ERIC ZHAO

📞 647-985-2409
✉ eric.zhao@uwaterloo.ca
🔗 github.com/ericzhao625

in linkedin.com/in/ericzhao625
GRAB CAD grabcad.com/eric.zhao-10

SKILLS

Software | Python, C++, ROS 2, Git, Java, HTML, CSS, JavaScript
CAD | SOLIDWORKS, Fusion 360, Onshape, AutoCAD, Tinkercad, GrabCAD, GD&T
Other Skills | Raspberry Pi, Arduino, CircuitMaker, Jira, Microsoft Office, Adobe Creative Suite

WORK EXPERIENCE

BotBuilt 🔗

Mechatronics Intern   May 2023 - Aug 2023
  - Formulated processes and created tools for organizing and assembling electrical control panels and wiring harnesses.

SPC (Stud-Plate-Connector) Unit Tester
ROS 2, Python, C++, Onshape
  - Created a test bench to verify all functionalities of BotBuilt's SPC end-effector, used for connecting and naling wooden frames.
  - Integrated load cells to measure grip forces with an accuracy of **1 lbf**, and break-beam assemblies to capture nail gun speeds.
  - Developed interfaces to control encoded motors to autonomously manipulate the SPC to various stations on the unit tester.

Kindred Systems Inc. 🔗

Robotics Hardware Intern   Sep 2022 - Dec 2022
  - Fabricated multiple parts out of sheet metal, aluminum extrusions, and plexiglass for use in developing prototype systems.

Modular Induction Test Bench 🔗
Python, SOLIDWORKS, Excel
  - Designed and built a test bench which automatically recirculates, picks, and places parcels for continuous gripper testing.
  - Specced and integrated a 24-bit servo drive with Python and **EtherNet/IP** for up to **1 mm** conveyor positioning accuracy.
  - Developed a GUI to jog a FANUC arm with up to **1 mm** accuracy, and create custom pick and place routines.

Ford Motor Company 🔗

Software Performance, Stability, and Power Optimization   Jan 2022 - Apr 2022
  - Performed daily triages on battery drain events to determine ECUs responsible for keeping the vehicles hardware awake.

Battery Drain Analysis Automation Script
Python, Selenium, Excel
  - Developed a triage automation script able to download, scan, and analyze battery drain logs from the Ford's diagnostics portal.
  - Improved triage analysis logic increasing the automated triage accuracy by **30%** and weekly triage speed by **25%**.

Electrans Technologies Ltd. 🔗

Mechatronics Engineering Intern   May 2021 - Sep 2021
  - Initiated and completed several projects to help develop a next generation electronic auxiliary system for commercial vehicles.

Electric Vehicle Battery Status Monitor
CircuitMaker, Fusion 360, C++, Arduino
  - Designed a custom PCB to monitor and display the state of charge, voltage, and current draw of a high voltage system.
  - Implemented Arduino code to receive specific **CAN bus** messages for general system state monitoring.

DESIGN TEAM EXPERIENCE

Midnight Sun Solar Car Team 🔗

Battery Box Lead   Jan 2021 - Present
  - Leading the team responsible for the design of a battery pack and enclosure for a fully solar powered electric car.

EDUCATION

University of Waterloo   Sep 2020 - Apr 2025

Candidate for BASc, Mechatronics Engineering   Cumulative GPA: 93.09 (4.0)

AWARDS

First in Class Engineering Scholarship   Feb 2021

Presented to the top student of the class during each term.