

Asaf Cidon

<http://www.asafcidon.com>

RESEARCH INTERESTS

Software systems, cybersecurity.

EDUCATION

Stanford University Oct 2010 - Jan 2015
PhD, Electrical Engineering
MS, Electrical Engineering
Thesis: Data Durability in Cloud Storage
Advisors: Mendel Rosenblum and Sachin Katti
Technion, Israel Institute of Technology Mar 2007 - Sep 2010
BSc Computer and Software Engineering *Cum Laude*

EXPERIENCE

Columbia University July 2019 - Present
Associate Professor
Assistant Professor
Departments of Electrical Engineering and Computer Science (jointly affiliated)
Member of Data Science Institute
Conducting research in software systems, systems for ML and cybersecurity.
Barracuda Networks Mar 2016 - July 2019
Senior Vice President, Email Protection
Co-GM of Barracuda's email protection business, including email security and archiving. Joined via the acquisition of Sookasa. Co-led Barracuda's Email Protection business: \$200M in revenue, 100 engineers and product managers. Our team built some of the company's top-selling products: 1. Barracuda Sentinel, the industry's first AI for spear phishing and email account takeover. 2. Barracuda Forensics and Incident Response, a platform to identify, investigate and remediate security incidents.
Sookasa (Acquired by Barracuda Networks) Jul 2012 - Mar 2016
CEO and Co-founder
Founded, recruited and managed 20 person startup. Led the design and implementation of a novel cloud file sharing encryption and data leak prevention platform. Raised \$8M from leading investors, including Accel Partners, Andreessen Horowitz and First Round Capital.
Stanford University Oct 2010 - Jan 2015
Research Assistant
Conducted research in distributed storage systems Mendel Rosenblum and Sachin Katti. Work adopted by several companies, including Facebook, Apple, Rubrik, Hortonworks, Tibco, NetApp and Chartbeat.
Google Jul 2009 - Jul 2010
Research Intern
Worked as a researcher at Google's web search team in Israel.

AWARDS

2024 ACM SOSP Distinguished Artifact Honorable Mention
2024 Best Paper of H1'24 from Open Compute's Composible Memory System Group
2024 ACM CIDR Best Paper Award
2022 Usenix OSDI Jay Lepreau Best Paper Award
2022 NSF CAREER Award
2021 Army Research Office Young Investigator Award
2019 Usenix Security Distinguished Paper
2018 ACM EuroSys Best Poster Award
2017 SC Rising Star Award
2013 Usenix ATC Best Student Paper
2011 Sohnis Promising Scientist Award

2011 Finalist, Qualcomm Innovation Fellowship
2010 Leonard J. Shustek Stanford Graduate Fellowship
2009-2010 Technion President's Honors List

