DAN TSAFRIR

Professor
The Feldman Family Chair in Computer Sciences

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Research Interests

System software, computer architecture, hardware-software interactions

Positions

2025–	*The Feldman Family Chair in Computer Sciences*	**Faculty of Computer Science, Technion**
2023–	*Professor*	**Faculty of Computer Science, Technion**
2015–2023	*Associate Professor*	**Faculty of Computer Science, Technion**
2009–2015	*Assistant Professor*	**Faculty of Computer Science, Technion**
2019–2024	*Affiliated Researcher*	**VMware Research, Israel**
2017–2019	*Researcher in residence (sabbatical)*	**VMware Research, Palo Alto, CA**
2006–2009	*Postdoctoral researcher*	**IBM T.J. Watson Research Center, NY**
1998–2006	*Teaching assistant*	**Computer Science Dept., Hebrew University of Jerusalem**
1998–2002	*Lecturer*	**Computer Science Dept., Hadassah College of Technology, Jerusalem**

Academic Degrees

2002 – 2006	*PhD in Computer Science*	**Hebrew University of Jerusalem**
	"Modeling, evaluating, and improving the performance of supercomputer scheduling". Advisor: Dror G. Feitelson	
1998 – 2001	*MSc in Computer Science*	**Hebrew University of Jerusalem**
	"Barrier Synchronization on a Loaded SMP". Advisor: Dror G. Feitelson	
1995 – 1997	*BSc in Computer Science and Math*	**Hebrew University of Jerusalem**
	Magna Cum Laude	

Teaching at the Technion

Operating systems (undergraduate, mandatory)	springs of 2013–2017, winter 2019, springs of 2020–2025
Operating systems engineering (graduate)	springs of 2011–2017, 2020–2025
Linux kernel development in the open source community (graduate)	spring 2024
Digital computer structure (undergraduate)	springs of 2011–2012
Seminar in computer systems (graduate)	spring 2010, winters of 2010–2015
Project in computer systems (graduate, selected students)	continuously
Project in operating systems (graduate, selected students)	continuously

Technion and Departmental Activities

2025–2026	Senate member
2025–	In charge of departmental website
2023–	Member in the departmental curriculum committee

2022–2023	Member in the departmental graduate students committee
2010–2014, 2019–	Head of the computer systems laboratory (CSL)
2019–2025	Organizing departmental yearly student project contest
2020–2021	Head of the technion computer engineering center (TCE)
2015–2017	Member in departmental graduate students committee
2011–2017	Member in the steering committee of CEclub (joint weekly seminar of CS & EE)
2011–2015	Member in departmental computing committee
2011–2015	Member in the computer engineering track committee
2011	Referee in departmental student research day poster contest
2010–2013	Referee in departmental yearly student project contest
2010–2015	Member in departmental safety committee

Other Academic Activities

| 2022–2023 | Advising committee, Software Engineering Department at Azrieli College of Engineering, Jerusalem |

Honors and Awards

2024	ASPLOS Influential Paper Award (https://www.asplos-conference.org/asplos2024/acm-sigarch-sigplan-sigops-asplos-influential-paper-award)
2024	VMware Research Award, $50,000
2023	The Internet Research Task Force (IRTF) 2023 Applied Networking Research Prize (ANRP) (https://www.ietf.org/blog/anrp-2023)
2021	Best paper award, ASPLOS'21: ACM International Conference on Architectural Support for Programming Languages and Operating Systems (https://asplos-conference.org/2021/index.html%3Fp=2592.html)
2020	The Henry Taub Prize for Academic Excellence, $30,000 (https://www.cs.technion.ac.il/news/2020/1200/)
2020	Best paper award, ASPLOS'20: ACM International Conference on Architectural Support for Programming Languages and Operating Systems (https://asplos-conference.org/2020/index.html)
2019	Best paper award, SYSTOR'19: 10th ACM International Systems & Storage Conference (https://www.systor.org/2019/program.html)
2018	ACM EuroSys Annual Jochen Liedtke Young Researcher Award for exceptional creativity and innovation in systems research (https://www.eurosys.org/awards/jochen-liedtke-young-researcher-award)
2017	Best poster award, SYSTOR'17: 10th ACM International Systems & Storage Conference (https://www.systor.org/2017)
2017	VMware Research Award, $40,000
2016	Ray and Miriam Klein Research Prize, for an outstanding research work that contributes to Israel's industry, technology, security or scientific standing, $3,000 (https://manlam.net.technion.ac.il/en/2017/02/08/research-prizes-winners-2016)
2016	VMware Research Award, $40,000
2016	Best poster award, SYSTOR'16: 9th ACM International Systems & Storage Conference (https://www.systor.org/2016)
2015	Google Faculty Research Award, $30,000 (https://research.googleblog.com/2015/08/google-faculty-research-awards-summer.html)
2014	IBM Faculty Award, $25,000 (https://research.ibm.com/university/pdfs/2014_faculty_award_recipients.pdf)

2014	HiPEAC Paper Award, European Network of Excellence on High Performance and Embedded Architecture and Compilation, €1,000 (https://www.hipeac.net/awards/#/paper-awards/2014/)
2014	Best poster award, SYSTOR'14: 7th ACM International Systems & Storage Conference (https://www.systor.org/2014)
2014	The Annual Henri Gutwirth Award for Outstanding Research, $3,000
2013	The Pat Goldberg Memorial Best Paper for 2012 (selected from all IBM CS/EE/Math papers (http://researcher.watson.ibm.com/researcher/view_group.php?id=5855)
2013	Best poster award, SYSTOR'13: 6th ACM International Systems & Storage Conference (https://www.systor.org/2013)
2012	IBM Open Collaborative Research (OCR) Award, $87,000 (https://web.archive.org/web/20150901013700/http://www.research.ibm.com/university/awards/previous_projects.shtml)
2012	HiPEAC Paper Award, European Network of Excellence on High Performance and Embedded Architecture and Compilation, €1,000 (https://www.hipeac.net/awards/#/paper-awards/2012/)
2010	IBM Faculty Award, $14,000
2009	The Pat Goldberg Memorial Best Paper for 2008 (selected from all IBM CS/EE/Math papers http://researcher.watson.ibm.com/researcher/view_group.php?id=5855)
2008	Best paper award, FAST'08: USENIX Conference on File & Storage Technologies, (https://www.usenix.org/legacy/events/fast08/)
2004	Intel/Dean excellence prize for PhD students, $5000
1995 – 1997	Dean's Honorary List, Hebrew University of Jerusalem

