegelman, E. Bortnikov, E. Hillel, I. Keidar, H. Serviansky, and L. Rhodes. **Fast Concurrent Data Sketches.** Proceedings, the *25th ACM SIGPLAN Symp. on Principles and Practice of Parallel Programming (PPoPP)*, San Diego, CA, USA, Feb 2020; (24% acceptance rate). Artifact evaluation badges: Artifact Available, Artifact Functional, and Results Replicated.
- [C76] G. Sheffi, D. Basin, E. Bortnikov, D. Carmel, and I. Keidar. **Scalable Top-K Retrieval with Sparta.** Proceedings, the *25th ACM SIGPLAN Symp. on Principles and Practice of Parallel Programming (PPoPP)*, San Diego, CA, USA, Feb 2020; (24% acceptance rate). Artifact evaluation badges: Artifact Functional and Results Replicated.
- [C77] H. Meir, E. Bortnikov, A. Braginsky, D. Basin, Y. Gottesman, E. Hillel, I. Keidar, E. Meir, G. Sheffi, and Y. Zuriel. **Oak: A Scalable Off-Heap Allocated Key-Value Map.** Proceedings, the *25th ACM SIGPLAN Symp. on Principles and Practice of Parallel Programming (PPoPP)*, San Diego, CA, USA, Feb 2020; (24% acceptance rate). Artifact evaluation badges: Artifact Available, Artifact Functional, and Results Replicated.
- [C78] E. Gilad, E. Bortnikov, A. Braginsky, Y. Gottesman, E. Hillel, I. Keidar, N. Moscovici, and R. Shahout. **EvenDB: Optimizing Key-Value Storage for Spatial Locality.** Proceedings, the *15th European Conference on Computer Systems (EuroSys)*, April 2020; (18% acceptance rate).
- [C79] S. Cohen, I. Keidar, and A. Spiegelman. **Not a COINcidence: Sub-Quadratic Asynchronous Byzantine Agreement WHP.** To appear in Proceedings, the *34th Int'l Symp. on Distributed Computing (DISC)*, Oct 2020; (23% acceptance rate).
- [C80] A. Rinberg and I. Keidar. **Intermediate Value Linearizability: A Quantitative Correctness Criterion.** To appear in Proceedings, the *34th Int'l Symp. on Distributed Computing (DISC)*, Oct 2020; (23% acceptance rate). **Best Student Paper Award.**
- [C81] O. Naor and I. Keidar. **Expected Linear Round Synchronization: The Missing Link for Linear Byzantine SMR.** To appear in Proceedings, the *34th Int'l Symp. on Distributed Computing (DISC)*, Oct 2020; (23% acceptance rate).