PEER-REVIEWED PUBLICATIONS

1. **Rosé: Flexible Replication With Strong Semantics For Partitioned Databases**
Ioannis Zarkadas, Kelly Kostopoulou, Thomas Graham, Junfeng Yang, Philip A. Bernstein, **Asaf Cidon**,
Tamer Eldeeb
CIDR 2026 (ACM Annual Conference on Innovative Data Systems Research)
2. **Radshield: Software Radiation Protection for Commodity Hardware in Space**
Harry Wang, Michelle Ahn, Yonatan Winetraub, Steven Myint, Vandi Verma, Junfeng Yang, **Asaf Cidon**
ASPLOS 2026 (The ACM International Conference on Architectural Support for Programming Languages
and Operating Systems)
Acceptance rate: 10%
3. **DFUSE: Leveraging the Kernel's Page Cache for Userspace-Based Distributed File Systems**
Haoyu Li, Jingkai Fu, Qing Li, Windsor Hsu, **Asaf Cidon**
SOCC 2025 (ACM Symposium on Cloud Computing 2025)
4. **Snap and Replay: A new way to analyze uarch-scale performance bottlenecks for ML accelerators**
Ioannis Zarkadas, Amanda Tomlinson, **Asaf Cidon**, Baris Kasikci, Ofir Weiss
SOCC 2025 (ACM Symposium on Cloud Computing 2025)
5. **Software Runtime for Vast Array of Wimpy Satellites**
Harry Wang, Robert Leo Pendergrast, Kristófer Fannar Björnsson, Anika Somaia, Ezra Landa, Junfeng
Yang, **Asaf Cidon**
HotNets 2025 (24th ACM Workshop on Hot Topics in Networks)
Acceptance rate: 28%
6. **cache_ext: Customizing the Page Cache with eBPF**
Tal Zussman, Ioannis Zarkadas, Jeremy Carin, Andrew Cheng, Hubertus Franke, Jonas Pfefferle, **Asaf
Cidon**
SOSP 2025 (The 31st ACM Symposium on Operating Systems Principles)
Acceptance rate: 18%
Also accepted to Linux Plumber's Conference 2025.
7. **Oasis: Pooling PCIe Devices Over CXL to Boost Utilization**
Yuhong Zhong, Daniel S. Berger, Pantea Zardoshti, Enrique Saurez, Jacob Nelson, Dan R. K. Ports, Antonis
Psistakis, Joshua Fried, **Asaf Cidon**
SOSP 2025 (The 31st ACM Symposium on Operating Systems Principles)
Acceptance rate: 18%
8. **My CXL Pool Obviates Your PCIe Switch**
Yuhong Zhong, Daniel Berger, Pantea Zardoshti, Enrique Saurez, Jacob Nelson, Antonis Psistakis, Joshua
Fried, **Asaf Cidon**
HotOS 2025 (The ACM SIGOPS 20th Workshop on Hot Topics in Operating Systems)
Acceptance rate: 21%
9. **Do Spammers Dream of Electric Sheep? Characterizing the Prevalence of LLM-Generated Malicious
Emails**
Wei Hao, Vincent Rideout, Van Tran, Claire Wang, AnMei Dasbach-Prisk, Alex Chung, M. H. Afifi, Junfeng
Yang, Ethan Katz-Bassett, Grant Ho, **Asaf Cidon**
IMC 2025 (ACM Internet Measurement Conference 2025)
Acceptance rate: 17%
10. **Nazar: Monitoring and Adapting ML Models on Mobile Devices**
Wei Hao, Claire Wang, Lauren Hong, Lingxiao Li, Nader Karayanni, AnMei Dasbach-Prisk, Chengzhi Mao,
Junfeng Yang, **Asaf Cidon**
ASPLOS 2025 (Architectural Support for Programming Languages and Operating Systems)
11. **Fusion: An Analytics Object Store Optimized for Query Pushdown**
Jianan Lu, Ashwini Raina, **Asaf Cidon**, Michael J Freedman
ASPLOS 2025 (Architectural Support for Programming Languages and Operating Systems)

12. **Efficiently Packing Privacy Budget with DPack**
 Pierre Tholoniati, Kelly Kostopoulou, Mosharaf Chowdhury, **Asaf Cidon**, Roxana Geambasu, Mathias Lecuyer, Junfeng Yang
Eurosys 2025 (ACM The European Conference on Computer Systems)
13. **Characterizing the Networks Sending Enterprise Phishing Emails**
Elisa Luo, Liane Young, Grant Ho, Ethan Katz-Bassett, **Asaf Cidon**
PAM 2025 (Passive and Active Measurement Conference)
 Acceptance rate: 30%
14. **Cookie Monster: Efficient On-Device Budgeting for Differentially-Private Ad-Measurement Systems**
 Pierre Tholoniati, Kelly Kostopoulou, Peter McNeely, Prabhpreet Singh Sodhi, Anirudh Varanasi, Benjamin Case, **Asaf Cidon**, Mathias Lecuyer, Roxana Geambasu
SOSP 2024 (ACM Symposium of Operating System Principles)
 Acceptance rate: 17%
Distinguished Artifact Honorable Mention
15. **Energy-Aware Process Scheduling in Linux**
Feitong Qiao, Yiming Fang, **Asaf Cidon**
HotCarbon 2024 (Workshop on Sustainable Computer Systems)
16. **Custom Page Fault Handling With eBPF**
Tal Zussman, Teng Jiang, **Asaf Cidon**
eBPF Workshop 2024 (2nd Workshop on eBPF and Kernel Extensions)
17. **Cloud Actor-Oriented Database Transactions in Orleans**
Tamer Eldeeb, Sebastian Burckhardt, Reuben Bond, **Asaf Cidon**, Junfeng Yang, Philip A. Bernstein
VLDB 2024 (50th International Conference on Very Large Databases)
18. **MGit: A Model Versioning and Management System**
Wei Hao, Daniel Mendoza, Rafael Mendes, Deepak Narayanan, Amar Phanishayee, **Asaf Cidon**, Junfeng Yang
ICML 2024 (2024 International Conference on Machine Learning)
 Acceptance rate: 28%
19. **Managing Memory Tiers with CXL in Virtualized Environments**
Yuhong Zhong, Daniel Berger, Carl Waldspurger, Ryan Wee, Ishwar Agarwal, Rajat Agarwal, Frank Hady, Karthik Kumar, Mark D. Hill, Mosharaf Chowdhury, **Asaf Cidon**
OSDI 2024 (Usenix Symposium on Operating Systems Design and Implementation)
 Acceptance rate: 16%
Awarded Best Paper of H1'24 from Open Compute's Composable Memory System Group
20. **Chablis: Fast and General Transactions in Geo-Distributed Systems**
Tamer Eldeeb, Philip A. Bernstein, **Asaf Cidon**, Junfeng Yang
CIDR 2024 (ACM Annual Conference on Innovative Data Systems Research)
Best Paper Award
21. **Mars Attacks! Software Protection Against Space Radiation**
Harry Wang, Andrei Tumbar, Steven Myint, Vandii Verma, Yonatan Winetraub, Junfeng Yang, **Asaf Cidon**
HotNets 2023 (ACM Workshop on Hot Topics in Networks)
 Acceptance rate: 27%
22. **Turbo: Effective Caching in Differentially-Private Databases**
Kelly Kostopoulou, Pierre Tholoniati, **Asaf Cidon**, Roxana Geambasu, Mathias Lecuyer
SOSP 2023 (ACM Symposium of Operating System Principles)
 Acceptance rate: 19%
23. **RubbleDB: CPU-Efficient Replication with NVMe-oF**
Haoyu Li, Sheng Jiang, Chen Chen, Ashwini Raina, Xingyu Zhu, Changxu Luo, **Asaf Cidon**
ATC 2023 (Usenix Annual Technical Conference)
 Acceptance rate: 18%
24. **Chardonnay: Fast and General Datacenter Transactions for On-Disk Databases**
Tamer Eldeeb, Xincheng Xie, Philip Bernstein, **Asaf Cidon**, Junfeng Yang
OSDI 2023 (Usenix Symposium on Operating Systems Design and Implementation)
 Acceptance rate: 20%

