

PATRICK MALONEY

Biomedical Engineering
University of Waterloo

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SUMMARY OF QUALIFICATIONS

- **Languages:** C++, Python, JavaScript, SQL, MongoDB, Java, HTML, CSS, C#, C, MATLAB
- **Technologies:** React, MySQL, Express, Node.js, Django, Linux, QNX, Vue.js, Unity, VS Code, Momentics, gtest, gmock, Git, SonarQube

EXPERIENCE

Power Management Software Developer

Ford Motor Company of Canada

Jan. 2020 - April 2020

- Produced large-scale, thread-safe and performance-oriented software using **C++** to manage data from Controller Area Networks (**CAN**) across three Electronic Control Units (ECUs)
- Used **VS Code** and **Momentics** to develop cross-platform code to run on **Linux** and **QNX** embedded systems
- Delivered debugging tool which enabled CAN messaging, resource state querying, and power states requests during testing

Sept. 2020 - Dec. 2020

- As the person second-most experienced with the code base, I brought forward major design decisions and implemented critical new features while increasing code stability and maintainability
- Completely redesigned the team's API to allow for request status callbacks and a simplified use case based requesting interface
- Expanded unit test coverage by 25% using **gtest** and **gmock** frameworks in first two weeks

Software Developer

Big River Technologies Inc.

May 2019 - Aug. 2019

- Designed and built a **MySQL** database to improve tracking of employee provisioning and access management
- Used **React** to implement new client features and defect fixes
- Developed coding best practice and company standards documentation

Cancer Radiotherapy Research Assistant

Grand River Regional Cancer Centre

Sept. 2019 - Mar. 2020

- Worked with doctors and professors in a study to analyze retrospective radiation therapy data for the optimization of brain cancer treatment
- Developed **Python** scripts to extract and visualize treatment plan data from radiation modelling system

Vice-President of Finance

UWaterloo Residence Council

Sept. 2018 - April 2019

- Managed spending of \$7200 account to ensure all events could be successfully run and efficiently co-lead general council meetings

PROJECTS

Augmented Reality Android App

Best VR/AR Hack, BrickHack 5

Feb. 2019

- Developed a facial recognition and information display app for the Vuzix Blade smart glasses in under 24 hours with the use of **Unity**, **Vysor**, and **Vuforia**

ML Spotify Playlist Generator

Hack the North Project

Jan. 2021

- Built a **React** web app with a **Django** backend that generates a tailored Spotify playlist based on the user's saved songs and inputted keywords

Note-Taking Web App

Personal Project

Dec. 2020

- Used **React**, **Express**, **Node.js**, and **MongoDB** to create a dynamic web app for tracking notes, reminders, and to-do items

Grocery/Meal Prep. Web App

BrickHack 6

Feb. 2020

- Built a grocery list application using **Vue.js**, **Spring** and **MySQL** that monitors the user's pantry and determines what products need purchasing for selected recipes

EDUCATION

BASc. in Biomedical Engineering, Computing Option (3A term)

University of Waterloo

2018 - exp. 2023

Dean's Honours List

89% Avg, 3.82 CGPA

Ranked **8/75** in Program

Relevant Courses:

- Software Design and Architecture
- Data Structures and Algorithms (**C++**)
- Digital Computation (**C#**)
- Image Processing

ACTIVITIES/INTERESTS

- University orientation organizer/leader
- Competing in hackathons
- Engineering Society Council
- Hockey, Skiing, Volleyball, Ultimate Frisbee
- Grew up working and living on a beef farm