

HARRY WANG

Computer Engineering Student

(647)-526-9228 harry-j-wang harryjwang04@gmail.com harryjwang harryjwang.com

SKILLS

Software Languages and Skills - Python, Java, C++, Altium Designer, C, C#, JavaScript, HTML, CSS, Swift, XML, SQL,
Project Management Tools - Google Studio, Microsoft Office Suite, PowerShell, Jira, Asana, Bitbucket, Jenkins, Azure, GIT

EXPERIENCES

University of Waterloo Baja SAE Design Team – Electrical and Embedded Lead – Waterloo, Ontario February 2023 – Present

- Developed a **data acquisition system** that implements an **acceleration** sensor and **rotation** sensor using **ESP32, I2C, and CAN communication** to help improve mechanical components of the vehicle and improve competition results by over **20 places**
- Implementing 18-volt drill battery and designed the corresponding custom **60mA buck boost converter** that regulates the vehicle's voltage in the wire harness which improved battery changing speed by over **5 seconds**, achieved more consistent results

Definity Financial Corp. – Automation Developer Co-op - Waterloo, Ontario May 2024 – August 2024

- Integrated **android wrapper classes** for android testing using xpath locators to design a **streamlined automation** for test environment switching while maintaining the android suite as new updates and features are designed into the Sonnet application
- Implement **REST API** within BrowserStack to automate link upload process to create **100% automation** of the android test cycle
- Develop Docker script that applies **JSON parsing** commands to automate uploading process of internal **JUNIT** files for app testing

Litens Automotive Group – Embedded Engineering Student - Concord, Ontario September 2023 – December 2023

- Created a **GUI** that **interfaces** with the **Battery Management System** of an Electric Vehicle by using **Python and TKinter** and increased received data accuracy between the BMS and vehicle by **5%** and increased efficiency by **3%**
- Designed and implemented tests on **AURIX** and **STM32 boards** through observing results on a **Keysight oscilloscope** which helped identify over a **dozen issues** in hardware and software that were able to help improve the accuracy in product release v1.5.0

SQI Diagnostics Inc. - Software Engineering Intern - Etobicoke, Ontario January 2023 – April 2023

- Updated the assays (**QS2.6.7, RALI-Dx, TOR-Dx**) and functionalities of the corresponding GUIs using **C# and Python's PyQt**
 - Provided customer service to major hospitals such as Toronto General Hospital through **disassembling robot machinery** containing **Nimbus, scanners, washers**, etc. as well as training hospital workers on the disassembly of the **SQID Lite instrument**
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PROJECTS

Data Acquisition System – C++, ESP32, STM32 - Waterloo, Ontario April 2023 – Present

- Developed a **CAN communication**-based data acquisition system that interfaces an **ESP32** Wrover with an MPU6050 and A3144 hall effect sensor that gathers data during testing and is transmitted to a detachable **SD Card**, accurate to **95% accuracy**
- Working on transitioning to implementing the same data acquisition system to **STM32** while retaining the CAN communication system as well as adding further **custom-built sensors** such as heat and fuel sensors for the engine and fuel level respectively

Portfolio Website - HTML, CSS, and JavaScript - Richmond Hill, Ontario March 2023- Present

- Created and constantly updating personal portfolio website using **HTML, CSS, and JavaScript** on a personal, public domain to showcase my experiences throughout the course of my life as well as develop my **front-end** development skills

Personal Bluetooth Motion Alarm System – C++. ESP32 - Richmond Hill, Ontario May 2024 - July 2024

- Created and wired an alarm motion system that alerts users via **ESP32 Bluetooth Interfacing** and sound system using multiple motion sensors, Bluetooth, and speaker board with serial communication and helped identify an average of **8-9 people** each day

TSAL Board – Altium Designer - Waterloo, Ontario October 2023 – November 2023

- Designed and **soldered** a TSAL Board for **high voltage** labs using **Altium designer** to create a board that lights green or red for expected/unexpected current and voltage respectively and helped identify over a **dozen instances** of needing to step down voltage

Quantisport Lung Testing Software - Python - Etobicoke, Ontario 2 February 2023 - April 2023

- Updated SQI's **QSv2.6.7 software's main display** in **Python** to allow users access to an **additional standard (s11)** as well as control and patient sample value invalidations as well as provided well invalidation messages for scientists running tests
 - Resulted in a **10% increase** in well data accuracy as well as a **3% increase** in testing efficiency to improve lung diagnostics
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EDUCATION

University of Waterloo – Waterloo, Ontario September 2022 – Present

- Bachelor of Applied Science: Computer Engineering, Honors, Co-Operative Program
Relevant Courses: C++, Signals & Processing, Data Structures and Algorithms, Embedded Microprocessor Systems