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Yuhong Zhong

RESEARCH INTERESTS

Software systems, memory tiering, CXL, storage systems, eBPF

EDUCATION

2022-Present	Columbia University , New York, NY Ph.D., Computer Science Advisor: Asaf Cidon
2019-2021	Columbia University , New York, NY M.S., Computer Science
2015-2019	Harbin Institute of Technology, Harbin, China B.Eng., Computer Science and Technology

PUBLICATIONS

- Beware, PCIe Switches! CXL Pools Are Out to Get You Yuhong Zhong, Daniel S. Berger, Pantea Zardoshti, Enrique Saurez, Jacob Nelson, Antonis Psistakis, Joshua Fried, Asaf Cidon HotOS 2025 (ACM Workshop on Hot Topics in Operating Systems) Acceptance rate: 21%
- 2. Managing Memory Tiers with CXL in Virtualized Environments Yuhong Zhong, Daniel S. 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%
- BPF-oF: Storage Function Pushdown Over the Network
 Ioannis Zarkadas*, Tal Zussman*, Jeremy Carin, Sheng Jiang, Yuhong Zhong, Jonas Pfefferle,
 Hubertus Franke, Junfeng Yang, Kostis Kaffes, Ryan Stutsman, Asaf Cidon (* equal
 contribution)
 In Submission
- 4. Memtrade: Marketplace for Disaggregated Memory Clouds Hasan Al Maruf, Yuhong Zhong, Hongyi Wang, Mosharaf Chowdhury, Asaf Cidon, Carl Waldspurger
 SIGMETRICS 2023 (ACM International Conference on Measurement and Modeling of Computer Systems) Acceptance rate: 10%

- 5. 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, Asaf Cidon OSDI 2022 (USENIX Symposium on Operating Systems Design and Implementation) Acceptance rate: 19% Jay Lepreau Best Paper Award
- 6. BPF for Storage: An Exokernel-Inspired Approach Yuhong Zhong*, Hongyi Wang*, Yu Jian Wu*, Asaf Cidon, Ryan Stutsman, Amy Tai, Junfeng Yang (* equal contribution) HotOS 2021 (ACM Workshop on Hot Topics in Operating Systems) Acceptance rate: 25%

AWARDS

2023	Memorable Paper Award Finalist, Non-Volatile Memories Workshop (NVMW) 2023
2022	Jay Lepreau Best Paper Award, USENIX OSDI 2022
2019	Outstanding Graduate Award, Harbin Institute of Technology

TEACHING

2020 Fall **EECS E6897: Topics in Distributed Storage Systems**, Columbia University *Teaching Assistant* Instructor: Asaf Cidon Graduate-level research seminar course (~10 students) on distributed systems. The topics include file systems, consistency and consensus, synchronization, replication, erasure coding, caching, memory disaggregation, deduplication, and systems + machine learning.

WORK EXPERIENCE

2024-2025	Microsoft	Remote
	Software Design Engineer 2 (Part-Time Contractor, Hired Thro	ough Populus Group), Azure
	Hardware Architecture	
	Mentors: Daniel S. Berger, Pantea Zardoshti	
	Building software for CXL memory pooling prototype and res	earching CXL memory sharing.
2024 Summer	Microsoft	Redmond, WA
	Research Intern, Azure Research - Systems	
	Mentors: Daniel S. Berger, Pantea Zardoshti	
	Built several software components to prototype CXL memory p	pooling to study its performance
	implications and benefits.	
2023-2024	Microsoft	Remote
	Software Design Engineer 1 (Part-Time Contractor, Hired Thro	ugh Populus Group), Azure
	Hardware Architecture	
	Mentor: Daniel S. Berger, Mark D. Hill	
	Evaluated the performance of CXL memory devices and design	ned software systems for Intel
	Flat Memory Mode to mitigate outlier performance and avoid	interference.

2021-2022	VMware	Palo Alto, CA
	Member of Technical Staff, vSAN Group	
	Developed transaction and crash recovery support for SplinterDB,	which was integrated into
	vSAN Express Storage Architecture.	
2020	TuSimple	Tucson, AZ
	Software Engineer Intern, Sensor Software Team	
	Built visualization tools and new features for the data-processing pi	peline of self-driving trucks.

TALKS

	Managing Memory Tiers with CXL in Virtualized Environments
08/2024	Open Compute Project (OCP), Composable Memory System
07/2024	USENIX OSDI 2024
02/2024	Azure Research - Systems, Microsoft
01/2024	Xeon Memory Tiering Working Group, Intel
	Limitations of PEBS for Tracking Main Memory Requests
05/2023	Open Compute Project (OCP), Composable Memory System
03/2023	Azure Research - Systems, Microsoft
	XRP: In-Kernel Storage Functions with eBPF
04/2024	Brown University Systems Seminar
04/2024	Northeastern University Systems Seminar
03/2024	Harvard University Systems Seminar
03/2024	University of Wisconsin-Madison Systems Reading Group
02/2024	University of Washington Systems Seminar
02/2024	UCSD Big Arch Seminar
09/2023	Cornell University Systems Seminar
03/2023	Microsoft Research Asia ACE Talk Series
03/2023	Non-Volatile Memory Workshop (NVMW) 2023
10/2022	Meta Systems Talk
09/2022	eBPF Summit 2022
07/2022	USENIX OSDI 2022
	BPF for Storage: An Exokernel-Inspired Approach
06/2021	ACM HotOS 2021

ACADEMIC SERVICE

2024	Reviewer: Journal of Systems Architecture
2023	Reviewer: ACM Transactions on Architecture and Code Optimization (TACO)

MENTORING

2024-Present	Patrick Tong, Columbia University
2024-Present	Sam Edwards, Columbia University
2023-2024	Ryan Wee, Columbia University
2023-2024	Phoebe Lu, Columbia University (Now: Flatiron Health)
2023-2023	Helen Chu, Columbia University
2022-2023	Shruti Verma, Columbia University (Now: M.S. student in CS at Stanford University)

OUTREACH

2023-Present	Co-Organizer: Students @ Systems
2023-2023	Co-Organizer : Queers in STEM (<i>q</i> STEM) at Columbia University
2022-2023	Reviewer: Pre-Application Review Program for PhD Applicants (PAR), Columbia University