HARRY WANG

Computer Engineering Student

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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**

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

Quantispot 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

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