NELSON LOOP

Basc. Computer Engineering, University of Waterloo

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TECHNICAL SKILLS

Front-End: JavaScript, TypeScript, HTML, CSS   **Libraries:** ROS, Material-UI

Back-End: Java, Python, Ruby, C++, C#   **Cloud/DevOps:** AWS, Docker, Github Actions

Frameworks: React, Angular, Ruby on Rails, Unity   **Environments:** Windows, Linux, Eclipse, VS Code

PROFESSIONAL EXPERIENCE

Web Developer Co-op - Swap Robotics   May 2023 - August 2023

- Used **JavaScript**, **HTML**, **CSS**, and **Material-UI** to implement **15+** user-requested features to a **Dockerized React application**, such as 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 robust **REST APIs** to interact with **AWS S3 Buckets** as well as **PostgreSQL database** through the **Prisma** ORM.
- Implemented **Jest unit tests** for REST APIs and established **GitHub Actions** for **automated testing** on an **AWS EC2 Instance,** increasing code coverage by **70%**.

Autonomous Robotics Software Development Co-op - Swap Robotics   September 2022 - December 2022

- Utilized **Python**, **ROS**, and **Foxglove** to develop code for real-time data tracking, reporting, and visualization of autonomous robots.
- Applied **object-oriented principles** to optimize class efficiency and code architecture.
- Collaborated closely with management to prioritize project needs, resolve conflicts, 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.

Junior Developer - Tuq Inc.   January 2022 - April 2022

- 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

2D Grid-Based Strategy Game   Sept 2022 - Oct 2022

- Learned **Unity** and **C#** to create a 2D grid-based strategy game. Utilized **Jira** for tickets and organization during development. The game can be found here: https://nelsonl2903.itch.io/grid-tactics.

Aim Trainer   Feb 2021 - Apr 2021

- Designed and coded a 3D FPS aim trainer game and independently learned **JMonkeyEngine**. A video of the game can be found here: https://www.youtube.com/watch?v=HGbwkaFUqVM.

EDUCATION

University of Waterloo (Candidate for Bachelor of Applied Science, Computer Engineering)   **2021 - 2026**