25. **Karma: Resource Allocation for Elastic Demands**
Midhul Vuppapapati, Giannis Fikioris, Rachit Agarwal, **Asaf Cidon**, Anurag Khandelwal, Eva Tardos
OSDI 2023 (Usenix Symposium on Operating Systems Design and Implementation)
Acceptance rate: 20%
26. **Memtrade: Marketplace for Disaggregated Memory on Clouds**
Hasan Al Maruf, Yuhong Zhong, Hongyi Wang, Mosharaf Chowdhury, **Asaf Cidon**, Carl Waldspurger
SIGMETRICS 2023 (ACM SIGMETRICS International Conference on Measurement and Modeling of Computer Systems)
Acceptance rate: 10%
27. **Efficient Compactions Between Storage Tiers with PrismDB**
Ashwini Raina, Jianan Lu, **Asaf Cidon**, Michael J Freedman
ASPLOS 2023 (Architectural Support for Programming Languages and Operating Systems)
Acceptance rate: 27%
28. **XRP: In-Kernel Storage Functions with eBPF**
Yuhong Zhong, Haoyu Li, Yu Jian Wu, Ioannis Zarkadas, Jeffrey Tao, Evan Mesterhazy, Michael Makris, Junfeng Yang, Amy Tai, Ryan Stutsman and **Asaf Cidon**
NVMW 2023 (Annual Non-Volatile Memory Workshop)
Memorable Paper Award Finalist
29. **Treehouse: A Case For Carbon-Aware Datacenter Software**
Thomas Anderson, Adam Belay, Mosharaf Chowdhury, **Asaf Cidon**, Irene Zhang
HotCarbon 2022 (The Workshop on Sustainable Computer Systems Design and Implementation)
30. **Neuroshard: Towards Automatic Multi-objective Sharding with Deep Reinforcement Learning**
Tamer Eldeeb, Zhengneng Chen, **Asaf Cidon**, Junfeng Yang
aiDM 2022 (The Conference on Artificial Intelligence and Data Mining (AIDM))
31. **XRP: In-Kernel Storage Functions with eBPF**
Yuhong Zhong, Haoyu Li, Yu Jian Wu, Ioannis Zarkadas, Jeffrey Tao, Evan Mesterhazy, Michael Makris, Junfeng Yang, Amy Tai, Ryan Stutsman and **Asaf Cidon**
OSDI 2022 (Usenix Symposium on Operating Systems Design and Implementation)
Acceptance rate: 19%
Jay Lepreau Best Paper Award
32. **Roller: Fast and Efficient Tensor Compilation for Deep Learning**
Hongyu Zhu, Ruofan Wu, Yijia Diao, Shanbin Ke, Haoyu Li, Chen Zhang, Jilong Xue, Lingxiao Ma, Yuqing Xia, Wei Tsui, Fan Yang, Mao Yang, Lidong Zhou, **Asaf Cidon** and Gennady Pekhimenko
OSDI 2022 (Usenix Symposium on Operating Systems Design and Implementation)
Acceptance rate: 19%
33. **A Tale of Two Models: Constructing Evasive Attacks on Edge Models**
Wei Hao, Aahil Awatramani, Jiayang Hu, Chengzhi Mao, Pin-Chun Chen, Eyal Cidon, **Asaf Cidon** and Junfeng Yang
MLSys 2022 (The Conference on Machine Learning and Systems)
Acceptance rate: 21%
34. **Hydra: Resilient and Highly Available Remote Memory**
Youngmoon Lee, Hasan Al Maruf, Mosharaf Chowdhury, **Asaf Cidon** and Kang G. Shin
FAST 2022 (Usenix Conference on File and Storage Technologies)
Acceptance rate: 22%
35. **BPF for Storage: An Exokernel-Inspired Approach**
Yuhong Zhong, Hongyi Wang, Yu Jian Wu, **Asaf Cidon**, Ryan Stutsman, Amy Tai and Junfeng Yang
HotOS 2021 (ACM Workshop on Hot Topics in Operating Systems)
Acceptance rate: 25%
36. **Privacy Budget Scheduling**
Tao Luo, Mingen Pan, Pierre Tholoniati, **Asaf Cidon**, Roxana Geambasu and Mathias Lecuyer
OSDI 2021 (Usenix Symposium on Operating Systems Design and Implementation)
Acceptance rate: 20%
37. **Characterizing and Taming Model Instability Across Edge Devices**
Eyal Cidon, Evgenya Pergament, Zain Asgar, **Asaf Cidon** and Sachin Katti
MLSys 2021 (The Conference on Machine Learning and Systems)
Acceptance rate: 24%

