

Luozhong Zhou

608-556-8366 | lzhou247@wisc.edu | <https://www.linkedin.com/in/luozhong-zhou-5b325a199/>

EDUCATION

University of Wisconsin-Madison

Bachelor of Science in Computer Science (GPA: 3.845/4.0)

Madison, WI

Sep. 2020 – May 2024

RESEARCH INTERESTS

System Security & Reliability, System Performance

EXPERIENCE

Research Assistant, University of Wisconsin-Madison

Jan 2023 – Present

Project: Software Tampering Detection, Advisor: Prof. Barton Miller & Prof. Sean Peisert (LBNL)

- Assess vulnerabilities in nuclear armament control software on the surrogate system platform
- Implement time-based & count-based attacks and co-develop primitive anomaly detection algorithm
- Establish software tampering detection ability using black-box fuzzing and differential testing
- Exploring more sophisticated threat models and applying intrusion detection techniques
- Verifying tampering detection abilities of black & grey-box fuzzing on COCIM device developed by SNL

Research Assistant, University of Wisconsin-Madison

May 2023 – Present

Project: Userspace Filesystem Reliability, Advisor: Prof. Remzi Arpaci-Dusseau

- Enhance the POSIX-compliance of uFS, a state-of-the-art high-performance filesystem microkernel, by implementing system call interception features
- Design experiments and evaluate the applications' reaction to microkernel filesystem failure model
- Identify and fix programming bugs

Peer Mentor, University of Wisconsin-Madison

May 2023 – Aug 2023

Course: CS 537 Intro to Operating Systems

- Hold weekly Q&A discussions and individual meetings per student requests
- Provide hands-on assistance on course material, projects, and debugging

PROJECTS

Research on FUSE

May - Aug 2023

- Designed application benchmarks on ext4 and FUSE filesystems.
- Conducted an in-depth performance assessment using profiling tools to analyze system behavior and bottleneck.
- Identified potential write amplification issues that cause filesystem performance penalty.

Mini Distributed File System

Dec 2022

- Developed a mini Unix distributed file server and client system based on UDP protocol
- Implemented client-side RPC calls, time-out policies, and retry mechanism features

Primitive Database System

Nov 2022

- Built a primitive relational database system that can execute basic CRUD operations and parse user SQL queries
- Implemented buffer manager, relational operators, and concurrency control that demonstrate understanding beyond course requirement

TECHNICAL SKILLS

Languages: Python, C/C++, Java, SQL, Rust

Frameworks: HDFS, MapReduce, Apache Spark, Cassandra

Tools: Docker, Google Cloud Platform, VS Code, Linux perf, iostat

AWARDS

Dean's List

2021 fall – Present