Jingzhi Zhao

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Education

Duke University, Durham, NC *Aug.2022-Present*
M.Eng in Electrical & Computer Engineering (Software Development Concentration), GPA: 3.9/4.0

Technische Hochschule Lübeck, Germany *Mar.2021-Jun.2022*
Bachelor's in Information Technology, GPA: 4.0/4.0

East China University of Science and Technology, China *Sept.2018-Feb.2021*
Bachelor's in Electrical Engineering and Automation, GPA: 3.8/4.0

Skills

Programming Languages: Java, C/C++, Python, Verilog, HTML, CSS, JavaScript, PHP
Software & Tools: Git, Shell, Maven, Django, GDB, EMACS, Socket, Valgrind, PostgreSQL, Docker, MySQL

Internship Experience

Project Management Intern, Primetals Technologies China Ltd. *Nov.2020-Feb.2021*

- Interfaced with clients and development team to perform requirements analysis for a steel flatness control software, reported current development progress weekly, accelerated the development time for the software by 10%
- Resolved page data synchronization problem by examining test cases and locating the erroneous controller for the steel flatness control software

Featured Projects

HTTP Caching Proxy Server (C++, TCP Socket, Multi-thread, HTTP, LRU Cache, Docker) *Feb.2023-Mar.2023*

- Developed an HTTP caching proxy daemon server that functions with GET, POST, and CONNECT requests in C++
- Implemented multi-thread to handle requests from different endpoints. Used TCP sockets to send and receive packets
- Reduced response time and bandwidth cost by caching responses according to validation and expiration rules in RFC7234
- Architected and added an array of self-designed features, e.g., fixed-size response cache management policy, request logging, HashMap with Read-Write Lock, and information method encapsulation for scalable and robust system design

Thread-Safe Malloc Library (C, Multi-thread, Unix-based OS) *Jan.2023-Feb.2023*

- Implemented a memory allocation and deallocation library similar to malloc and free in C using first-fit and best-fit principles
- Solved race condition problems using atomic operations, mutex synchronization and thread local storage
- Improved the allocation and deallocation efficiency to 10 million times per second, optimized for fragmentation

Ride Sharing Service (Python, Django, Bootstrap, Docker, PostgreSQL) *Jan.2023-Feb.2023*

- Developed a full-stack web application to model the ride sharing service in Django, interacted with PostgreSQL using Django ORM and implemented the entire sharing process from creating account to ride searching as driver or sharer
- Designed intuitive and user-friendly web pages with Bootstrap 5
- Ensured system robustness (100% coverage) by conducting unit test, end-to-end integration test, and regression test

Digital Cookbook Based on MySQL (Java, MySQL) *Oct.2021-Jan.2022*

- Designed a digital cookbook from requirements analysis to quality validation in MVC pattern, implemented functions from recipe searching to recipe rating in Java and stored recipes in MySQL, achieving high maintainability
- Designed the cookbook in a user-friendly way through an interactive interface, structured the informative output using JavaFX and SceneBuilder, achieving 4.8/5.0 rating in usability test

Scholarships

National Scholarship *Ministry of Education of China, 2019*