Professional Activities

Program (Co-)Chair

ASPLOS '24	ACM International Conference on Architectural Support for Programming Languages and Operating Systems, 2024
ATC '19	Usenix Annual Technical Conference, 2019
VEE '14	ACM International Conference on Virtual Execution Environments, 2014
SYSTOR '12	ACM International Systems & Storage Conference, 2012

Steering Committees

ATC 2025–2027	**Chair**, ACM Annual Technical Conference
ASPLOS 2024–2027	ACM International Conference on Architectural Support for Programming Languages and Operating Systems
VEE 2014–2017	ACM International Conference on Virtual Execution Environments
SYSTOR 2013–present	ACM International Systems & Storage Conference

Program Committees

HotOS '25	ACM SIGOPS Workshop on Hot Topics in Operating Systems
ASPLOS '25 ERC	Extended Review Committee. ACM International Conference on Architectural Support for Programming Languages and Operating Systems
ASPLOS '23	ACM International Conference on Architectural Support for Programming Languages and Operating Systems
OSDI '22	USENIX Symposium on Operating Systems Design and Implementation

ASPLOS '22	ACM International Conference on Architectural Support for Programming Languages and Operating Systems
ATC '21	USENIX Annual Technical Conference
ASPLOS '21	ACM International Conference on Architectural Support for Programming Languages and Operating Systems
EuroSys '20	ACM European Conference on Computer Systems
ATC '19	USENIX Annual Technical Conference
ASPLOS '19	ACM International Conference on Architectural Support for Programming Languages and Operating Systems
OSDI '18	USENIX Symposium on Operating Systems Design and Implementation
ASPLOS '18	ACM International Conference on Architectural Support for Programming Languages and Operating Systems
VEE '18	ACM International Conference on Virtual Execution Environments
ATC '17	USENIX Annual Technical Conference
ASPLOS '17 ERC	Extended Review Committee. ACM International Conference on Architectural Support for Programming Languages and Operating Systems
EuroSys '17	ACM European Conference on Computer Systems
OSDI '16	USENIX Symposium on Operating Systems Design and Implementation
ATC '16	USENIX Annual Technical Conference
ASPLOS '16	ACM International Conference on Architectural Support for Programming Languages and Operating Systems
ATC '15	USENIX Annual Technical Conference
ASPLOS '15	ACM International Conference on Architectural Support for Programming Languages and Operating Systems
EuroSys '15	ACM European Conference on Computer Systems
SoCC '14	ACM Symposium on Cloud Computing
HotCloud '14	USENIX Workshop on Hot Topics in Cloud Computing
JSSPP '14	Workshop on Job Scheduling Strategies for Parallel Processing
TRIOS '13	ACM Conference on Timely Results in Operating Systems
HotCloud '13	USENIX Workshop on Hot Topics in Cloud Computing
ICS '13	ACM International Conference on Supercomputing
ISMM '13 ERC	Extended Review Committee. ACM International Symposium on Memory Management
FAST '13	USENIX Conference on File & Storage Technologies
IPDPS '13	IEEE International Parallel & Distributed Processing Symposium
JSSPP '13	Workshop on Job Scheduling Strategies for Parallel Processing
RESoLVE '13	Workshop on Runtime Environments, Systems, Layering & Virtualized Environments
ICS '12	ACM International Conference on Supercomputing
VEE '12	ACM International Conference on Virtual Execution Environments
IPDPS '12	IEEE International Parallel & Distributed Processing Symposium
JSSPP '12	Workshop on Job Scheduling Strategies for Parallel Processing
VEE '11	ACM International Conference on Virtual Execution Environments
IPDPS '11	IEEE International Parallel & Distributed Processing Symposium

ICCD '11	IEEE International Conference on Computer Design
CAOS '11	Workshop on Computer Architecture & Operating Systems Co-design
ICCD '10	IEEE International Conference on Computer Design
SYSTOR '10	ACM International Systems & Storage Conference
JSSPP '10	Workshop on Job Scheduling Strategies for Parallel Processing
CAOS '10	Workshop on Computer Architecture & Operating Systems Co-design
JSSPP '09	Workshop on Job Scheduling Strategies for Parallel Processing
SYSTOR '09	ACM International Systems & Storage Conference
SBAC-PAD '09	IEEE International Symposium on Computer Architecture & High Performance Computing

Miscellaneous

ASPLOS '16	**Organizer of WACI**, the 13th Wild and Crazy Ideas (Invited Speakers) Session, 2016
ASPLOS '16	**Sponsorship Chair** of the ACM International Conference on Architectural Support for Programming Languages and Operating Systems, 2016
ASPLOS '15	**Organizer and moderator of the Debate Session** of the ACM International Conference on Architectural Support for Programming Languages and Operating Systems, 2015
SYSDAY '13	**Organizer** of the 1st Technion Computer Engineering Center (TCE) Systems Day, 2013

Membership in Professional Societies

Member of	ACM (senior member), USENIX

Postdoctoral and Associate Researchers

Idan Yaniv	2025–
Aviad Zuck	2015–2020, 2023–
Nadav Amit	2014–2015

Graduate Students

Completed Thesis

Nadav Amit	Alleviate virtualization overheads. Co-advisor: Assaf Schuster. **Awarded**: (**i**) 2024 ASPLOS Influential Paper Award. (**ii**) 2015 ACM SIGOPS Dennis M. Ritchie Doctoral Dissertation Award (**iii**) 2014 SPEC Distinguished Dissertation Award. Honorable Mention.	direct track PhD 2014
Igor Smolyar	Security of self-virtualizing devices.	MSc 2014
Yossi Kuperman	vRIO: Virtual remote I/O.	MSc 2014
Eitan Rosenfeld	RAIDP: replication with intra-disk parity. Co-advisor: Michael Factor (IBM).	MSc 2015
Moshe Malka	rIOMMU: efficient IOMMU for I/O devices that employ ring buffers.	MSc 2015
Muli Ben-Yehuda	nom: profit-maximizing OS. **Summa cum laude**.	MSc 2015
Omer Peleg	Utilizing the IOMMU scalably. **Summa cum laude**.	MSc 2015
Ilya Lesokin	The case for I/O page faults. **Magna cum laude**.	MSc 2015
Eyal Moscovici	Sidecore management for virtualized environments. **Magna cum laude**.	MSc 2017