## Refereed Workshop Proceedings

- [W1] T. Anker, G. V. Chockler, I. Keidar, M. Rozman, and J. Wexler. **Exploiting Group Communication for Highly Available Video-On-Demand Services**. Proceedings, *13th Int'l Conf. on Advanced Science, and Technology (ICAST) and the 2nd Int'l Conf. on Multimedia Information Systems (ICMIS), and IEEE Yuforic on Multimedia Information Systems*, pp. 265–270, Schaumburg, Illinois, Apr 1997.
- [W2] T. Anker, G. V. Chockler, D. Dolev, and I. Keidar. **The Caelum Toolkit for CSCW: The Sky is the Limit**. Proceedings, *3rd Int'l W'shop on Next Generation Information Technologies and Systems (NGITS)*, pp. 69–76, Neve Ilan, Israel, Jun 1997.
- [W3] T. Araragi, P. Attie, I. Keidar, K. Kogure, V. Luchangco, N. Lynch, and K. Mano. **On Formal Modeling of Agent Computations**. Proceedings, *1st NASA W'shop on Formal Approaches to Agent-Based Systems (FAABS)*, pp. 48–62, FAABS 2000 Greenbelt, Maryland, Apr 2000. Springer Verlag Lecture Notes in Artificial Intelligence 1871.
- [W4] A. Fekete and I. Keidar. **A General Framework for Highly Available Services Based on Group Communication**. Proceedings, *21st Int'l Conf. on Distributed Computing Systems W'shops (ICDCS-21W)*; the *Int'l W'shop on Applied Reliable Group Communication (WARGC)*, pp. 57–62, Phoenix, Arizona, Apr 2001.
- [W5] S. Bercovici, Y. Frishman, I. Keidar, and A. Tal. **Decentralized Electronic Mail**. Proceedings, *Int'l W'shop on Dynamic Distributed Systems (IWDDS)*; in conjunction with the *26th Int'l Conf. on Distributed Computing Systems (ICDCS)*, Lisboa, Portugal, Jul 2006.
- [W6] (\*) I. Eyal, I. Keidar, and R. Rom. **Distributed Clustering for Robust Aggregation in Large Networks**. In *5th W'shop on Hot Topics in System Dependability (HotDep)*, co-located with the *39th IEEE/IFIP Int'l Conf. on Dependable Systems and Networks (DSN)*, Estoril, Portugal, Jun 2009; (37% acceptance rate).
- [W7] (\*) D. Perelman and I. Keidar. **SMV: Selective Multi-Versioning STM**. In *5th ACM SIGPLAN Workshop on Transactional Computing (TRANSACT 2010)*, Apr 2010, Paris, France, co-located with EuroSys 2010.
- [W8] A. Shraer, J.-P. Martin, D. Malkhi and I. Keidar. **Data-Centric Reconfiguration with Network-Attached Disks**. In *LADIS 2010: The 4th ACM SIGOPS/SIGACT W'shop on Large Scale Distributed Systems and Middleware*, co-located with the *29th ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC)*, pp. 21–26, Zurich, Switzerland, Jul 2010.
- [W9] D. Basin, K. Birman, I. Keidar and Y. Vigfusson. **Sources of Instability in Data Center Multicast**. In *LADIS 2010: The 4th ACM SIGOPS/SIGACT W'shop on Large Scale Distributed Systems and Middleware*, co-located with the *29th ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC)*, pp. 32–37, Zurich, Switzerland, Jul 2010.
- [W10] A. Shraer, C. Cachin, A. Cidon, I. Keidar, Y. Michalevsky, and D. Shaket. **Venus: Verification for Untrusted Cloud Storage**. In the *ACM Cloud Computing Security Workshop (CCSW'10)*, co-located with the *17th ACM Conf. on Computer and Communications Security (CCS)*, Chicago, IL, Oct 2010; (29% acceptance rate).

- [W11] N. Azuelos, Y. Etsion, I. Keidar, A. Zaks, and E. Ayguadé. **Introducing Speculative Optimizations in Task Dataflow with Language Extensions and Runtime Support.** In *Data-Flow Execution Models for Extreme Scale Computing (DFM)*, co-located with *PACT*, Sep 2012.
- [W12] I. Eyal, F. Junqueira, and I. Keidar. **Thinner Clouds with Preallocation.** In *5th USENIX Workshop on Hot Topics in Cloud Computing (HotCloud)*, San Jose, California, Jun 2013.
- [W13] I. Eyal, K. Birman, I. Keidar, and R. van Renesse. **Ordering Transactions with Prediction in Distributed Object Store.** In *7th W'shop on Large-Scale Distributed Systems and Middleware (LADIS'13)*, co-located with the *24th ACM Symposium on Operating Systems Principles (SOSP'13)*, Farmington, Pennsylvania, Nov 2013.
- [W14] O. Itzhak, I. Keidar, A. Kolodny, and U. C. Weiser. **Performance scalability and dynamic behavior of Parsec benchmarks on many-core processors.** In *4th Workshop on Systems for Future Multicore Architectures (SFMA'14)*, co-located with EuroSys 2014, Apr 2014.
- [W15] (\*) N. Shalev, Y. Weinsberg, and I. Keidar. **Core Surprise Removal (CSR) in Commodity OS.** In *5th Workshop on Systems for Future Multicore Architectures (SFMA'15)*, co-located with EuroSys 2015, Apr 2015.
- [W16] (\*) N. Shalev, I. Keidar, Y. Moatti, and Y. Weinsberg. **WatchIT: Who Watches Your IT Guy?** In *8th ACM CCS Int'l W'shop on Managing Insider Security Threats (ACM MIST'16)*, in conjunction with ACM CCS 2016, Vienna, Austria, Oct 2016.

