Zhicheng JIANG

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EDUCATION

Duke University *Aug.2022 – May.2024, expected*

M.Eng. in Electrical and Computer Engineering (Software Engineering track), **GPA:** 4.00/4.00 *Durham, NC*

Shantou University *Sept. 2018 – June 2022*

B.Eng. in Electronic and Computer Engineering, **GPA**: 3.98/4.00 (top 2%) *Guangdong, China*

TECHNICAL SKILLS

Programming Languages C/C++, Python, MySQL, PostgreSQL, JavaScript, MATLAB, Verilog, Assembly Language

Developer Tools Docker, HTML/CSS, Git, Emacs, GDB, REST APIs

Frameworks: Flask, Django, FFmpeg, PyTorch, OpenCV, Thrift

PROFESSIONAL EXPERIENCE

DJI Technology Inc., C++ Software Development Engineer Intern *Aug. 2023 – Sep. 2023*

- Refactored the grader tree data structure within the self-driving simulation system, including the development of bypass and lane change graders. This enhancement significantly improved the ease and intuitiveness of data input for the grader tree, resulting in an overall efficiency boost of 38%
- Enhanced the static analysis tool clang-tidy by incorporating rules compliant with Autosar code standards and seamlessly integrated it into the CI/CD pipeline
- Revamped the Confluence-based automated test report generation tool, reducing report generation time from over two hours to just 30 minutes

OPPO Mobile Communications Co., Ltd., Camera Hal Software Engineer Intern *Jun. 2023 – July. 2023*

- Successfully initialized and configured the Sony IMX890 camera sensor for flagship-level smartphones, including writing the device tree to enable seamless integration
- Proficiently grasped the intricacies of the Qualcomm platform's CAMX framework, gaining expertise in the end-to-end process of sensor-based photography

PROJECT

Mini Amazon Online Shopping System, Independent Project (Python, Django, C++, Docker, PostgreSQL) *Apr. 2023 - May. 2023*

- Developed a full-stack web application that simulates the functionality of an Amazon-like system, including integration with a warehouse and UPS courier system, integrated the application with Docker for containerization and easy deployment
- Designed a user-friendly interface with CSS, HTML, and Bootstrap, featuring functionalities like user authentication, search bar, and a shopping cart
- Implemented asynchronous request handling using a thread pool and utilized thread-safe queues for efficient message passing
- Utilized custom Google Protocol Buffers for communication within the warehouse, supporting ACK timeout retransmission in case of package loss

HTTP Caching Proxy Server, Independent Project (C++, Network, TCP Socket, Multi-Thread) *Jan. 2023 – Feb. 2023*

- Developed a multi-thread HTTP caching proxy server which can handle 10,000+ concurrent GET, POST, CONNECT requests
- Used C++ 11 to implement RAII technique and modeled class with strong exception safety guarantee
- Added concurrency to handle requests from different endpoints. Used TCP sockets to send and receive packets
- Improved efficiency by designing a LRU cache to cache and validate server responses which reduced latency times by 30%

Thread-Safe Memory Allocator, Independent Project (C, multi-thread, Valgrind) *Jan. 2023 – Jan. 2023*

- Developed memory Malloc library in C language, experimented with First-Fit allocation strategy, and then optimized it with Best-Fit strategy which reduced memory fragmentation rate from 15% to 2%
- Implemented multi-thread and thread-safe malloc, experimented with an initial locked version using Pthread Mutex, and then optimized it to a lock-free version with Thread Local Storage which decreased execution time from 1.8s to 0.2s

HONORS & AWARDS

- Outstanding Student Scholarship (top 1% of Shantou University) Dec. 2020
- The 2nd Prize of the 11th "Lanqiao Cup" C/C++ Programming Contest (top 10%) Oct. 2020