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 — Jun 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)

Open Source Contributions

NCNN Aug 2024 — Sep 2025

- Implemented support for the NCNN_ISA environment variable to enhance hardware compatibility.
- Added NCNN MicroPython C API bindings to enable Python-level integration with the NCNN framework.
- Introduced RenderDoc integration for GPU debugging and profiling support.

Work Experience

QEMU RISC-V Development Intern Mar 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 riscv64 test suite to perform functional validation.

Related Projects

Maintainer, Video Surveillance System for Study Rooms Mar 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 maintaining a highly responsive API.
- Optimized the streaming protocol, which significantly reduced video load time in low-bandwidth conditions.
- Developed responsive, cross-platform clients for an Android mobile app (Kotlin) and an Electron desktop client (JavaScript).

Maintainer, Embedded System Monitoring Software Jun 2023 — Jul 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 key system resources (CPU, memory, disk and processes), providing near real-time data updates while maintaining minimal CPU overhead.

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

Contributor, Computer Parts Inventory Management System Dec 2022 — Jan 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, significantly reducing manual data management time.
- Built a robust Java SpringBoot backend and optimized complex database queries, which drastically improved search response times.
- Implemented a secure, JWT-based authentication system with role-based authorization.

Contributor, NeverMiss Scheduling Reminder Software Nov 2022 — Dec 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, which notably reduced its idle memory footprint and ensured minimal CPU usage.

Awards

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