

# BRIAN LI

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## SKILLS

Programming Languages: Python, C++, Java, Java FX, HTML, CSS, Tailwind CSS, Javascript, React  
Other Tools: Arduino, Adobe Premiere Pro, Audacity, Git, Raspberry Pi, STM32, Figma

## RELEVANT EXPERIENCE

### Wat.AI

Neural Network Developer

September 2023 - Present

- Designed and prototyped **sparse** and **denoising** autoencoders using **PyTorch** and **Tensorflow** for compressing IoT cybersecurity data.
- Contributed to the testing of machine learning models focused on cyberattack detection for IoT devices.
- Helped optimize draft autoencoders through implementation of algorithms such as **exponential learning rate decays** and **analysis of learning curves**.

### Waterloo Formula Electric

Firmware Developer

September 2023 - Present

- Created hardware-in-the-loop (**HIL**) tests using **Python** to validate electric car components and determine expected behavior.
- Analyzed the Battery Management Unit (**BMU**) by stimulating its state of charge; conducted in-depth examination of **C** firmware code and schematics to identify source variables and functions.
- Utilized tools such as **STM32IDE**, **Virtual Box** and **Vagrant** to find translation between code and firmware input.

### St. Augustine Catholic High School

Full Stack Developer

December 2021 - June 2023

- Managed the front and back-end of the official school app website. Reached **500+** audience.
- Utilized **HTML**, **CSS** and **Vue.js** to help build and make weekly changes to website interface. Worked with **Firebase** to handle back-end data and user permissions.
- Collaborated within a **Agile workflow** in conducting and deploying weekly changes.

## PROJECTS

### Data Visualization Software *Java, JavaFx, CSS*

- Created a software that visualizes **real-time** data sheets in various graphic forms.
- Visualizations are **dynamic** and customizable based on user inputs and adjustments.
- Pulling from OurWorldinData, seamless **processing** of complex data.

### "Are Masks Masking Your Voice?" *Audacity, Pandas, Figma, Adobe Premiere Pro*

- Completed a research project that studied the correlation between one's voice output and mask worn.
- Measured voice output using **Audacity** and edited data using **Pandas**. Utilized **Figma** and **Premiere Pro** to designed project display and video.
- The project aimed to foster new solutions to the mask mandate. Earned Gold at the YRSTF and was selected to represent for Team York at the CWSF.

### "Sumo" Car Bot *Python, Arduino, Raspberry Pi, HTML, CSS*

- Created a fully functional mini car that was both **autonomous** and **controllable** by user through a **web server** using SSH protocol.
- Implemented the embedded system using **Arduino** and **Raspberry Pi**.
- The car was used as a "sumo" bot at a high school tournament against other student-built cars.

## AWARDS

### Debate Finalists

Broke as a finalist at the UOttawa 2023 Annual Debate Tournament.

EDS Debate Society

May 2023

### Hackathon Winner

Group awarded 3rd for creating most innovative plan in perfecting Nestle's launch to the online market. Given distinctions through describing use of tools such as AWS while deducting sizing of products.

University of Toronto, Nestlé Canada

October 2022

## EDUCATION

### University of Waterloo

Candidate for Bachelor of Applied Science in Computer Engineering

Waterloo, ON

September 2023 - Present