

Hongzheng Li

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EDUCATION

University of Wisconsin – Madison

Bachelor of Science in Computer Science; GPA: 4.0/4.0

Madison, WI

Expected May 2026

TECHNICAL SKILLS

Programming Languages: C, C++, Python, JavaScript, Java, Swift, HTML, CSS

Tools: Git, GitHub Actions, Docker, Vim, CMake, GDB, Google Test Suite, UML, JUnit

Databases & Distributed Systems: PostgreSQL, Cassandra, HDFS, Spark, Kafka

Frameworks & Libraries: React, React Native, gRPC, Flask, OpenMP, PyTorch, pandas, NumPy, Matplotlib

EXPERIENCE

Operating System Research Intern

University of California, Merced

April 2024 – February 2025

Merced, CA

- Contribute to the development of a performance optimization tool for multi-node systems using **C++**
- Modify **Linux kernel code** to simulate a memory-tiered architecture on a multi-node machine
- Utilize **Linux Performance Tools**, including **Perf** and **VTune**, to monitor and analyze system performance

Research Assistant

Hong Kong University of Science and Technology

November 2024 – January 2025

Clear Water Bay, Hong Kong

- Analyzed trends and user engagement on North American short video platforms
- Examined content strategies and algorithmic recommendations

Systems and Software Intern

Emerson Process Management Co. Ltd.

June 2024 – July 2024

Shanghai, China

- Assisted engineers in identifying, correcting, and designing engineering graphs
- Supported engineers in streamlining document collection workflows and optimizing daily staffing operations

PROJECTS

GOPHER Delivery Simulation System | *C++, Typescript, Docker, Git* | [View Demo](#) | February 2024 – May 2024

- Built a multi-entity simulator in **C++** using **Composite Factory**
- Extended functionality of entities using the **Decorator** pattern
- Implemented the **Observer** pattern for real-time notifications, sending JSON events to **TypeScript** front end
- Containerized the environment with **Docker** for uniform builds and deployments
- Employed **CI/CD** pipelines to automate testing and deployment
- Practiced **Scrum** and used **Git** for collaborative development and version control

BusTub DBMS Buffer Pool Manager | *C++, Git*

December 2024

- Built a thread-safe **Buffer Pool Manager** for efficient memory-disk page management
- Implemented the **LRU-K** algorithm to optimize page eviction
- Designed a **Disk Scheduler** for asynchronous I/O, improving read/write efficiency
- Used **RAII** and move semantics for exception-safe resource management
- Applied **synchronization** and fine-grained latches to enhance concurrency

HONORS

- **Dean's List**, UW-Madison, College of Letter & Science, Fall 2024
- **Dean's List**, UMN, College of Science and Engineering, Fall 2023, Spring 2024
- **Lifetime Member**, UMN Chapter, Tau Sigma National Honor Society
- **Academic Perfection**, University of California, Davis Global Study Program, 2023 - 2024