

Sijie Lan

W341 Westgate Building
University Park, PA 16802, USA
(+1) 646-691-0456

sijielan.github.io
sijielan@gmail.com

RESEARCH AREAS

My research focuses on I/O stack optimization, including storage systems (such as F2FS and Btrfs) and storage devices (ZNS and FDP). I also study storage systems to improve efficiency and reliability. My goal is to develop reliable and efficient storage systems that fully utilize underlying device features.

EDUCATION

The Pennsylvania State University <i>Ph.D. student in Computer Science and Engineering (advisor: Prof. Mahmut Kandemir)</i>	Aug, 2021 – May, 2026 University Park, USA
Xiamen University <i>M.Eng. in Computer Technology (advisor: Prof. Suzhen Wu)</i>	Sept, 2018 – June, 2021 Xiamen, China
Zhejiang Sci-Tech University <i>B.Eng. in Computer Science and Technology</i>	Sept, 2013 – June, 2017 Hangzhou, China

RESEARCH EXPERIENCE

Optimization on Zoned Namespace SSDs. <i>Research Assistant</i>	Sept, 2023 – Present Penn State, USA
<ul style="list-style-type: none">• New I/O Interface Beyond Block Abstraction: Improve I/O stack efficiency and CPU utilization by redesigning the storage interface beyond traditional block-based abstractions. [Under Review]• Mapping Strategies for Emerging ZNS Devices: Design efficient logical-to-physical mapping mechanisms to improve space utilization and performance on zoned storage devices. [Under Review]• Garbage Collection Optimization: Reduce request latency and minimize GC overhead through improved reclamation strategies.	
Flash Memory Reliability <i>Research Assistant</i>	Sept, 2019 – May, 2021 Xiamen University, China
<ul style="list-style-type: none">• BitFlip Scheme for NAND Flash: Improve reliability and reduce read latency by mitigating bit-error probabilities. [MSST 2020]	

PUBLICATIONS

[C1] Suzhen Wu, Sijie Lan, Jindong Zhou, Hong Jiang, Zhirong Shen. *BitFlip: A Bit-Flipping Scheme for Reducing Read Latency and Improving Reliability of Flash Memory*. MSST 2020.

WORK EXPERIENCE

Software Engineer Intern <i>Meta</i>	May, 2025 – Aug, 2025 Bellevue, WA
<ul style="list-style-type: none">• Developed SSD-based cached system for objective store.• Implemented data validation and consistency mechanisms.• Analyzed system-level storage efficiency and data organization.	

SPECIALIZED SKILLS

Research Areas: Storage Devices, Storage Systems, Flash Memory.

Programming Languages: C++, C, Shell, Python

Systems: Linux, Windows

TEACHING EXPERIENCE

Teaching Assistant

Penn State

CMPSC 132 (Python and Data Structures)

Spring 2022

Teaching Assistant

Xiamen University

C Programming Language

Fall 2019