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***

- Completed, using **C/C++**, over 200 Jira tickets about code enhancements, feature developments and bug fixes
- Created a **C++** service app that runs input from a hardware device through a Neural Network model, and reports detections to the user. The app relies on **gRPC** for communication with the main and other firmware apps
- Implemented the communication between the main app service (server) and the video management system (client) that reports the NN model's detections to the user. It relies on the **ONVIF** protocol which uses XML-based SOAP message service configuration and event transmission over **HTTP**

Motorola Solutions Inc. **Vancouver, Canada**

Junior Firmware Engineer ***January 2022 - August 2023***

- Developed a mechanism to validate the digital microphone during manufacturing using **Bash**, **sox** and **ALSA**
- Built a user-friendly web interface, using **HTML** and **JS**, that allows users to configure the ML service app
- Implemented in **C++** the cold start feature that allows camera to boot up and operate safely in low temperatures
- Mentored an intern for by offering technical explanations, addressing questions, and ongoing communication
- Collaborated with three teams across globe to design the ML service app, divide implementation tasks, coordinate the testing plan, continuously validate the feature, and document our results

Motorola Solutions Inc. **Vancouver, Canada**

Firmware Engineer Co-op ***September 2020 - August 2021***

- Implemented in **C++** a user-space application that reads data from multiple gyroscopes via i2c channel
- Validated camera features such as Privacy Zones, SmartCodec, Audio and Digital I/O on the newer products
- Identified and fixed bugs in multiple camera features such as Camera focus, Video Overlay and WebUI
- Improved QA scripts by adding tests for the new features and modifications to accommodate the newer products

Broadcom Inc. **Richmond, Canada**

Embedded Systems Applications Engineer Co-op ***April 2019 – August 2019***

- Developed Linux-based support apps using **C** and **Yocto** such a messaging channel and a CSV reader/writer
- Created for the marketing team, using **C** and **Bash**, a demo of the project highlighted the strengths of the product
- Implemented **Python** test scripts for smoke testing, performance monitoring and hardware validation
- Wrote **Bash** scripts that automated manual time-wasting tasks such as environment setup, and loading drivers