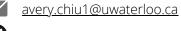
# **AVERY CHIU**









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averychiu64.github.io

## MECHATRONICS ENGINEERING STUDENT

## **EDUCATION**

### **University of Waterloo**

Waterloo, Ontario, Sept 2019 - Apr 2024

Candidate for Bachelor of Applied Science in Mechatronics Engineering (GPA: 3.98)

**Important Courses:** 

- Algorithms and Data Structures
- Introduction to Computer Structures & Real-Time Systems
- Microprocessors and Digital Logic

#### **WORK EXPERIENCE**

#### **Display Engineering Intern**

Palo Alto, California, Sept 2021 - Dec 2021

Tesla

- Developed the controls and path-planning algorithms to automatically calibrate and maneuver a 3-axis robot for touchscreen testing with Python
- Designed a GUI with PyQt5 to interface with the touch robot, utilizing multi-threading to handles events, visualize the robot's movement, and display test results simultaneously

## **Computer Vision Undergraduate Research Assistant**

Waterloo, Ontario, Apr 2021 - Sept 2021

University of Waterloo Vision and Image Processing Lab

- Implemented Mask-RCNN, Faster-RCNN, and RetinaNET with Detectron2 and PyTorch for disease detection in corn and compared the average precision/average recall of each model
- Created Python script to compute the average precision and recall of each image and output a PDF with a side-by-side comparison of the ground truth versus the predicted bounding boxes

## Firmware Developer Intern

Ottawa, Ontario, Jan 2021 - Apr 2021

Ford Motor Company

- Developed C code for the bootloader and kernel of Qualcomm Snapdragon chips which are used on the telematics control unit (TCU) of Ford vehicles
- Implemented image versioning and signing for secure over-the-air firmware updates

#### **Automotive R&D Intern**

Waterloo, Ontario, May 2020 - Aug 2020

Geotab

• Analyzed vehicle data using Google BigQuery and prepared dashboards to display visualizations with Python using libraries such as Matplotlib, NumPy, and Pandas

#### **DESIGN TEAMS**

## **Firmware Project Lead**

Waterloo, Ontario, Sept 2019 - Present

Midnight Sun Solar Car Team

- Designed the architecture for the CAN Explorer project, which helps decode and send messages to the solar car and which was created with Django, React, MongoDB, and Docker.
- Created the telemetry system with **Python** to read data, such as velocity and charge, from the solar car and store the data in **DynamoDB** to be displayed in a telemetry dashboard.

#### Telemetry/CAN Interface Manager

Waterloo, Ontario, Dec 2020 - Present

- Lead a small team of 4 people to develop the telemetry system and CAN interface to monitor and control a self-driving Chevrolet Bolt EV for the SAE Autodrive Challenge
- Constructed Python scripts that would receive commands from the path-planning team through the ROS interface and convert those commands into CAN messages to control features such as the steering and braking

### SKILLS

C/C++, Python, Unix, Java, Git, SQL, Matlab, ROS, Javascript, HTML/CSS