## Refereed Short Papers and Posters in Conferences

- [SC1] D. Dolev, R. Friedman, I. Keidar, and D. Malkhi. **Failure Detectors in Omission Failure Environments.** *Brief announcement, proceedings, 16th ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC)*, page 286, Santa Barbara, California, Aug 1997.
- [SC2] (\*) C. Livadas, I. Keidar, and N. A. Lynch. **Designing a Caching-Based Reliable Multicast Protocol.** In the *IEEE/IFIP Int'l Conf. on Dependable Systems and Networks (DSN), Fast Abstracts Supplement*, pp. B44-B45, Göteborg, Sweden, Jul 2001.
- [SC3] I. Keidar and R. Melamed. **Brief Announcement: Trilix: A Scalable Lookup System for Dynamic Environments.** *Proceedings, 23rd ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC)*, St. John's, Newfoundland, Canada, Jul 2004.
- [SC4] (\*) G. Badishi, I. Keidar, and A. Sasson. **Brief Announcement: Exposing and Eliminating Vulnerabilities to Denial of Service Attacks in Secure Gossip-Based Multicast.** *Proceedings, 23rd ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC)*, St. John's, Newfoundland, Canada, Jul 2004.
- [SC5] G. Badishi, A. Herzberg, and I. Keidar. **How to Build a Dam: Fighting Application-Level DoS Attacks.** In the *IEEE/IFIP Int'l Conf. on Dependable Systems and Networks (DSN), Fast Abstracts Supplement*, Yokohama, Japan, Jun–Jul 2005.
- [SC6] (\*) U. Schonfeld, Z. Bar-Yossef, and I. Keidar. **Do not Crawl in the DUST: Different URLs with Similar Text.** Poster in *15th Int'l World Wide Web Conf. (WWW2006)*, Edinburgh, UK May 2006.

- [SC7] A. Shraer, G. Chockler, I. Keidar, R. Melamed, Y. Tock, and R. Vitenberg. **Local On-Line Maintenance of Scalable Pub/Sub Infrastructure**. In the *IEEE/IFIP Int'l Conf. on Dependable Systems and Networks (DSN), Fast Abstracts Supplement*, pp. 408–409, Edinburgh, UK, Jun 2007.
- [SC8] C. Cachin, I. Keidar and A. Shraer. **Improving Efficiency and Enhancing Concurrency of Untrusted Storage**. In the *6th USENIX Conf. on File and Storage Technologies (FAST '08), work-in-progress (WiP) and poster session*, San Jose, CA, Feb 2008.
- [SC9] E. Bortnikov, I. Cidon, and I. Keidar. **Brief Announcement: Dynamic Service Assignment in Next-Generation Mobile Networks: the MAGMA Approach**. Proceedings, *27th ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC)*, page 444, Toronto, Canada, Aug 2008.
- [SC10] (\*) C. Cachin, I. Keidar and A. Shraer. **Brief Announcement: Principles of Untrusted Storage: A New Look at Consistency Conditions**. Proceedings, *27th ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC)*, page 426, Toronto, Canada, Aug 2008.
- [SC11] (\*) A. Berman and I. Keidar. **Low-Overhead Error Detection for Networks-on-Chip**. *SYSTOR 2009*, poster session, May 2009.
- [SC12] (\*) I. Eyal, I. Keidar, and R. Rom. **Distributed Clustering for Robust Aggregation in Large Networks**. *SYSTOR 2009*, poster session, May 2009.
- [SC13] (\*) Z. Guz, E. Bolotin, I. Keidar, A. Kolodny, A. Mendelson, and U. Weiser. **Many-Core vs. Many-Thread Machines: Stay Away From the Valley**. *SYSTOR 2009*, poster session, May 2009.
- [SC14] (\*) D. Basin, K. Birman, I. Keidar and Y. Vigfusson. **Brief Announcement: Sources of Instability in Data Center Multicast**. Proceedings, *29th ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC)*, page 126, Zurich, Switzerland, Jul 2010.
- [SC15] (\*) I. Eyal, I. Keidar, S. Patterson, and R. Rom. **Global Estimation with Local Communication**. *SYSTOR 2012 – the 5th Int'l Systems and Storage Conf.*, poster session, Jun 2012.
- [SC16] (\*) S. Patterson, Y. Eldar, and I. Keidar. **Brief Announcement: Distributed Compressed Sensing for Sensor Networks**. Proceedings, *27th Int'l Symp. on Distributed Computing (DISC), Lecture Notes in Computer Science Volume 8205*, (Advanced Research in Computing and Software Science series), pp. 585–586, Jerusalem, Israel, Oct 2013.
- [SC17] (\*) I. Eyal, K. Birman, I. Keidar, and R. van Renesse. **Ordering Transactions with Prediction in Distributed Object Store**. In *24th ACM Symposium on Operating Systems Principles (SOSP'13) Poster Session*, Farmington, Pennsylvania, Nov 2013.
- [SC18] (\*) E. Bortnikov, G. Golan-Gueta, E. Hillel, and I. Keidar. **Scaling Concurrent Log-Structured Data Stores**. Poster in *OSDI'14*, Broomfield, CO, Oct 2014.
- [SC19] (\*) A. Spiegelman and I. Keidar. **On Liveness of Dynamic Storage with Infinitely Many Reconfigurations**. Poster in *Int'l Symp. on Distributed Computing (DISC)*, Tokyo, Japan, Oct 2015.



