

Ethan McAuliffe

4th year Computer and Management Engineering student
<https://github.com/emcauliffe>

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Education

McMaster University

Hamilton, ON

Bachelor of Computer and Management Engineering (Co-op) (3.8 GPA)

Sept. 2018 - Present

- *CompEng 3DQ5* - Created modified JPEG decompression program in System Verilog
- *CompEng 3DY4* - Used C++ to process FM radio signal into mono, stereo, and RDS data. Implemented parallelization with mutex and conditional variables to run on embedded systems

Extracurriculars

Software Team Lead at McMaster Mars Rover

Jul. 2020 - Present

McMaster University

- Work with ROS (Python & C++) to create and simulate a rover capable of autonomously or manually completing tasks like GPS waypoint navigation, obstacle avoidance, precise arm control, object detection, environment mapping (SLAM), PID drive control, and more
- Developed PID control module for drive motors, implemented computer vision object detection system, wrote drivers for arm and drill control over CAN, published python package to send messages over LoRa with Jetson TX2 SPI interface
- Applying skills and tools learned in engineering courses (interrupts, I2C, UART, SPI, CAN, OOP, Linux, code documentation practices) and in commerce courses (recruiting, team building, project management)
- Developing and applying skills to rapidly deal with unexpected issues (including mechanical, electrical, and software problems)
- Currently building another rover based on ROS 2 with microROS and CAN for communication between embedded subsystems

Work Experience

Software Engineer Intern

Veeva Systems

May 2022 - Aug. 2022

- Wrote automated tests in Java using Selenium web driver and Cucumber which caught multiple issues with key products before entering to production
- Refactored codebase to implement “single source of truth” philosophy to reduce future development hours and make debugging easier
- Worked with industry tools like Jenkins, Vagrant, and Serenity to monitor results of test runs and produce easy-to-consume reports for management

Software Developer

Toronto, ON

Integral Co.

Feb. 2021 - Dec. 2021

- Developed showcase drag-and-drop calendar product from scratch which helped Integral acquire multiple new customers
- Developed scheduling products to save manufacturing customer 10+ hours of work each day, allowing customer to focus on expanding their business
- Quickly building experience working with industry tools/libraries (FastAPI, React, SQLAlchemy) while adhering to customer requirements and deadlines

Risk and Control Automation Analyst*Royal Bank of Canada*

Toronto, ON

Jan. 2021 - Aug. 2021

- Commended for ability to make impactful contributions towards the team's goals by developing robust, yet easily maintainable tests
- Praised for improvements to team efficiency and organization by migrating task management system and authoring clear documentation

Software Engineering Intern*RT7 Inc.*

Toronto, ON

May 2019 - Aug. 2019

- Wrote documentation for existing Swift codebase
- Rebuilt existing product from scratch with React Native, uniting Android and iOS codebases
- Practised attention to detail when generating new apps and publishing with accurate info to the App Store

Summer Intern*Achiga Inc. & Concierge Plus*

Toronto, ON

Jul. 2018 - Aug. 2018

- Reduced accounts receivable over 90 days by 80+% through effective communications with past due customers
- Extensive experience identifying and eliminating anomalies with money records/data
- Developed professional interpersonal skills through daily interaction with customers

Personal Projects**Seat Alert (<https://seatalert.ca>)**

- Built a website where students can sign up to receive email and text alerts when a seat becomes available in a course they are interested in
- Frontend in React (+from-scratch webpack configuration) with a FastAPI backend and a custom Python package to query public university databases (utilizing async libraries)
- Recommended by McMaster faculty, admin, and students
- Used by over 20k students each year across five universities

Bottles Against COVID (<https://emcauliffe.github.io/Bottle-Drive-Website/>)

- Built a full-stack website to facilitate contactless bottle drives during the COVID-19 pandemic
- Ran a bottle drive every week and raised over \$3000 for St. Joe's Hospital in Toronto

Volunteering**Technical Assistant (TA)***Royal St. George's College*

Sept. 2017 - Jun. 2018

- Selected for a leadership role teaching younger students basic electronic circuits, PCB design, Arduino programs, and technical writing

Selected Skills

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|--------------|-----------|----------|--------------|--------------------------|
| – Python | – React | – ARM | – ROS, ROS 2 | – Keil |
| – Java | – Verilog | Assembly | – Git | – I ² C, SPI, |
| – C & C++ | – System | – Bash | – Docker | U(S)ART |
| – JavaScript | Verilog | – Linux | – Quartus | – SQL |