Hongzheng Li

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Education

University of Wisconsin – Madison — Madison, WI
Bachelor of Science in Computer Science — *Sep. 2024 – Dec. 2025*

University of Minnesota – Twin Cities — Minneapolis, MN
Bachelor of Science in Computer Science; GPA: 4.0/4.0 — *Sep. 2023 – May 2024*

University of California, Davis — Davis, CA
Visiting Students; GPA: 4.0/4.0 — *May 2023 – Aug. 2023*

Chinese University of Hong Kong, Shenzhen — Shenzhen, CHN
Sep. 2021 – May 2023

Technical Skills

Languages: C, C++, Java, Python, PostgreSQL
Developer Tools: Git, Docker, Vim, VS Code, GDB, Google Test Suite, JUnit, UML
Libraries: OpenMP, pandas, NumPy, Matplotlib

Experience

Systems and Software Intern — June 2024 – July 2024
Emerson Process Management Co. Ltd. — *Shanghai, China*

- Identifying, correcting, and drawing engineering graphs to enhance data accuracy and visualization.
- Streamlining document collection processes and optimizing daily staffing operations for increased efficiency.

Projects

Xv6 Kernel Implementation of Operating System Utilities | *C, Git, Docker* — March 2024 – Present

- Designing custom command-line interpreter in C, simulating features of Unix shells such as command execution
- Developing a multi-threaded HTTP proxy server with a thread-safe priority queue, serving concurrent client requests
- Implementing a log-structured file system in user space, enabling CRUD operations with log-based updates

Tuna Memory Management System | *C, C++, Python, Git, Docker, NUMA* — April 2024 – Present

- Collaborating with Dr. Dong Li to develop a system that saves fast memory usage by up to 16% with an overhead of 5% performance loss
- Leveraging state-of-the-art technologies such as Transparent Page Placement and NUMA to simulate modern server workloads
- Designing tuna memory management system to evaluate performance and tune fast memory usage to ensure minimal performance degradation

GOPHER Delivery Simulation System | *C++, Docker, Git* — Feb. 2024 – May 2024

- Used the Scrum framework to enhance team agility and responsiveness to changes
- Implemented Battery Packs functionality through the Decorator pattern, allowing for dynamic enhancements without altering the original pack structures
- Applied the Factory pattern for creating diverse types of Battery Packs, streamlining the production process with a centralized creation point
- Enhanced system interactivity by incorporating Points of Interest using both Decorator and Observer patterns, enabling the feature of Double Delivery by observing and adapting to environmental changes
- Leveraged Git for effective version control, maintaining code integrity and supporting collaborative development within the team

Honors

- **Academic Perfection**, University of California, Davis Global Study Program, 2023 - 2024
- **Dean's List**, College of Science and Engineering, Fall 2023, Spring 2024
- **Lifetime Member**, UMN Chapter, Tau Sigma National Honor Society
- **Second Place**, CSCI 3081W Unit Test Tournament