Arthur Kiyanovski	The real difference between emulation and paravirtualization. of high-throughput I/O devices.	MSc 2017
Gil Kupfer	Attacking and exploiting the IOMMU.	MSc 2018
Mohammad Agbarya	Estimating application runtimes using TLB performance metrics.	MSc 2019
Aviv Ben-David	Investigating the difference between emulated and paravirtual network I/O: the strange, untold story.	MSc 2021
Alex Markuze	Characterizing, exploiting, detecting and preventing DMA attacks in the presence of an IOMMU.	direct track PhD 2021
Idan Raz	Model-Based Simulation for SMT Cores.	MSc 2022
Maxim Barsky	PartTLB: dynamic TLB partitioning for SMT processors.	MSc 2022
Ella Sheory	Exploring Advanced Cache Algorithms for the TLB. **Awarded**: Council for Higher Education ("VATAT") Scholarship for Master's Degrees for Outstanding Women in Hi-Tech.	MSc 2023
Idan Yaniv	Improving the Performance and Evaluation Methodology of Virtual Memory Systems.	direct track PhD 2023
Boris Pismenny	Alleviating Memory and CPU Bottlenecks in Hundred Gigabit Networking. Co-advisor: Adam Morisson (TAU). **Awarded**: (**i**) 2024 first place in Feder Family Yearly Award for Best Student Work in Communications Technology, by the Advanced Communication Center (ACC). (**ii**) 2023 Blavatnik Award for Outstanding Israeli Doctoral Candidates in computer Science. (**iii**) 2023 Internet Research Task Force (IRTF) Applied Networking Research Prize (ANRP). (iv) ASPLOS'21 best paper. (**v**) ASPLOS'20 best paper. (**vi**) SYSTOR'19 best paper.	PhD 2024
Igor Smolyar	Improving the Performance of Direct Memory Accesses, Interrupts, and Paravirtualization of High-Performance I/O. **Awarded**: ASPLOS'20 best paper.	PhD 2024
Mohammad Agbarya	What Can be Learned from Mixing Memory Pages of Different Sizes.	PhD 2025
Niv Kaminer	Reducing the latency caused by dynamic huge page management.	MSc 2025

Thesis in Progress

Avidan Borisov	direct track PhD
Itamar Gefen	MSc
Daniel Bransky	MSc
Hosam Morad	MSc
Ofek de Geus	MSc

Grants

2025 – 2026	*IBM Research* Dynamically Utilizing Cloud Storage Tiers for LLM Workloads.	**120K NIS**
2024 – 2025	*IBM Research* Cost-Benefit of Paying for Temporary Storage in Cloud Setups When the Alternative is (Seemingly) Much Cheaper.	**120K NIS**
2022 – 2026	*ISF, Israel Science Foundation* Intelligent Resource Partitioning in Simultaneous Multithreading. 1.2M NIS (300K/year).	**1.2M NIS**
2022 – 2025	*BSF-NSF* Rowhammering Peripherals. United States / Israel Binational Science Foundation (BSF) and National Science Foundation (NSF). Joint BSF-NFS Cyber Security and Privacy Program. With D. Porter (University of North Carolina, Chapel Hill). **$177K** ($59K/year) for D. Tsafrir.	**677K USD**

| 2018 – 2021 | ***BSF-NSF*** | **680K USD** |

Attacking and Defending the Lifespan of Mobile and Embedded Flash Storage. United States / Israel Binational Science Foundation (BSF) and National Science Foundation (NSF). Joint BSF-NFS Cyber Security and Privacy Program. With D. Porter (University of North Carolina, Chapel Hill). **$180K** ($60K/year) for D. Tsafrir.

| 2019 – 2021 | ***Hiroshi Fujiwara Cyber Security Research Center, Technion*** | **300K NIS** |

Memory Access Safety-Checking Tools for Programs that Share Memory with Devices. 300K (150K/year).

| 2018 – 2021 | ***Pazi Foundation*** (Israel Atomic Energy Commission) | **1.2M NIS** |

Uncovering and defending against I/O attacks. In collaboration with Rafael Advanced Defence Systems. **600K** (150K/year) for D. Tsafrir.

| 2018 – 2021 | ***Blavatnik Interdisciplinary Cyber Research Center, Tel Aviv University*** | **560K NIS** |

Memory Access Safety-Checking Tools for Programs that Share Memory with Devices. With Adam Morrison. **131K** (65K/year) for D. Tsafrir.

| 2018 – 2020 | ***Hiroshi Fujiwara Cyber Security Research Center, Technion*** | **350K NIS** |

Secure and Practical Systems to Hide Data with Plausible Deniability. 350K (117K/year).

| 2018 – 2020 | ***Hiroshi Fujiwara Cyber Security Research Center, Technion*** | **350K NIS** |

Intel Software Guarded Extensions. With Eli Biham, Avi Mendelson, and Mark Silberstein. **100K** (33K/year) for D. Tsafrir.

| 2016 – 2017 | ***Intel*** | **45K USD** |

Lab support.

| 2016 – 2018 | ***Mellanox*** | **60K USD** |

Better Performing High-Throughput I/O.

| 2015 – 2018 | ***Horizon 2020**, EU Framework Programme for Research & Innovation* | **6.5M Euro** |

OPERA: Low power heterogeneous architecture for next generation of smart infrastructure and platforms in industrial and societal applications. With partners from HP, IBM, Nallatech, STMicroelectronics, ISMB, CSI Piemonte, Neavia Technologies, TESEO, and Departement De Isère. **€ 363K** (€121K/year) for D. Tsafrir.

| 2015 – 2017 | ***Israel Ministry of Economy*** | **503K NIS** |

HIPER: high Performance VLSI technologies. "Magnet" consortium, consisting of PIs from Israeli academia (Technion, TAU, BIU) and industry (Altair, Ceragon, CEVA, EZchip, Mellanox, Satixfy); **503K NIS** (252K/year) for D. Tsafrir for "Accelerating Virtual I/O".

| 2015 – 2018 | ***BSF-NSF*** | **725K USD** |

Practical Plausibility Deniable Encryption Through Low-Level Storage Device Behavior. United States / Israel Binational Science Foundation (BSF) and the National Science Foundation (NSF). Joint BSF-NFS Cyber Security and Privacy Program. With D. Porter and R. Sion (Stony Brook U.). **$225K** ($75K/year) for D. Tsafrir

| 2014 – 2016 | ***Mellanox*** | **50K USD** |

I/O page faults.

