Daniel Qu

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Skills

Languages/Frameworks: Python, JavaScript, React, Node.js, C, MATLAB, Bash, SQL, HTML/CSS
Other Technologies: Git, AWS, Jenkins, Docker, Kubernetes

Work Experience

DSP Software Developer Intern, Coherent Logix − Waterloo, ON   May 2023 − Aug 2023

- Implemented physical layer receiver according to the IEEE 802.11 protocol using embedded C to support software-defined radio projects.
- Reduced runtime of several functions by 5-10 times by incorporating chip-specific assembly instructions and clever bitwise operations to optimize intensive procedures.
- Converted MATLAB prototypes for Wi-Fi modulation into production-optimized fixed-point implementations in C, using appropriate data structures and considering integer overflow.
- Parallelized computations by evenly distributing incoming Wi-fi packets to multiple processor units.

DevOps Intern, Sony Interactive Entertainment − Waterloo, ON   Sep 2022 − Dec 2022

- Congifured and deployed Loki log aggregation stack on Kubernetes using Helm and AWS EKS to scrape and centralize logs from production environments of over 100 key applications.
- Strengthened cloud network security by automatically deleting vulnerable AWS security groups using Lambda and reporting incidents to Slack.
- Designed and publicized log dashboards on Grafana, increasing accessibility of logs for relevant development teams and accelerated the debugging of critical issues.
- Performed time-sensitive Jenkins server maintenance operations during weekly downtime windows.

Front End Software Developer Intern, Sony Interactive Entertainment − Waterloo, ON   Jan 2022 − Apr 2022

- Won first prize in company-wide Hackathon with a PS5 app which was later converted into an official patent.
- Updated the checkout pages on the PS5 console using React Native and Redux to support the successful 2022 PlayStation Plus Subscription release.
- Supervised 100+ E2E tests for comprehensive coverage over all checkout flows and locales using Python, Jenkins, and QTest to monitor any pre-release regressions.

Full Stack Software Developer Intern, Dreamschools − Toronto, ON   May 2021 − Aug 2021

- Developed complete messaging system and chat page using React, Express and PostgreSQL to provide SMS and email communication between clients.
- Improved page load times by up to 10x by parallelizing and reorganizing API calls to Stripe.
- Overhauled checkout process by redesigning UI and supporting additional payment methods.
- Actively refactored commonly reusable components such as modals and popups.

Projects

UW Midnight Sun Driver Dashboard   GitHub

- Implemented solar car vehicle dashboard in Flutter by following Figma design specs to provide the driver with relevant metrics and alerts during operation.
- Performed integrated testing by sending vehicle CAN messages to the dashboard over a WebSocket interface.

Education

University of Waterloo − B.A.Sc in Mechatronics Engineering   Sep 2020 - May 2025 (expected)

- Automatic Control Systems, Microprocessor Systems, Computer Structures & RTOS (93% C.Av)