

ERIC ZHAO

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SKILLS

Software | C++, Python, Git, Java, HTML, CSS, JavaScript
CAD | SOLIDWORKS, Fusion 360, AutoCAD, Tinkercad, GrabCAD, GD&T
Other Skills | Arduino, CircuitMaker, Ultimaker Cura, Microsoft Office, Jira, Figma, Adobe Creative Suite

WORK EXPERIENCE

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.
- Planned and performed multiple tests to collect vibrational and position data on the INDUCT arms and pedestals for analysis.

Modular Induction Test Bench [↗](#)

Python, SOLIDWORKS, 3D Printing

- Designed and built a test bench which automatically recirculates, picks, and places parcels for continuous induction testing.
- Spec'ed and integrated a 24-bit servo drive system with Python and EtherNet/IP for accurate conveyor parcel positioning.
- Developed a GUI interface which allows the user to jog a FANUC arm in real time and create their own 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.
- 3D printed custom designed mounts to secure communications hardware to laptops for compact and mobile outdoor testing.

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 system 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.
- Developing and running tests on capacity, internal resistance, and discharge temperature for a variety of lithium-ion cell models.

Battery Module Design

SOLIDWORKS, Spot Welding, 3D Printing

Feb 2021 - Present

- Utilizing 21700 lithium-ion cells in a 4S8P module design, connected in series to form a 36S8P battery pack, able to store up to 5241Wh of energy with a nominal voltage of 130.68V.
- Conducting rapid prototyping with 3D prints and testing rigs to continuously improve electrical and thermal performances.

EDUCATION

University of Waterloo

Candidate for BASc, Mechatronics Engineering

Sep 2020 - Apr 2025

Cumulative GPA: 93.34 (4.0)

AWARDS

First in Class Engineering Scholarship

Feb 2021

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