- [SC20] (\*) A. Spiegelman, G. Golan-Gueta and I. Keidar. **Brief Announcement: Transactional Data Structure Libraries.** Proceedings, *28th ACM Symp. on Parallelism in Algorithms and Architectures (SPAA)*, Asilomar State Beach, CA, USA, Jul 2016.
- [SC21] (\*) D. Basin, E. Bortnikov, A. Braginsky, G. Golan-Gueta, E. Hillel, I. Keidar, and M. Sulamy. **Brief Announcement: A Key-Value Map for Massive Real-Time Analytics.** Proceedings, *ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC)*, Chicago, IL, USA, Jul 2016.
- [SC22] R. Gelashvili, I. Keidar, A. Spiegelman, and R. Wattenhofer. **Brief Announcement: Towards Reduced Instruction Sets for Synchronization.** Proceedings, *31st Int'l Symp. on Distributed Computing (DISC)*, Vienna, Austria, Oct 2017.
- [SC23] (\*) A. Rinberg, A. Spiegelman, E. Bortnikov, E. Hillel, I. Keidar, and H. Serviansky. **Brief Announcement: Fast Concurrent Data Sketches.** Proceedings, *ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC)*, Toronto, Canada, Jul 2019.
- [SC24] G. Assa, H. Meir, G. Gueta, I. Keidar, and A. Spiegelman. **Poster: Nesting and Composition in Transactional Data Structure Libraries.** Proceedings, the *25th ACM SIGPLAN Symp. on Principles and Practice of Parallel Programming (PPoPP)*, San Diego, CA, USA, Feb 2020.
- [SC25] (\*) S. Cohen, I. Keidar, and A. Spiegelman. **Brief Announcement: Not a COINcidence: Sub-Quadratic Asynchronous Byzantine Agreement WHP.** Proceedings, *ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC)*, Aug 2020.
- [SC26] (\*) A. Rinberg and I. Keidar. **Brief Announcement: Intermediate Value Linearizability: A Quantitative Correctness Criterion.** Proceedings, *ACM SIGACT-SIGOPS Symp. on Principles of Distributed Computing (PODC)*, Aug 2020.

## Patents

- [P1] E. Bortnikov, O. Shacham, I. Keidar, E. Hillel, and S. Paranjpy. **Management of transactions in a distributed transaction system.** US Patent 9,979,734, May 2018.
- [P2] E. Hillel, M. Arbel, G. Gueta, and I. Keidar. **Automatic lock removal method for scalable synchronization in dynamic data structures.** US Patent 10,078,653, Sep 2018.
- [P3] O. Shacham, E. Bortnikov, I. Keidar, and Y. Gottesman **Method and system for committing transactions in a semi-distributed manner.** US Patent 10,565,184, Feb 2020.