| 2013 – 2016 | ***Israel Ministry of Science & Technology*** | **2M NIS** |

Cyber-secure computer systems: refactoring computer systems for the cyber era. MIST Program for Developing Scientific and Technological Infrastructure in Cyber Security and Advanced Computing. With Y. Etsion, A. Schuster, E. Tromer, and E. Yahav; **400K NIS** (133K/year) for D. Tsafrir.

| 2013 – 2014 | ***Intel*** | **20K USD** |

Lab support.

| 2012 – 2016 | ***ISF**, Israel Science Foundation* | **940K NIS** |

Bare-metal performance for fully-virtualized guests. With A. Schuster; **470K NIS** (117K/year) for D. Tsafrir.

| 2012 – 2015 | ***Intel's Computational Intelligence Center in Israel*** | **1.05M USD** |

Heterogeneous computing platforms – power management, scheduling, software model and

data sharing. With Y. Etsion, R. Ginosar, I. Keidar, I. Keslassy, S. Mannor, and U. Weiser; **$150K** ($50K/year) for D. Tsafrir.

2012 – 2015	***Intel****'s Computational Intelligence Center in Israel*	**300K USD**

Self-learning, predictive computer Systems. With Y. Etsion; **$150K** ($50K/year) for D. Tsafrir.

2012 – 2013	***Maf'at***	**500K NIS**

Cyber-secure systems. With Y. Etsion, A. Schuster, and E. Yahav; **125K NIS** ($125K/year) for D. Tsafrir.

2011 – 2013	***IBM*** *Open Collaboration Research (OCR)*	**174K USD**

Adaptive and resilient cloud infrastructure. With E. Yahav; **$87K** ($44K/year) for D. Tsafrir.

2011 – 2012	***Intel***	**$15K**

Lab support.

2010 – 2013	***FP7***, *European Seventh Framework Programme*	**3.5M Euro**

ENCORE: Enabling technologies for a programmable many-CORE. With A. Mendelson, A Schuster, and partners from BSC, Delft U., FORTH, KTH, and ARM. **€ 136K** (€45K/year) for D. Tsafrir

Refereed Conference and Workshop Publications

[C1]   Dan Tsafrir, Dror G. Feitelson. Barrier synchronization on a loaded SMP using two-phase waiting algorithms. In *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*. April, 2002, Fort Lauderdale, Florida, pages 80–87 (acceptance: 98/258=38.0%)

[C2]   Yoav Etsion, Dan Tsafrir, Dror G. Feitelson. Effects of clock resolution on the scheduling of interactive and soft real-time processes. In *ACM SIGMETRICS International Conference on Measurement and Modeling (SIGMETRICS)*. June, 2003, San Diego, California, pages 172–183 (acceptance: 26/222=11.7%)

[C3]   Yoav Etsion, Dan Tsafrir, Dror G. Feitelson. Desktop scheduling: how can we know what the user wants?. In *ACM International Workshop on Network and Operating Systems Support for Digital Audio and Video (NOSSDAV)*. June, 2004, Kinsale, Ireland, pages 110–115 (acceptance: 24/95=25.3%)

[C4]   Dan Tsafrir, Yoav Etsion, Dror G. Feitelson, Scott Kirkpatrick. System noise, OS clock ticks, and fine-grained parallel applications. In *ACM International Conference on Supercomputing (ICS)*. June, 2005, Cambridge, Massachusetts, pages 303–312 (acceptance: 42/152=27.6%)

[C5]   Dan Tsafrir, Yoav Etsion, Dror G. Feitelson. Modeling user runtime estimates. In *Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP)*. June, 2005, Cambridge, Massachusetts, pages 1–35, Lecture Notes in Computer Science, Volume 3834

[C6]   Dror G. Feitelson, Dan Tsafrir. Workload sanitation for performance evaluation. In *IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS)*. March, 2006, Austin, Texas, pages 221–230 (acceptance: 24/81=29.6%)

[C7]   Dan Tsafrir, Dror G. Feitelson. Instability in parallel job scheduling simulation: the role of workload flurries. In *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*. April, 2006, Rhodes Island, Greece (acceptance: 125/531=23.5%)

[C8]   Dan Tsafrir, Dror G. Feitelson. The dynamics of backfilling: solving the mystery of why increased inaccuracy may help. In *IEEE International Symposium on Workload Characterization (IISWC)*. October, 2006, San Jose, California, pages 131–141 (acceptance: 18/57=31.6%)

[C9]   Yoav Etsion, Dan Tsafrir, Scott Kirkpatrick, Dror G. Feitelson. Fine grained kernel logging with KLogger: experience and insights. In *ACM Europran Conference on Computer Systems (EuroSys)*. March, 2007, Lisbon, Portugal, pages 259–274 (acceptance: 29/131=22.1%)

[C10]   Dan Tsafrir. The context-switch overhead inflicted by hardware interrupts (and the enigma of do-nothing loops). In *ACM Workshop on Experimental Computer Science (ExpCS)*. June, 2007, San-Diego, California (acceptance: 20/40=50.0%)

[C11]   Dan Tsafrir, Yoav Etsion, Dror G. Feitelson. Secretly monopolizing the CPU without superuser privileges. In ***USENIX Security*** *Symposium*. August, 2007, Boston, Massachusetts,

pages 239–256 (acceptance: 23/187=12.3%)

[C12] Dan Tsafrir, Keren Ouaknine, Dror G. Feitelson. Reducing performance evaluation sensitivity and variability by input shaking. In *IEEE International Symposium on Modeling, Analysis, and Simulation of Computer and Telecommunication Systems (MASCOTS)*. October, 2007, Istanbul, Turkey, pages 231–237 (acceptance: 62/187=33.2%)

[C13] Dan Tsafrir, Tomer Hertz, David Wagner, Dilma Da Silva. Portably solving file TOCTTOU races with hardness amplification. In *USENIX Conference on File and Storage Technologies (FAST)*. February, 2008, San Jose, California, pages 189–206, awarded best paper , Pat Goldberg award (acceptance: 21/95=22.1%)

[C14] Dan Tsafrir, Robert W. Wisniewski, David F. Bacon, Bjarne Stroustrup. Minimizing dependencies within generic classes for faster and smaller programs. In *ACM SIGPLAN Conference on Object-Oriented Programming Systems, Languages, and Applications (OOPSLA)*. October, 2009, Orlando, Florida, pages 425–444 (acceptance: 25/144=17.4%)

