

## Ziyang Jiao

Department of Electrical Engineering and Computer Science  
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🌐 LinkedIn Profile

## EDUCATION

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### •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

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**Core:** Storage Systems, Flash-based Storage, RAID Systems, Operating Systems, NVMe

**Programming languages:** C, C++, Python, HTML5

**Virtualization platforms:** QEMU

**Tracing:** kernel (BCC Tools, bpftrace), block I/O (blktrace, blkparse, btrecord, bt replay), performance (perf)

**File systems:** in-place update FSs (ext4), LFSs (f2fs), file system utilities (e2fsprogs, f2fs-tools), file fragmentation

**Databases:** Transactional & analytical databases (RocksDB, LevelDB, MySQL)

## PUBLICATIONS AND TALKS

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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 (Awarded with artifact badges)*.

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

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### •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.
- **Capacity-variant 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**

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

**HONORS AND AWARDS**

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**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