Jason Castillanes

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SUMMARY:

I am a Computer Engineering student seeking an internship. I aspire to become a Software Systems Engineer, writing firmware and IOT applications. In my freetime, I enjoy playing piano and working on my side project: A server-connected device that uses FreeRTOS multithreading to handle user-device interactions and TCP Socket events simultaneously.

Building quality software using craftsmanship and critical thinking is a dream of mine; I strive to work at a company that encourages engineers to design software that is technical and robust. I'm always striving to challenge my current understanding of systems level programming and effective software design.

EDUCATION:

University of Western Ontario B Eng. Computer Engineering *London ON* *Class of 2025*

- Data Structures & Algorithms | Real Time Operating Systems & Bare-metal Programming
- Computer Architecture & Networking | Embedded Systems Design on Microcontroller & FPGA
- Web & Mobile App Development | UML
- Control Systems | Signal Processing

ENGINEERING PROJECTS:

Pockpet: Tamagotchi Clone - RP2040 C/C++, CMake, FreeRTOS

- Built an embedded systems project for the Raspberry Pi Pico that handled a Graphical User Interface (GUI), Static Memory Allocation, and LCD Screen Peripherals.
- Utilized FreeRTOS to control kernel objects such as queues and semaphores, allowing for a more responsive GUI.
- Designed wire layouts for a handheld battery-powered device using Serial Peripheral Interface (SPI)
- Integrated C++ libraries for handling peripheral devices such as Push Buttons and LCD Screen
- Documented the project progress and maintained an open-source repository on Github.

RELEVANT EXPERIENCE:

The STEAM Project: Programmer & Battle Bots Program Coordinator *Richmond Hill ON* *Sept 2023 – Jan 2024*

- Spearheaded 'Battle Bots' Program, an Arduino based course catered to young students, reaching approximately 100 enrollments within 4 months.
- Consolidated the C++ codebase to seamlessly integrate with the latest Open-Source Arduino Libraries and Arduino SDK updates. Enhanced electronics debugging ability by writing programs to output diagnostic data via serial COM Port.
- Organized the logistics and production required to distribute 100+ Battle Bots robotics Kits: facilitated ordering relevant electronics and production of 3-D Printed Robotics Chassis and Attachments.
- Optimized spending on Electronic Parts and handled Bill of Materials using MS office tools.

TOOLS:

Web/Cloud Frameworks VueJS, Express & NodeJS, AWS EC2 & Lambda

Languages C/C++, Java, Python, JS/HTML/CSS, TypeScript

Embedded Systems Tools CMake, GDB, lwIP, FreeRTOS, RPi Pico SDK, VHDL

Operating System + Editors Windows WSL, Ubuntu Linux, Neovim