Ziyang Jiao
Department of Electrical Engineering and Computer Science
Syracuse University, New York

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LinkedIn Profile

Education

•Syracuse University, New York *Aug 2020 – Now*
Ph.D. in Computer & Information Science & Engineering (GPA: 3.8/4.0)

•Washington University in St. Louis, Missouri *Aug 2019 – Aug 2020*
M.S. in Computer Science (GPA: 4.0/4.0)

Skills

Core: Storage Systems, Flash-based Storage, RAID Systems, Operating Systems, NVMe
Programming languages: C, C++, Python, HTML5
File systems: in-place update FSs (ext4), LFSs (f2fs), file system utilities (e2fsprogs, f2fs-tools)
Tracing: kernel (BCC Tools, bpftrace), block I/O (blktrace, blkparse, btrecord, btreplay), performance (perf)
Virtualization platforms: QEMU
Databases: Transactional & analytical databases (RocksDB, LevelDB)

Publications and Talks

Ziyang Jiao and Bryan S. Kim. "Asymmetric RAID: Rethinking RAID for SSD Heterogeneity." *In ACM Workshop on Hot Topics in Storage and File Systems, 2024.*

Ziyang Jiao, Xiangqun Zhang, Hojin Shin, Jongmoo Choi, and Bryan S. Kim. "The Design and Implementation of a Capacity-Variant Storage System." *In USENIX Conference on File and Storage Technologies, 2024.*

Ziyang Jiao, Janki Bhimani, and Bryan S. Kim. "Wear Leveling in SSDs Considered Harmful." *In ACM Workshop on Hot Topics in Storage and File Systems, 2022 (Best Paper Award).*

Ziyang Jiao and Bryan S. Kim. "Generating Realistic Wear Distributions for SSDs." *In ACM Workshop on Hot Topics in Storage and File Systems, 2022.*

Ziyang Jiao and Bryan S. Kim. "The Fast-Forwardable SSD Aging Framework." *In USENIX Conference on File and Storage Technologies, 2022 (WiP).*

Experience and Internship

•Syracuse University *May 2020 – Now*
Research Assistant Syracuse, NY
- Advisor: Prof. Bryan S. Kim
- **All-flash array and RAID systems**: optimizing system performance and storage utilization by exploiting device heterogeneity from a larger SSD pool.
- **Aging-resilient storage systems**: exploiting the tradeoffs among capacity, performance, and reliability (CPR) in SSDs for performance stability and aging-resilience (NSF Award # 2008453, NSF IUCRC-ASIC5).
- **Self-learning storage systems**: imbuing intelligence to the storage devices so that they can self-learn, self-configure, and self-manage.
- **Next-generation storage stack with FDP/ZNS devices**: exploring the design of a storage stack using FDP (Flexible Data Placement)/ZNS devices instead of traditional block devices.

•Syracuse University *Aug 2024 – Aug 2025*
Teaching Assistant Syracuse, NY
- Advisor: Prof. Bryan S. Kim
- Course link: CIS 341 - Computer Organization & Programming Systems
- Topics: Digital logic, data types and their representations, instruction set architecture, assembly language, program construction, CPU potpourri, memory hierarchy, privilege and security, input-output subsystems.

•Washington University in St. Louis *Jan 2020 – Aug 2020*
Teaching Assistant St. Louis, MO
- Advisor: Prof. Chien-Ju Ho
- Course link: CSE 417T - Introduction to Machine Learning
- Topics: Generalization in finite and infinite hypothesis spaces; Linear models; Nonlinear transformations of data; Overfitting; Modern supervised learning techniques.

•Chinese Academy of Sciences (CAS) *Nov 2018 – Jan 2019*

Research Assistant Beijing, China

– Advisor: Prof. Chao Liu

– Laboratory for Face Recognition Based on Matlab+PCA+SVM.

– Model: supporting vector machine (SVM), neural network (ANN), generative adversarial networks (GAN)

Academic Services

Artifact evaluation committee member, USENIX Conference on File and Storage Technologies (FAST) 2024

Honors and Awards

ECS Research Day Honorable Award 2024

Best Paper Award Nominee, ACM Workshop on Hot Topics in Storage and File Systems (HotStorage) 2022

Syracuse University Ph.D. Fellowship 2020, 2022

Outstanding Graduates 2019

Distinguished Undergraduate Thesis 2019

National Scholarship 2016

Outstanding Student Scholarship (school-level) 2015,2016,2017,2018