[C15] Dan Tsafrir. Using inaccurate estimates accurately. In *Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP)*. April, 2010, Atlanta, Georgia, pages 208–221, LNCS Volume 6253, keynote talk

[C16] Nadav Amit, Muli Ben-Yehuda, Dan Tsafrir, Assaf Schuster. vIOMMU: efficient IOMMU emulation. In *USENIX Annual Technical Conference (USENIX ATC)*. June, 2011, Portland, Oregon, pages 73–86 (acceptance: 27/180=15.0%)

[C17] Orna Agmon Ben-Yehuda, Muli Ben-Yehuda, Assaf Schuster, Dan Tsafrir. Deconstructing Amazon EC2 spot instance pricing. In *IEEE International Conference on Cloud Computing Technology and Science (CloudCom)*. November, 2011, Athens, Greece, pages 304–311 (acceptance: 58/237=24.5%)

[C18] Ilia Kravets, Dan Tsafrir. Feasibility of mutable replay for automated regression testing of security updates. In *Workshop on Runtime Environments, Systems, Layering and Virtualized Environments (RESoLVE)*. March, 2012, London, UK

[C19] Abel Gordon, Nadav Amit, Nadav Har'El, Muli Ben-Yehuda, Alex Landau, Assaf Schuster, Dan Tsafrir. ELI: bare-metal performance for I/O virtualization. In *ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*. March, 2012, London, UK, pages 411–422, HiPEAC award paper , Pat Goldberg award , ASPLOS Influential Paper Award (acceptance: 37/172=21.5%)

[C20] Orna Agmon Ben-Yehuda, Muli Ben-Yehuda, Assaf Schuster, Dan Tsafrir. The resource-as-a-service (RaaS) cloud. In *USENIX Workshop on Hot Topics in Cloud Computing (HotCloud)*. June, 2012, Boston, MA (acceptance: 24/75=32.0%)

[C21] Eitan Rosenfeld, Nadav Amit, Dan Tsafrir. Using disk add-ons to withstand simultaneous disk failures with fewer replicas. In *Workshop on the Interaction amongst Virtualization, Operating Systems and Computer Architecture (WIVOSCA)*. June, 2013, Tel Aviv, Israel

[C22] Muli Ben-Yehuda, Omer Peleg, Orna Agmon Ben-Yehuda, Igor Smolyar, Dan Tsafrir. The nonkernel: a kernel designed for the cloud. In *ACM Asia-Pacific Workshop on Systems (APSYS)*. July, 2013, Singapore, pages 4:1–4:7 (acceptance: 20/73=27.4%)

[C23] Nadav Amit, Dan Tsafrir, Assaf Schuster. VSwapper: A memory swapper for virtualized environments. In *ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*. March, 2014, Salt Lake City, UT, pages 349–366, HiPEAC award paper (acceptance: 49/250=19.6%)

[C24] Moshe Malka, Nadav Amit, Dan Tsafrir. Efficient intra-operating system protection against harmful DMAs. In *USENIX Conference on File and Storage Technologies (FAST)*. February, 2015, Santa Clara, CA, pages 29–44 (acceptance: 28/130=21.5%)

[C25] Moshe Malka, Nadav Amit, Muli Ben-Yehuda, Dan Tsafrir. rIOMMU: Efficient IOMMU for I/O devices that employ ring buffers. In *ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*. March, 2015, Istanbul, Turkey, pages 355–368 (acceptance: 48/278=17.3%)

[C26]   Omer Peleg, Adam Morrison, Benjamin Serebrin, Dan Tsafrir. Utilizing the IOMMU scalably. In *USENIX Annual Technioncal Conference (ATC)*. July, 2015, Santa Clara, CA (acceptance: 47/221=21.3%)

[C27]   Igor Smolyar, Muli Ben-Yehuda, Dan Tsafrir. Securing self-virtualizing Ethernet devices. In ***USENIX Security*** Symposium. August, 2015, Washington, D.C. (acceptance: 67/426=15.7%)

[C28]   Nadav Amit, Dan Tsafrir, Assaf Schuster, Ahmad Ayoub, Eran Shlomo. Virtual CPU validation. In *ACM Symposium on Operating Systems Principles (SOSP)*. October, 2015, Monterey, CA, pages 311–327 (acceptance: 30/186=16.1%)

[C29]   Muli Ben-Yehuda, Orna Agmon Ben-Yehuda, Dan Tsafrir. The nom profit-maximizing operating system. In *ACM SIGPLAN/SIGOPS International Conference on Virtual Execution Environments (VEE)*. April, 2016, Atlanta, GA, pages 145–160 (acceptance: 13/39=33.3%)

[C30]   Alex Markuze, Adam Morrison, Dan Tsafrir. True IOMMU protection from DMA attacks: when copy is faster than zero copy. In *ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*. April, 2016, Atlanta, GA, pages 249–262 (acceptance: 53/240=22.1%)

[C31]   Yossi Kuperman, Eyal Moscovici, Joel Nider, Razya Ladelsky, Abel Gordon, Dan Tsafrir. Paravirtual remote I/O. In *ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*. April, 2016, Atlanta, GA, pages 49–65 (acceptance: 53/240=22.1%)

[C32]   Idan Yaniv, Dan Tsafrir. Hash, don't cache (the page table). In *ACM SIGMETRICS International Conference on Measurement and Modeling (SIGMETRICS)*. June, 2016, Antibes Juan-les-Pins, France, pages 337–350 (acceptance: 28/208=13.5%)

[C33]   Ilya Lesokhin, Haggai Eran, Shachar Raindel, Guy Shapiro, Sagi Grimberg, Liran Liss, Muli Ben-Yehuda, Nadav Amit, Dan Tsafrir. Page fault support for network controllers. In *ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*. April, 2017, Xi'an, China, pages 449–466 (acceptance: 56/321=17.4%)

[C34]   Aviad Zuck, Udi Shriki, Donald E. Porter, Dan Tsafrir. Preserving hidden data with an ever-changing disk. In *ACM Workshop on Hot Topics in Operating Systems (HotOS)*. May, 2017, Whistler, Canada, pages 50–55 (acceptance: 29/95=30.5%)

[C35]   Tao Zhang, Aviad Zuck, Donald E. Porter, Dan Tsafrir. Flash drive lifespan *is* a problem. In *ACM Workshop on Hot Topics in Operating Systems (HotOS)*. May, 2017, Whistler, Canada, pages 42–49 (acceptance: 29/95=30.5%)