38. **Training Robust Tree Ensembles for Security**
Yizheng Chen, Shiqi Wang, Weifan Jiang, **Asaf Cidon** and Suman Jana
Usenix Security 2021 (Usenix Security Symposium)
Acceptance rate: 19%
39. **A Large-scale Analysis of Attacker Activity in Compromised Enterprise Accounts**
Neil Shah, Grant Ho, Marco Schweighauser, Mohamed Ibrahim, **Asaf Cidon** and David Wagner
MLHat 2020 (ACM MLHat: Deployable Machine Learning for Security Defense)
40. **Live Recovery of Bit Corruptions in Datacenter Storage Systems**
Amy Tai, Andrew Kryczka, Shobhit Kanaujia, Kyle Jamieson, Michael J. Freedman and **Asaf Cidon**
NVMW 2020 (Annual Non-Volatile Memory Workshop)
Memorable Paper Award Finalist
41. **High Precision Detection of Business Email Compromise**
Asaf Cidon, Lior Gavish, Itay Bleier, Nadia Korshun, Marco Schweighauser, Alexey Tsitkin
Usenix Security 2019 (Usenix Security Symposium)
Acceptance rate: 19%
42. **Examining Lateral Phishing at Scale**
Grant Ho, **Asaf Cidon**, Lior Gavish, Marco Schweighauser, Vern Paxson, Stefan Savage, Geoff M. Voelker and David Wagner
Usenix Security 2019 (Usenix Security Symposium)
Acceptance rate: 19%
Awarded Distinguished Paper
43. **Live Recovery of Bit Corruptions in Datacenter Storage Systems**
Amy Tai, Andrew Kryczka, Shobhit Kanaujia, Kyle Jamieson, Michael J. Freedman and **Asaf Cidon**
ATC 2019 (Usenix Annual Technical Conference)
Acceptance rate: 20%
44. **Bandana: Using Non-volatile Memory for Storing Deep Learning Models**
Assaf Eisenman, Maxim Naumov, Darryl Gardner, Misha Smelyanskiy, Sergey Pupyrev, Kim Hazelwood, Uladzimir Pashkevich, **Asaf Cidon**, Sachin Katti
SysML 2019 (The Conference on Machine Learning and Systems)
Acceptance rate: 17%
45. **Flashield: a Key-value Cache that Minimizes Writes to Flash**
Assaf Eisenman, **Asaf Cidon**, Evgenya Pergament, Or Haimovich, Mohammad Alizadeh, Ryan Stutsman, Sachin Katti
NSDI 2019 (Usenix Symposium on Networked Systems Design and Implementation)
Acceptance rate: 15%
46. **Reducing DRAM Footprint with NVM in Facebook**
Assaf Eisenman, Darryl Gardner, Islam AbdelRahman, Jens Axboe, Siying Dong, Kim Hazelwood, **Asaf Cidon**, Sachin Katti
NVMW 2019 (Annual Non-Volatile Memory Workshop)
47. **Reducing DRAM Footprint with NVM in Facebook**
Assaf Eisenman, Darryl Gardner, Islam AbdelRahman, Jens Axboe, Siying Dong, Kim Hazelwood, **Asaf Cidon**, Sachin Katti
Systor 2018, highlight paper (The ACM International Systems and Storage Conference)
48. **Reducing DRAM Footprint with NVM in Facebook**
Assaf Eisenman, Darryl Gardner, Islam AbdelRahman, Jens Axboe, Siying Dong, Kim Hazelwood, **Asaf Cidon**, Sachin Katti
Eurosys 2018 (ACM The European Conference on Computer Systems)
Acceptance rate: 16%
Awarded Best Poster
49. **LHD: Improving Cache Hit Rate by Maximizing Hit Density**
Nathan Beckmann, Haoxian Chen, **Asaf Cidon**
NSDI 2018 (Usenix Symposium on Networked Systems Design and Implementation)
Acceptance rate: 16%
50. **Memshare: a Dynamic Multi-tenant Memory Key-value Cache**
Asaf Cidon, Daniel Rushton, Stephen M. Rumble, Ryan Stutsman

