

EDUCATION

University of Waterloo

Waterloo, Ontario

Candidate for Bachelor of Applied Science - Computer Engineering; GPA: 87.62

Expected Graduation: May 2024

Achievements: President's Scholarship, Top Quartile Student, Dean's Honours List (2022)

Courses: Distributed Systems, Computer Networks, Computer Architecture, Embedded Software, Systems Programming, Concurrency, Real-Time Operating Systems, Compilers, Embedded Microprocessor Systems, Data Structures, Algorithms

EXPERIENCE

Electrans

Oakville, Ontario

Embedded Systems and Software Engineering Intern

Sep 2023 – Dec 2023

- **Firmware Development:** Developed firmware in C for NXP S32 and Arduino MCUs to control a robotic tractor/trailer connection system using CAN and to drive an HMI for it. Completed a design overhaul of the HMI based on user feedback, increasing satisfaction by 100%.
- **Observability:** Added SD card logging functionality to devices by interfacing with a real-time clock and extending the FatFs library to support S32 MCUs, speeding up field debugging processes by over 10x.
- **IoT:** Designed and developed a distributed IoT platform to control and monitor hardware test fixtures using Python, Go, MQTT, Docker, GCP, and InfluxDB. Optimized GCP resource usage to minimize costs by over 90%.

Autonomic (merged into Ford)

Remote

Software Engineering Intern

Jan 2023 – Apr 2023

- **Back-End Development:** Maintained production microservices responsible for Ford's IoT-enabled vehicles, using Spring Boot with Kotlin and Java. Performed security upgrades, eliminating 20+ CVEs across 4 services.
- **Infrastructure:** Investigated service bottlenecks, and refactored a device connectivity service, producing a 10x improvement in latency. Managed and debugged deployments using Concourse, ArgoCD, and Kubernetes.
- **Observability:** Developed Prometheus metrics and Grafana dashboards to increase observability into production code performance and to improve diagnosis capabilities.

Ford Pro

Remote

Software Engineering Intern

Jan 2022 – Apr 2022

- **Full-Stack:** Pioneered development of Ford Pro Title and Registration, a flagship component of Ford's fleet management software, using Vue, Spring, and MySQL along with the Model-View-Controller pattern.
- **Test-Driven Development:** Introduced TDD methodology and used JUnit, Mockito, and SonarQube to maintain 100% code coverage.
- **REST APIs:** Designed APIs to comply with OpenAPI standards. Used 42Crunch to ensure secure API design. Implemented Cucumber API acceptance tests, enhancing API clarity and quality.

Ricoh

Kitchener, Ontario

Software Engineering Intern

May 2021 – Aug 2021

- **Network Software:** Engineered an enterprise local network device locator from scratch, utilizing Java, SNMP, and REST APIs. Produced comprehensive documentation for its specifications, limitations, and use.

Grapevine6 (acquired by Seismic)

Toronto, Ontario

Software Engineering Intern

Sep 2020 – Dec 2020

- **Feature Development:** Delivered client-requested features to production for a white-label SaaS sales engagement platform, using React, Angular, Express, Node, and MongoDB.

Independent Electricity System Operator

Mississauga, Ontario

Operations and Power Systems Analyst Intern

Jan 2020 – Apr 2020

- **Data Analysis:** Built queries and metrics dashboards using SQL and Tableau to monitor NERC/NPCC compliance of all of Ontario's electricity generators. Completely automated manual reports using SQL, Excel, and VBA, eliminating human error and decreasing report preparation time by 90%.

SKILLS SUMMARY

Languages: C, Python, Java, Go, Kotlin, Scala, Javascript, MATLAB, SQL, HTML/CSS

Tools: AWS, GCP, Docker, Kubernetes, Kafka, gRPC, MQTT, Spring, Express, Svelte, React, Tableau, Cassandra