[C36]   Aviad Zuck, Yue Li, Jehoshua Bruck, Donald E. Porter, Dan Tsafrir. Stash in a flash. In *USENIX Conference on File and Storage Technologies (FAST)*. February, 2018, Oakland CA, pages 169–188 (acceptance: 23/139=16.5%)

[C37]   Alex Markuze, Igor Smolyar, Adam Morrison, Dan Tsafrir. DAMN: overhead-free IOMMU protection for networking. In *ACM International Conference on Architectural Support for Languages and Operating Systems (ASPLOS)*. March, 2018, Williamsburg, VA, pages 301–315 (acceptance: 56/319=17.6%)

[C38]   Aviad Zuck, Tao Zhang, Philipp Guhring, Donald E. Porter, Dan Tsafrir. Why and how to increase SSD performance transparency. In *ACM Workshop on Hot Topics in Operating Systems (HotOS)*. May, 2019, Bertinoro, Italy, pages 192–200 (acceptance: 30/125=24.0%)

[C39]   Tao Zhang, Aviad Zuck, Donald E. Porter, Dan Tsafrir. Apps can quickly destroy your mobile's flash: why they don't, and how to keep it that way. In *ACM International Conference on Mobile Systems, Applications, and Services (MobiSys)*. June, 2019, Seoul, South Korea, pages 207–221 (acceptance: 40/172=23.3%)

[C40]   Stanko Novakovic, Yizhou Shan, Aasheesh Kolli, Michael Cui, Yiying Zhang, Haggai Eran, Boris Pismenny, Liran Liss, Michael Wei, Dan Tsafrir, Marcos Aguilera. Storm: a fast transactional dataplane for remote data structures. In *ACM International Conference on Systems and Storage (SYSTOR)*. June, 2019, Haifa, Israel, pages 97–108, **awarded best paper** (acceptance: 16/44=36.4%)

[C41]   Dan Tsafrir, Dahlia Malkhi. Refreshing ATC. In *USENIX Annual Technical Conference (ATC)*. July, 2019, Renton, WA, pages xi–xxviii (acceptance: 71/356=19.9%)

[C42]   Igor Smolyar, Alex Markuze, Boris Pismenny, Haggai Eran, Gerd Zellweger, Austin Bolen, Liran Liss, Adam Morrison, Dan Tsafrir. IOctopus: outsmarting nonuniform DMA. In *ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*. March, 2020, Lausanne, Switzerland, pages 101–115, **awarded best paper** (acceptance: 86/476=18.1%)

[C43]   Eitan Rosenfeld, Aviad Zuck, Nadav Amit, Michael Factor, Dan Tsafrir. RAIDP: replication with intra-disk parity for cost-effective storage of warm data. In *ACM Europran Conference on Computer Systems (EuroSys)*. April, 2020, Heraklion, Crete, Greece, pages 26.1–26.17 (acceptance: 43/234=18.4%)

[C44]   Mohammad Agbarya, Idan Yaniv, Jayneel Gandhi, Dan Tsafrir. Predicting execution times with partial simulations in virtual memory research: why and how. In *IEEE/ACM International Symposium on Microarchitecture (MICRO)*. October, 2020, Global Online Event, pages 456-470 (acceptance: 82/424=19.3%)

[C45]   Alex Markuze, Shay Vargaftik, Gil Kupfer, Boris Pismenny, Nadav Amit, Adam Morrison, Dan Tsafrir. Characterizing, exploiting, and detecting DMA code injection vulnerabilities in the presence of an IOMMU. In *ACM European Conference on Computer Systems (EuroSys)*. April, 2021, pages 395–409 (acceptance: 40/191=20.9%)

[C46]   Boris Pismenny, Haggai Eran, Aviad Yehezkel, Liran Liss, Adam Morrison, Dan Tsafrir. Autonomous NIC offloads. In *ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*. April, 2021, Detroit, MI, pages 18–35, **awarded best paper** , **2023 IRTF Applied Networking Research Prize** (acceptance: 75/398=18.8%)

[C47]   Nadav Amit, Michael Wei, Dan Tsafrir. Dealing with (some of) the fallout from meltdown. In *ACM International Conference on Systems and Storage (SYSTOR)*. June, 2021, Virtual event, pages 1–6 (acceptance: 16/44=36.4%)

[C48]   Tao Zhang, Boris Pismenny, Donald E. Porter, Dan Tsafrir, Aviad Zuck. Rowhammering storage devices. In *ACM Workshop on Hot Topics In Storage and File Systems (HotStorage)*. July, 2021, Virtual event (acceptance: 15/40=37.5%)

[C49]   Amy Tai, Igor Smolyar, Michael Wei, Dan Tsafrir. Optimizing storage I/O with calibrated interrupts. In *USENIX Symposium on Operating Systems Design and Implementation (OSDI)*. July, 2021, pages 129–145 (acceptance: 31/165=18.8%)

[C50]   Boris Pismenny, Liran Liss, Adam Morrison, Dan Tsafrir. The benefits of general-purpose on-NIC memory. In *ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*. February, 2022, Lausanne, Switzerland, pages 1130–1147 (acceptance: 80/397=20.2%)

[C51]   Aviad Zuck, Donald E. Porter, Dan Tsafrir. Degrading data to save the planet. In *ACM Workshop on Hot Topics in Operating Systems (HotOS)*. June, 2023, Providence, RI, pages 61–69 (acceptance: 31/117=26.5%)

[C52]   Boris Pismenny, Adam Morrison, Dan Tsafrir. ShRing: networking with shared receive rings. In *USENIX Symposium on Operating Systems Design and Implementation (OSDI)*. July, 2023, Boston, MA, pages 949–968 (acceptance: 50/255=19.6%)

[C53]   Avidan Borisov, Nadav Amit, Dan Tsafrir. Batching with end-to-end performance estimation. In *ACM Workshop on Hot Topics in Operating Systems (HotOS)*. May, 2025, Banff, Canada, pages 136–143 (acceptance: 31/150=20.7%)

[C54]   Aviad Zuck, Rob Johnson, Donald E. Porter, Dan Tsafrir. Leveraging software fault tolerance for longer flash hardware lifespan. In *ACM Workshop on Hot Topics in Operating Systems (HotOS)*. May, 2025, Banff, Canada, pages 210–217 (acceptance: 31/150=20.7%)

