

Wael Yakoub Agha

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Education

Simon Fraser University

August 2017 – December 2021

- Bachelor of Science (with Distinction), Computer Science Major, Faculty of Applied Sciences
- Dean's Honor List, \$137,000 W. Ronald Heath Full Major Entrance Scholarship

Technical Skills

Languages	C, C++, Python, Java, SQL, R, BASH, HTML, CSS, JavaScript, Makefile
Embedded Systems	Microcontrollers, i2c, SPI, FSM, Assembly, C HW programming
Networking	TCP/IP, UDP, DHCP, DNS, HTTP, Wireshark, PXE servers, Firewall, Proxy
OS Development	Linux, Windows, Multi-threading, Interrupt handling, Kernel programming
Data Science	Apache Spark, Pandas, NumPy, Jupyter, NLTK
Web Development	HTML, CSS, JavaScript, Django, Pyramid, Vagrant, Docker
Machine Learning	NumPy, SciPy, Scikit-Learn, TensorFlow, Keras, PyTorch

Work Experience

Motorola Solutions Inc.

Vancouver, Canada

Senior Firmware Engineer

August 2023 - Present

- Utilized **C/C++** expertise to enhance code, introduce features, and resolve bugs, completing over 150 Jira tickets
- Collaborated with a developer to create a **C++** service app that integrates an **ML** model into our firmware. This app communicates with the main application through **gRPC** and interfaces with a hardware device for input
- Established full communication between the camera-side service and the video management system, utilizing **ONVIF** protocol via **HTTP** for XML-based SOAP message service configuration and event transmission

Junior Firmware Engineer

January 2022 - August 2023

- Built a user-friendly WebUI page, using **HTML** and **JS**, for configuring the ML service application settings
- Developed ALSA-based mechanism to validate microphone functionality in manufacturing of a new product
- Implemented cold start support in **C++** to ensure device boot-up and operation in low temperatures
- Mentored an intern, offering explanations, addressing queries, and facilitating seamless team integration
- Collaborated remotely with global teams across three locations to enhance feature implementation, streamline testing, and validate devices rigorously

Firmware Engineer Co-op

September 2020 - August 2021

- Created **C++** user-space app to read gyroscope data via **i2c** and designed a multi-gyroscope container
- Verified functionality of Privacy Zones, SmartCodec, Audio and Digital I/O, and more on new camera products
- Conducted release validation, identified regressions, submitted fixes, and retested for a bug-free release
- Fixed bugs in various product features such as Camera focus, Video Overlay and Web UI
- Enhanced QA test scripts, including new feature tests and updates to accommodate testing newer cameras

Broadcom Inc.

Richmond, Canada

Embedded Systems Applications Engineer Co-op

April 2019 – August 2019

- Created Linux-based embedded apps in **Yocto** using **C**, featuring a messaging channel and a CSV reader/writer
- Crafted an extensive project demonstration utilizing **C** and **BASH** to showcase the product's performance
- Developed **Python** test scripts for performance assessments, smoke tests, and individual component validations
- Automated tasks with **BASH** scripts, including setup and driver loading, saving developers significant time
- Added debugging and performance tools to the Yocto image for routine assessments and comprehensive reports