ATC 2017 (Usenix Annual Technical Conference)

Acceptance rate: 21%

51. Cliffhanger: Scaling Performance Cliffs in Web Memory Caches

Asaf Cidon, Assaf Eisenman, Mohammad Alizadeh, Sachin Katti

NSDI 2016 (Usenix Symposium on Networked Systems Design and Implementation)

Acceptance rate: 20%

52. Tiered Replication: An Efficient Alternative to Full Cluster Geo-replication

Asaf Cidon, Robert Escriva, Sachin Katti, Mendel Rosenblum, Emin Gun Sirer

ATC 2015 (Usenix Annual Technical Conference)

Acceptance rate: 16%

53. Dynacache: Dynamic Cloud Caching

Asaf Cidon, Assaf Eisenman, Mohammad Alizadeh, Sachin Katti

HotCloud 2015 (Usenix Workshop on Hot Topics in Cloud Computing)

Acceptance rate: 33% Also appears in: HotStorage 2015

54. Copysets: Reducing the Frequency of Data Loss in Cloud Storage

Asaf Cidon, Ryan Stutsman, Stephen M Rumble, Sachin Katti, John Ousterhout, Mendel Rosenblum

ATC 2013 (Usenix Annual Technical Conference)

Acceptance rate: 14%

Awarded Best Student Paper

55. Flashback: Decoupled Lightweight Wireless Control

Asaf Cidon, Kanthi Nagaraj, Sachin Katti, Pramod Viswanath

Sigcomm 2012 (ACM Special Interest Group on Data Communication)

Acceptance rate: 14%

56. MARS: Adaptive Remote Execution for Multi-threaded Mobile Devices

Asaf Cidon, Tomer London, Sachin Katti, Christos Kozyrakis, Mendel Rosenblum

MobiHeld 2011 (ACM MobiHeld: Networking, Systems, and Applications for Mobile Handhelds)

57. Venus: Verification for Untrusted Cloud Storage

Alexander Shraer, Christian Cachin, **Asaf Cidon**, Idit Keidar, Yan Michalevsky, Dani Shaket

CCSW 2010 (ACM Cloud Computing Security Workshop)

PATENTS

1. System and method for email account takeover detection and remediation utilizing AI models

Mohamed Hosam Afifi Ibrahim, Marco Schweighauser, **Asaf Cidon**

US Patent Application 16/949,863, November 2020

2. System and method for email account takeover detection and remediation utilizing anonymized datasets

Mohamed Hosam Afifi Ibrahim, Marco Schweighauser, **Asaf Cidon**

US Patent Application 16/949,864, November 2020

3. System and method for email account takeover detection and remediation

Marco Schweighauser, Lior Gavish, Itay Bleier, **Asaf Cidon**

US Patent Application 16/947,074, July 2020

4. System and method for electronic messaging threat scanning and detection

Asaf Cidon, Lior Gavish, Michael Perone

US Patent Application 15/693,367, July 2017

5. System and method for AI-based anti-fraud user training and protection

Asaf Cidon, Lior Gavish, Michael Perone

US Patent Application 15/693,353, July 2017

6. System and method for AI-based real-time communication fraud detection and prevention

Asaf Cidon, Lior Gavish, Michael Perone

US Patent Application 15/693,318, July 2017

7. Distrubted encryption and access control scheme in a cloud environment

Asaf Cidon, Israel Cidon, Lior Gavish, Prabandham Madan Gopal, Chandrashekhar Shetty

