

Nelson Loop

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SKILLS

Languages: Java, JavaScript, TypeScript, C++, C, C#, HTML/CSS, Python, Ruby

Technologies: React, Angular, Ruby on Rails, Material-UI, ROS, AWS, Docker, Github Actions, Unity, Linux, Git

EXPERIENCE

Swap Robotics

May 2023 – Aug 2023

Web Developer | JavaScript, HTML/CSS, AWS, Docker, PostgreSQL, Material-UI, Jest

Kitchener, ON

- Used JavaScript, HTML, CSS, and Material-UI to implement 15+ user-requested features to a Dockerized React application, including monitoring critical robot systems and implementing fail-safe protocols to prevent autonomous operations in case of system failures.
- Integrated Google Maps APIs to simultaneously track and visualize the real time locations of 20+ robots.
- Developed REST APIs to interact with AWS S3 Buckets as well as PostgreSQL db through the Prisma ORM.
- Increased code coverage by 70% by implementing Jest unit tests for REST APIs and established GitHub Actions for automated testing on an AWS EC2 Instance.

Swap Robotics

Sept 2022 – Dec 2022

Autonomous Robotics Software Developer | Python, ROS, Foxglove

Kitchener, ON

- Utilized Python, ROS, and Foxglove to develop code for real-time data tracking, reporting, and visualization of autonomous robots.
- Retrieved and monitored real-time safety diagnostics of a motor MCU from a CAN bus in Python, to enhance safety measures in robot operations.
- Applied object-oriented principles to optimize class efficiency and code architecture.
- Collaborated closely with management to prioritize project needs, and define clear ticket criteria.
- Contributed effectively within a Scrum framework, actively engaging in bi-daily standup meetings and sprint-focused development cycles, and effectively utilized ClickUp for ticket management and organization.

Tuq Inc.

Jan 2022 – Apr 2022

Software Developer | Ruby, Ruby on Rails, Angular, TypeScript, HTML

Waterloo, ON

- Designed and developed applications based on client specifications, employing Ruby on Rails and Sorbet for backend development, in conjunction with Angular, TypeScript, and HTML for frontend implementation.
- Developed REST APIs that interact with Active Record models, implemented unit tests, and documented with Swagger API for applications, enhancing application reliability and company software quality.
- Met with clients to discuss specifications for applications, and designed Entity-Relationship Diagrams based on those specifications, ensuring alignment with client needs and project success.

PROJECTS

Portfolio Website | JavaScript, React, HTML/CSS, Material-UI, Vercel

- Developed a professional portfolio website showcasing my previous work experiences, skills and projects.
- Utilized React, JavaScript, HTML, CSS and the Material-UI library, and hosted on Vercel.

2D Grid-Based Strategy Game | Unity, C#

- Learned Unity and C# to create a 2D grid-based strategy game.
- Utilized Jira for tickets and organization during development.

Aim Trainer | Java, JMonkeyEngine

- Created a 3D First-Person Shooter (FPS) aim trainer game.
- Used Java and independently learned JMonkeyEngine.

EDUCATION

University of Waterloo

Sept 2021 – Present

BASc. Computer Engineering, Honours, Co-operative Program

Waterloo, ON

- Second year undergraduate student.
- Expected Graduation April 2026.