

# Brendan Arciszewski

www.brendanarciszewski.ca

## Summary of Qualifications

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- Designing APIs in C, C++, & Python for use in embedded systems, by users and developers
- Discovering documentation; using CLIs, RPCs, \*nix systems, Microsoft Office and Microsoft Windows

## Experience

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### Apple

Remote

#### Network Software Engineering Intern

January 2021 – August 2021

- Increased **code coverage** using Bullseye, to discover and remove bugs. Wrote and modified unit tests, fixed bugs in **C**, and improved readability and maintainability by updating code and tests to follow the style guide and best practices.
- Wrote **Rust**, **Python** and **shell** scripts to improve developer productivity by launching the VSCode debugger from existing test runners, categorizing unused unit tests, and verifying **PlantUML** signals
- Updated documentation for better maintainability: used **regex** and **Perl** to ensure Jama requirements were tracked in code, updated **message sequence charts** in PlantUML, used **Perforce** for versioning, and improved layout in DocBook

### Infinera

Ottawa, ON

#### Firmware Engineering Intern

May 2020 – August 2020

- Designed intuitive interfaces to embedded devices, so that users can quickly identify and report device configuration and programming errors—by connecting to drivers using **gRPC** and **Protocol Buffers** in **C++**
- Automated and consulted on QA tasks by parsing and retaining additional information, enabling standardized reports; made debug info more easily accessible for both testers and supervisors
- Reduced surface area of software regressions by identifying opportunities and requesting time to create fixes

### Government of Canada

Ottawa, ON

#### Software Developer

September 2019 – December 2019

- Automated validation of a tunable capacitor by building a Linux **SPI** program in C, with defensive programming, unit tests, **mocks**, **Valgrind**, and debuggers (e.g. **GDB**) to ensure correctness and memory safety
- Performed package upgrade to reduce build configurations after evaluating size, build, and runtime cost of dependencies; created custom **Buildroot** package in embedded codebase
- Tracked hardware by creating a Raspberry Pi GUI with barcode scanner and touchscreen inputs, using **Qt QML**

#### Software Developer

January 2019 – April 2019

- Prevent incorrect builds and automate software Quality Assurance (QA) by analyzing and improving interface description (IDL) files, using Test-Driven Development (TDD) and **Jenkins** Continuous Integration (CI)
- Reduced execution time by 80% (to under 10s) to improve user experience (UX) by incorporating caching into a Django, AngularJS, Bootstrap, jQuery, and Flask web application
- Designed an OpenAPI-described **REST** service, using Python, to communicate a standard API to many endpoints

### Electrical Contacts Ltd.

Hanover, ON

#### Manufacturing Engineering Intern

April 2018 – August 2018

- Debugged **PLC** setup, discovered problems, and then consulted with colleagues to implement solutions
- Consulted operators and led meetings with management to fix manufacturing process problems
- Gathered data, created plans using Excel, and wrote SOP to categorize costs, lead times, and improve processes

### Engineering Student Teams

#### President (*Robot in 3 Days Team Ontario*) & Technical Lead (*FIRST Robotics Team 781*)

- Used control theory with **OpenCV**, encoders, and IMUs to control drivetrains and shooting systems
- Designed, built, and documented a robot to follow lines and play sound based on grayscale output within a team

## Education

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### University of Waterloo

Waterloo, ON

#### Honours Mechatronics Engineering, Co-op (BASc)

2017 – 2022 (Expected)

## Certifications & Awards

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May 2017

Diplôme d'études en langue française (Niveau B2)