US Patent 9373001, June 2016

8. **Robust restoration of passphrases from partial information**
Israel Cidon, **Asaf Cidon**, Lior Gavish
US Patent Application 15/077,965, March 2016
9. **Modification of files within a cloud computing environment**
Asaf Cidon, Gopal Madan Prabandham, Israel Cidon, Shetty Chandrashekhhar, Lior Gavish, Barak Srour
US Patent Application 20140019497, January 2014
10. **Encrypting files within a cloud computing environment**
Asaf Cidon, Gopal Madan Prabandham, Israel Cidon, Shetty Chandrashekhhar, Lior Gavish, Barak Srour
US Patent 9262643, December 2012
11. **System, method and computer readable medium for file management**
Asaf Cidon, Gopal Madan Prabandham, Israel Cidon, Shetty Chandrashekhhar, Lior Gavish, Barak Srour
US Patent 8977661, December 2012
12. **Generating additional content**
Ziv Bar-Yossef, David Kadouch, Michal Levin, Tomer Shmiel, Tal Cohen, David Oren, Adi Mano, Philip A. McDonnell, Eran Ofek, Haran Pilpel, **Asaf Cidon**, Yossi Matias, Marissa Ann Mayer
US Patent Application 20160026727, June 2011
13. **Cloud Based Operating and Virtual File System**
Asaf Cidon
US Patent 8527549, February 2011

Graduated PhD Students

Haoyu Li: 2021-2025. First job: Google Systems Research Group (SRG).
Ioannis Zarkadas: 2021-2025. First job: Google AI compilers research team.
Kelly Kostopoulou: 2020-2025. Avanessians graduate fellow. First job: Meta systems research group.
Tamer Eldeeb (co-advised with Junfeng Yang): 2019-2025. First job: stealth startup.

Current PhD Students

Edward Guo (co-advised with Kostis Kaffes): starting fall 2025.
Tal Zussman: started fall 2023. NSF GRFP fellow.
Yuhong Zhong: started fall 2022.
Harry Wang (co-advised with Junfeng Yang): started fall 2022. NSF GRFP fellow and DoD NDSEG fellow.
Wei Hao (co-advised with Junfeng Yang): started spring 2021. Graduating fall 2025. CAIT Amazon fellow.

Graduated MS Students

Teng Jiang: started 2024. First job: PhD at UCLA
Leo Qiao: started 2024. First job: AWS.
Claire Wang, 2023. First job: startup.
Sheng Jiang, 2023. First job: PhD at CMU.
Xincheng Xie, 2023. First job: PhD at Wisconsin.
Nader Karayanni, 2023. First job: startup.
Josh Haskins, 2023. First job: startup.
Rahul Chaudhari, 2022. First job: Amazon AWS.
Yuhong Zhong, 2021. First job: PhD at Columbia.
Liane Young (co-advised with Ethan Katz-Bassett), 2021. First job: Viasat.
Yu Jian Wu, 2021. First job: stealth startup.
Tao Luo, 2021. First job: PhD at UPenn.
Hongyi Wang, 2021. First job: SMBC.
Yifan Liu (co-advised with Ethan Katz-Bassett), 2020. First job: Facebook.

Current MS Students

Ifesi Onubogu: started 2025.
Kristofer Fannar Bjornsson: started 2024.

Graduated Undergrads

Jeremy Carin, 2024. First job: PhD at MIT.
Andy Cheng, 2024. First job: PhD at Harvard
Tal Zussman, 2023. First job: PhD at Columbia.
Elisa Luo (co-advised with Ethan Katz-Bassett), 2023. First job: PhD at UCSD
Shruti Verma, 2023. First job: MS at Stanford.
Chen Chen, 2021. First job: Hudson River Trading.

Current Undergrads

Chelsea Rania Soemitro, started 2024. Shreya Somayajula, started 2024.
Jingkai Fu, started 2024.