[C55]   Itamar Gefen, Aviad Zuck, Moshik Hershcovitch, Danny Harnik, Dan Tsafrir. Why paying for storage beats free networking in cloud bursting. In *ACM Workshop on Hot Topics in in Storage and File Systems (HotStorage)*. July, 2025, Boston, MA, pages 31–37 (acceptance: 19/56=33.9%)

[C56] Boris Pismenny, Adam Morrison, Dan Tsafrir. Disentangling the dual role of NIC receive rings. In *USENIX Symposium on Operating Systems Design and Implementation (OSDI)*. July, 2025, Boston, MA, pages 651–669 (acceptance: 48/338=14.2%)

Journal Publications

[J1] Yoav Etsion, Dan Tsafrir, Dror G. Feitelson. Process prioritization using output production: scheduling for multimedia. In *ACM Transactions on Multimedia Computing, Communications and Applications (TOMM)*. November, 2006, pages 318–342, volume 2, number 4

[J2] Dan Tsafrir, Yoav Etsion, Dror G. Feitelson. Backfilling using system-generated predictions rather than user runtime estimates. In *IEEE Transactions on Parallel and Distributed Systems (TPDS)*. June, 2007, pages 789–803, volume 18, number 6

[J3] Maria Butrico, Dilma Da Silva, Orran Krieger, Michal Ostrowski, Bryan Rosenburg, Dan Tsafrir, Eric Van Hensbergen, Robert W. Wisniewski, Jimi Xenidis. Specialized execution environments. In *ACM Operating Systems Review (OSR)*. January, 2008, pages 106–107, volume 42, number 1

[J4] Dan Tsafrir, Dilma Da Silva, David Wagner. The murky issue of changing process identity: revising "setuid demystified". In *USENIX ;login*. June, 2008, pages 55–66, volume 33, number 3

[J5] Dan Tsafrir, Tomer Hertz, Dilma Da Silva, David Wagner. Portably solving file races with hardness amplification. In *ACM Transactions on Storage (TOS)*. November, 2008, pages 9:1–9:30, volume 4, number 3

[J6] Orna Agmon Ben-Yehuda, Muli Ben-Yehuda, Assaf Schuster, Dan Tsafrir. Deconstructing Amazon EC2 spot instance pricing. In *ACM Transactions on Economics and Computation (TEAC)*. September, 2013, pages 16:1–16:20, volume 1, number 3

[J7] Orna Agmon Ben-Yehuda, Muli Ben-Yehuda, Assaf Schuster, Dan Tsafrir. The rise of RaaS: resource-as-as-service cloud. In *Communications of the ACM (CACM)*. July, 2014, volume 57, number 7

[J8] Dror G. Feitelson, Dan Tsafrir, David Krakov. Experience with using the Parallel Workloads Archive. In *Journal of Parallel and Distributed Computing (JPDC)*. October, 2014, pages 2967–2982, volume 74, number 10

[J9] Nadav Amit, Abel Gordon, Nadav Har'El, Muli Ben-Yehuda, Alex Landau, Assaf Schuster, Dan Tsafrir. Bare-metal performance for virtual machines with exitless interrupts. In *Communications of the ACM (CACM)*. January, 2016, CACM research highlight

[J10] Amy Tai, Igor Smolyar, Michael Wei, Dan Tsafrir. Optimizing storage Performance with calibrated interrupts. In *ACM Transactions on Storage (TOS)*. February, 2022, pages 3:1–3:32, volume 18, number 1

Books

[B1] Edouard Bugnion, Jason Nieh, Dan Tsafrir. Hardware and software support for virtualization. In *Morgan and Claypool Publishers*. Synthesis Lectures on Computer Architecture, February, 2017, pages 1–206, volume 12, number 1

Theses

[D1] Dan Tsafrir. Barrier synchronization on a loaded SMP using two-phase waiting algorithms. In *Technical Report 2001-82, School of Computer Science and Engineering, the Hebrew University (MSc Thesis)*. September, 2001, Jerusalem, Israel

[D2] Dan Tsafrir. Modeling, evaluating, and improving the performance of supercomputer scheduling. In *Technical Report 2006-78, School of Computer Science and Engineering, the Hebrew University (PhD Thesis)*. September, 2006, Jerusalem, Israel

Patents

[P1] Dan Tsafrir, Yoav Etsion, David Talby, Dror G. Feitelson. System and method for backfilling

with system-generated predictions rather than user runtime estimates. In ***Patent*** *Number: US 8261283 B2*. February, 2006, **Granted**: September 2012

[P2]   Dan Tsafrir, Robert W. Wisniewski. A method for guaranteeing program correctness using finegrained hardware speculative execution. In ***Patent*** *Number: US 9195550 B2*. February, 2011, **Granted**: November 2015

[P3]   Dan Tsafrir, Eitan Rosenfeld. Using disk add-ons to withstand simultaneous disk failures with fewer replicas. In ***Patent*** *Number: US 9535802 B2*. January, 2013, **Granted**: January 2017

[P4]   Nadav Amit, Dan Tsafrir, Assaf Schuster. Memory swapper for virtualized environments. In ***Patent*** *Number: US 9811268 B2*. February, 2014, **Granted**: November 2017

[P5]   Nadav Amit, Dan Tsafrir, Michael Wei. 32-Bit address space containment to secure processes from speculative rogue cache loads. In ***Patent*** *Number: US 10599835 B2*. April, 2018, **Granted**: March 2020

[P6]   Nadav Amit, Dan Tsafrir, Michael Wei. Separate cores to secure processes from speculative rogue cache loads. In ***Patent*** *Number: US 10713353 B2*. June, 2018, **Granted**: July 2020

[P7]   Nadav Amit, Dan Tsafrir, Michael Wei. Dynamic binary translation to secure processes from speculative rogue cache loads. In ***Patent*** *Number: US 10824717 B2*. June, 2018, **Granted**: November 2020

[P8]   Nadav Amit, Dan Tsafrir, Michael Wei. Compilation-time checks to secure processes from speculative rogue cache loads. In ***Patent*** *Number: US 10878085 B2*. June, 2018, **Granted**: December 2020

[P9]   Dan Tsafrir, Igor Smolyar. Multiple processor computing device with configurable electrical connectivity to peripherals. In ***Patent*** *Number: US 2021/0248092 A1*. April, 2019, **Granted**: August 2021

[P10]   Amy Tai, Igor Smolyar, Dan Tsafrir, Michael Wei, Nadav Amit. Software-controlled interrupts for I/O devices. In ***Patent*** *Number: US 11,068,422 B1*. February, 2020, **Granted**: July 2021

