Kaiyao Duan

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Professional Summary

A proactive and results-oriented Computer Science graduate with hands-on experience in full-stack development, embedded systems, and system-level programming. Proven ability to architect and deploy reliable applications. Seeking a software development role to contribute to challenging projects and foster continuous technical growth.

Education

Shijiazhuang Tiedao University Hebei, CN

Bachelor's of Computer Science and Technology *Sep 2020 — June 2024*

- Weighted Average Score: 81.42/100
- A/A+ Courses: Object-Oriented Programming, Principle and Application of Embedded System, etc.

Skills

- **Backend Development**: Go (Gin), Java (SpringBoot), RESTful API Design, Multi-threading
- **Frontend & Mobile**: Vue.js, JavaScript (ES6+), HTML5/CSS3, Kotlin (Android)
- **Databases**: MariaDB, SQL query optimization, MyBatis ORM
- **Systems & Infrastructure**: Linux (Ubuntu, Fedora), Embedded Systems (ARM), QEMU, RISC-V emulation
- **Development & Testing**: Git/GitHub, Unit testing, Integration testing, Test-driven development, MVC Architecture
- **Specialized Technologies**: Computer Vision (OpenCV), Security (JWT, Role-based authorization)

Work Experience

QEMU RISC-V Development Intern March 2024 — May 2024

PLCT Lab *Remote*

- Implemented support for the new rv64ilp32 target in QEMU, which involved porting the existing riscv64 ELF parser to enable compatibility with 32-bit applications.
- Expanded GCC regression testing support to include the rv64ilp32 user mode, reusing the existing rv64 test suite to perform functional validation.

Open Source Contributions

Rhino-Bird Elite Talent Training Program August 2024 — October 2024

- Improved hardware compatibility for the NCNN framework by implementing support for NCNN_ISA environment variable detection and parsing.
- Ensured feature robustness by developing and executing a comprehensive test suite to validate the new functionality.

Related Projects

Maintainer, Video Surveillance System for Study Rooms March 2024 — May 2024

- Architected and developed an end-to-end surveillance system integrating computer vision and real-time streaming to monitor study room occupancy.
- Developed a scalable Go/Gin backend capable of reliably handling concurrent video streams while consistently maintaining an average API response time under 100ms.
- Optimized the streaming protocol, reducing video load time in low-bandwidth conditions by approximately 30%.
- Developed responsive, cross-platform clients for an Android mobile app (Kotlin) and an Electron desktop client (JavaScript)

Maintainer, Embedded System Monitoring Software June 2023 — July 2023

- Developed a C++/Qt4 real-time monitoring solution for ARM-based embedded devices to visualize key system performance metrics such as CPU load and memory usage.
- Implemented monitoring for 4 key system resources (CPU, memory, disk and processes), providing data updates every 3 seconds while maintaining a low overhead of less than 3% CPU usage.

- The intuitive GUI with real-time charts helped reduce critical system overload events by 30% during testing on the FriendlyARM Tiny4412 development board.

Contributor, Computer Parts Inventory Management System December 2022 — January 2023

- Designed and implemented a full-stack inventory management system to streamline product cataloging.
- Developed a responsive Vue.js frontend with dynamic filtering and batch operations, reducing manual data management time by an estimated 30%.
- Built a robust Java SpringBoot backend and optimized complex database queries, decreasing the average search response time from 500ms to under 300ms.
- Implemented a secure, JWT-based authentication system with role-based authorization.

Contributor, NeverMiss Scheduling Reminder Software November 2022 — December 2022

- Developed a lightweight Windows desktop application for intelligent task scheduling and notification management.
- Engineered a multi-threaded architecture using System.Threading for non-blocking, concurrent task execution.
- Optimized the application's background processes, reducing idle memory footprint by 20% and maintaining CPU usage below 2%.

Awards

IELTS Overall Band Score: 6.0	March 2025
Tencent Open Source Contributor Certificate	October 2024
Tencent Outstanding Student Certificate	October 2024
15th China Undergraduate Computer Design Competition, Provincial Third Prize	June 2023
14th Lanqiao Cup National Software Competition, Provincial Third Prize	April 2023