TEACHING

Spring 2025 Undergrad/MS Course: CSEE 4121 Computer Systems for Data Science, taught two sections
Instructor rating: 4.32/5.0, course rating: 3.95/5.0, students: 171
Spring 2024 MS/PhD Seminar: EECS 6897, Extensible Operating Systems: From Exokernels to eBPF
Instructor rating: 4.8/5.0, course rating: 4.6/5.0, students: 11
Fall 2022 MS/PhD Seminar: EECS 6897, Topics in Cloud Data Infrastructure
Instructor rating: 5.0/5.0, course rating: 5.0/5.0, students: 12
Spring 2022 Undergrad/MS Course: CSEE 4121 Computer Systems for Data Science
Instructor rating: 4.07/5.0, course rating: 3.73/5.0, students: 165
Fall 2021 MS/PhD Seminar: EECS 6897, Topics in Distributed Storage Systems
Instructor rating: 5.0/5.0, course rating: 4.83/5.0, students: 16
Fall 2020 MS/PhD Seminar: EECS 6897, Topics in Distributed Storage Systems
Instructor rating: 4.5/5.0, course rating: 4.5/5.0, students: 8
Spring 2020 Undergrad/MS Course: CSEE 4121 Computer Systems for Data Science
No final evaluations due to COVID, including mid-semester evaluations below
Instructor rating: 4.24/5.0, course rating: 4.04/5.0, students: 138
Fall 2019 MS/PhD Seminar: EECS 6897, Topics in Distributed Storage Systems
Instructor rating: 4.38/5.0, course rating: 4.38/5.0, students: 12

FUNDING

Google Gift, 2025-2026
“pdslib: Making Private Aggregation a First-Order API in Modern Operating Systems”
Roxana Geambasu (PI), Asaf Cidon, total: \$80K, my share: \$40K
NSF CAREER Award, 2022-2026
“In-Kernel Execution of Storage Functions”
Asaf Cidon (PI), total: \$508K
IBM Award, 2022-2025
“Reducing Software Bloat in Datacenters with eBPF”
Asaf Cidon (PI), total: \$375K
NSF CORE Medium Grant, 2021-2025
“The Case for Blended Storage”
Asaf Cidon (PI), Michael J. Freedman, total: \$750K, my share: \$375K
NSF/VMware Sustainable Datacenter Grant, 2021-2025
“Foundations of Clean and Balanced Datacenters: Treehouse”
Tom Anderson (PI), Adam Belay, Mosharaf Chowdhury, Asaf Cidon, Irene Zhang, total: \$3M, my share: \$680K
Intel Gift, 2023-2024
“Improving Performance With CXL”
Asaf Cidon (PI), total: \$180K
Intel Gift, 2022
“Accelerating Data Pipelines with eBPF”
Asaf Cidon (PI), total: \$90K
ARO Young Investigator Award, 2021-2024
“Leveraging Heterogeneous Storage for Faster and Cheaper Computing Infrastructure”

Asaf Cidon (PI), total: \$360K
Columbia Center of AI Technology + Amazon, 2022-2023
“A Tale of Two Models”
Junfeng Yang (PI), Asaf Cidon, total: \$150K, my share: \$75K
Intel Equipment Gift, 2020
Asaf Cidon (PI), donation of Intel Optane prototype
Facebook Systems for Machine Learning, 2020
“Concerto: Generating Embeddings with Systems-level Objectives”
Asaf Cidon (PI), Suman Jana and Junfeng Yang, total: \$50K, my share: \$17K
Western Digital Corporation gift, 2019
“Transparently Using LLF to Replace DRAM in Hyper-scale Datacenters”
Asaf Cidon (PI), total: \$60K

SELECTED TALKS

Customizing the OS Storage and Memory Stacks With eBPF
Keynote Speaker: 16th Annual Non-Volatile Memories Workshop (NVMW'25), March 2025
MIT CSAIL, February 2025
University of Pennsylvania, October 2024
UC Berkeley, October 2024
Back to the future! Revisiting old extensible kernel ideas with eBPF on Linux
Carnegie Mellon University, March 2024
TreeHouse: Foundations of Clean and Balanced Datacenters
IBM-Columbia Workshop on Sustainability, May 2022
Using Machine Learning to Stop Social Engineering
Federal Bureau of Investigations, March, 2021
High Precision Detection of Business Email Compromise
Usenix Security'19, August 2019
UC Berkeley, April 2018
New York University, March 2018
Cornell Tech, February 2018
Princeton University, January 2018
Columbia University, December 2017
Harvard University, November 2017
LHD: Improving Cache Hit Rate by Maximizing Hit Density
NSDI'18, April 2018
Austin University, June 2018
Memshare: a Dynamic Multi-tenant Memory Key-value Cache
Usenix ATC'17, July 2017
SSD is often too reliable: The case for flexible coding
Stanford University, March 2017
Cliffhanger: Scaling Performance Cliffs in Web Memory Caches
NSDI'16, March 2016
Princeton University, June 2016
Cornell Tech, June 2016
Cache OS: Data Center Dynamic Cache Management
Facebook's Database Group, October 2015
Dynacache: Dynamic Cloud Caching
HotCloud'15 and HotStorage'15, August 2015
Tiered Replication: A Cost-effective Alternative to Full Cluster Geo-replication
Usenix ATC'15, August 2015
Controlling the Frequency of Data Loss in Cloud Storage
Stanford University Oral Defense, October 2014
Tiered Replication: Two Plus One Replicas are More Durable than Three
SEDCL Retreat, June 2014
Copysets: Reducing the Frequency of Data Loss in Cloud Storage
Usenix ATC'13, June 2013
Flashback: Decoupled Lightweight Wireless Control

