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, WordPress
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

Tuna Memory Management System | *C, C++, Python, Git, 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

Enhanced Autograder | *C, Git*   Feb. 2024 – March 2024
- Enhanced communication between autograder and child processes using pipes and I/O redirection
- Implemented message-passing queues for alternative execution styles, improving system efficiency
- Utilized alarms for accurate time-outs, ensuring robust handling of infinite/blocked processes
- Developed a function to dynamically calculate batch sizes based on CPU count, optimizing resource allocation
- Designed a scoring function that efficiently retrieves specific results using random I/O operations

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