Technical Reports

[TR1]   Dan Tsafrir, Dror G. Feitelson. Workload flurries. In ***Technical Report*** *2003-85, School of Computer Science and Engineering, the Hebrew University*. November, 2003, Jerusalem, Israel

[TR2]   Dan Tsafrir, Yoav Etsion, Dror G. Feitelson. General purpose timing: the failure of periodic timers. In ***Technical Report*** *2005-6, School of Computer Science and Engineering, the Hebrew University*. February, 2005, Jerusalem, Israel

[TR3]   Yoav Etsion, Dan Tsafrir. A short survey of commercial cluster batch schedulers. In ***Technical Report*** *2005-13, School of Computer Science and Engineering, the Hebrew University*. May, 2005, Jerusalem, Israel

[TR4]   David Talby, Dan Tsafrir, Zviki Goldberg, Dror G. Feitelson. Session-based, estimation-less, and information-less runtime prediction algorithms for parallel and grid job scheduling. In ***Technical Report*** *2006-77, School of Computer Science and Engineering, the Hebrew University*. August, 2006, Jerusalem, Israel

[TR5]   Dan Tsafrir, Tomer Hertz, David Wagner, Dilma Da Silva. Portably preventing file race attacks with user-mode path resolution. In ***Technical Report*** *RC24572, IBM T. J. Watson Research Center*. June, 2008, Yorktown Heights, New York

Standards

[STD1]   Robert Klarer, Bjarne Stroustrup, Dan Tsafrir, Michael Wong. SCARY iterator assignment and initialization. In *ISO/IEC **C++ Standards Committee Paper** WG21/N2913=09-0103*. July, 2009, Frankfurt, Germany

[STD2]   Robert Klarer, Bjarne Stroustrup, Dan Tsafrir, Michael Wong. SCARY iterator assignment and initialization revision 1. In *ISO/IEC C++ Standards Committee Paper* *WG21/N2980=09-0170*. October, 2009, Santa Cruz, California

Selected Posters

[POS1]   Dan Tsafrir, Yoav Etsion, Dror G. Feitelson. Stop polling! The case against OS ticks. In *USENIX Symposium on Operating Systems Design and Implementation (OSDI) – Poster Session*. November, 2006, Seattle, Washington

[POS2]   Muli Ben-Yehuda, Dan Tsafrir. Rearchitecting system software for the cloud. In *USENIX Symposium on Operating Systems Design and Implementation (OSDI) – Poster Session*. October, 2012, Hollywood, CA

[POS3]   Yossi Kuperman, Abel Gordon, Joel Nider, Dan Tsafrir. Virtual remote I/O (vRIO). In *ACM International Systems and Storage Conference (SYSTOR) – Poster Session*. June, 2013, Haifa, Israel, **awarded best poster**

[POS4]   Idan Yaniv, Dan Tsafrir. Hash vs. radix page tables. In *ACM International Systems and Storage Conference (SYSTOR) – Poster Session*. June, 2014, Haifa, Israel, **awarded best poster**

[POS5]   Eyal Moscovici, Yossi Kuperman, Joel Nider, Razya Ladelsky, Abel Gordon, and Dan Tsafrir. I/O Core manager for virtual environments. In *ACM International Systems and Storage Conference (SYSTOR) – Poster Session*. June, 2016, Haifa, Israel, **awarded best poster**

[POS6]   Tao Zhang, Aviad Zuck, Donald E. Porter, Dan Tsafrir. Flash drive lifespan *is* a problem. In *ACM International Systems and Storage Conference (SYSTOR) – Poster Session*. May, 2017, Haifa, Israel, **awarded best poster**

Miscellaneous

[M1]   Dan Tsafrir. Synopsis of the ASPLOS '16 wild and crazy ideas (WACI) invited-speakers session. In *ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*. April, 2016, Atlanta, GA, pages 291–294

Selected Talks/Panels

"Wild and Crazy Ideas (WACI) Invited Speakers Session".   **ORGANIZER & CHAIR**
          Apr 2016, Atlanta, GA. **WACI session of ASPLOS'16**: ACM International Conference on Architectural Support for Programming Languages and Operating Systems.

"Paravirtual remote I/O and more".   **INVITED TALK**
          Feb 2016, Sydney, Australia. 4th **Software Systems Summer School of NICTA**—Australia's National Information Communications Technology Research Centre of Excellence.
          Feb 2017, Palo Alto, CA. **VMware Research Group**.
          May 2017, Ramat Gan, Israel. **Bar-Ilan University**.

"It's time: academic systems venues should require authors to make   **ORGANIZER & MODERATOR**
          their code and data publicly available".
          Mar 2015, Istanbul, Turkey. **Debate Panel of ASPLOS'15**: ACM International Conference on Architectural Support for Programming Languages and Operating Systems.

"VSwapper: A memory swapper for virtualized environments".   **INVITED TALK**
          Jun 2014, Haifa, Israel. **Research Highlights Track of SYSTOR'14**: ACM International Systems and Storage Conference.

"Secretly monopolizing the CPU without superuser privileges".   **INVITED TALK**
          Sep 2012, Haifa, Israel. **Technion's Summer School on Computer Security**.

"Using inaccurate estimates accurately".   **KEYNOTE TALK**
          Apr 2010, Atlanta, GA. **Keynote of JSSPP'10**: Workshop on Job Scheduling Strategies for Parallel Processing (co-located with IPDPS'10).

"Portably preventing file race attacks with user-mode path resolution".   **INVITED TALK**
          May 2010, Tel Aviv, Israel. **IBM Research**.

Jun 2010, Haifa, Israel. **Technion's Crypotoday Workshop**.
Sep 2008, Santa Clara, CA. **SNIA Storage Developer Conference**.
May 2008, Manhattan, NY. **Columbia University**.
May 2008, Yorktown Heights, NY. **IBM T.J. Watson Research Center**.

"Backfilling: myths and misconceptions". INVITED TALK
Jun 2007, San Diego, CA. **SDSC**: San Diego Supercomputer Center.

"System noise and OS clock ticks". INVITED TALK
Mar 2006, Boston, MA. **MIT**
Mar 2006, Amsterdam, The Netherlands. **Vrije University**
Mar 2006, Yorktown Heights, NY. **IBM T.J. Watson Research Center**.

"Workload flurries". INVITED TALK
Mar 2005, Haifa, Israel. **IBM Research**