Sigcomm'12, September 2012
Technion - Israel Institute of Technology, December 2011
MinCopysets: Derandomizing Replication in Cloud Storage
UC Berkeley, September 2012
Technion - Israel Institute of Technology, July 2012
IBM Research Storage Group, July 2012
Facebook HDFS/HBase Team, June 2012
NetApp Advanced Technology Group (ATG), June 2012
Crossing Device Boundaries with Wireless P2P
Qualcomm, August 2011
MARS: Adaptive Remote Execution Scheduler for Multithreaded Mobile Devices
Mobiheld'11, June 2011

SELECTED PRESS COVERAGE

[CNBC](#) [NY Times](#) [SC Magazine](#) [NBC News](#) [Forbes](#) [NBC Business Insider](#) [Dark Reading](#)

PHD THESIS DEFENSE COMMITTEE

Ashwini Raina (Princeton University), 2024, Advisor: Michael J Freedman.
Dissertation: "Rethinking System Design With Awareness for Cross-Layer Aspects of Datacenter Storage".
Jan Janak (Columbia University), 2023. Advisor: Henning Schulzrinne.
Dissertation: "Towards Self-Managing Networked Cyber-Physical Systems".
Hasan Al Maruf (University of Michigan), 2022. Advisor: Mosharaf Chowdhury.
Dissertation: "Practical Memory Disaggregation".
Amos Imbati Alubala (Columbia University), 2022. Advisor: Sal Stolfo.
Dissertation: "Toward A Secure Account Recovery: Machine Learning Based User Modeling for Protection of Account Recovery".
Dennis Roellke (Columbia University), 2022. Advisor: Sal Stolfo.
Dissertation: "Defense: Detection, Triage, and Attribution of Modern Phishing Campaigns"
Tian Zhang (University of Utah), 2021. Advisor: Ryan Stutsman.
Dissertation: "Toward Fine-grained Stateful Cloud Computing".
Todd Arnold (Columbia University), 2020. Advisor: Ethan Katz-Bassett.
Dissertation: "Understanding Cloud Network Performance".
Morteza Ashraphijuo (Columbia University), 2020. Advisor: Xiaodong Wang.
Dissertation: "Low-rank Tensor Completion - Fundamental Limits and Efficient Algorithms".

PHD THESIS PROPOSAL / CANDIDACY EXAM COMMITTEE

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Vikram Nitin (Columbia University), 2022. Advisor: Baishakhi Ray.
Dennis Roellke (Columbia University), 2022. Advisor: Sal Stolfo.
Hasan AlMaruf (University of Michigan), 2022. Advisor: Mosharaf Chowdhury.
Tamer Eldeeb (Columbia University), 2021. Advisors: Asaf Cidon and Junfeng Yang.
Lior Zeno (Technion, Israel Institute of Technology), 2020. Advisor: Mark Silberstein.

ACADEMIC SERVICE

Program Committee Member, Conferences:

Usenix Operating Systems Design and Implementation 2022-2023, 2026
ACM International Conference on Architectural Support for Programming Languages and Operating Systems 2025
Usenix Networked System Design and Implementation 2019-2022
ACM Symposium on Cloud Computing 2021
ACM EuroSys 2020
Usenix Annual Technical Conference 2019

Program Committee Member, Workshops:

Workshop on eBPF and Kernel Extensions 2024

HotCarbon: Workshop on Sustainable Computer Systems Design and Implementation 2022-2024

Reviewer, Journals:

ACM Transactions on Storage 2021-2024

IEEE Transactions on Mobile Computing 2015

UNIVERSITY SERVICE

Steering Committee Co-chair, IBM-Columbia Center for Sustainable Computing, 2023-2025

Member, Departmental Faculty Search Committee, 2022-2024

Member, Departmental Computer Engineering Committee, 2020-2024

Member, Departmental MS Recruiting Committee, 2019-2024

Member, Departmental Website Committee, 2019-2024

Member, Departmental Computing Committee, 2022-2023

Organizer, Computer Systems Seminar, 2020-2022