

HAOCHENG ZHANG

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SUMMARY

- 2+ years of experience with vehicle controls development, modeling, and simulations
- Strong leadership and communication skills through team management and cross-team projects
- Excellent time management skills through balancing extracurriculars with school work
- Fine attention to detail gained with laboratory and hazardous material experience

EXPERIENCE

University of Waterloo EcoCAR Team

Vehicle Controls Team Lead

Feb. 2021 to Current

- Re-engineered production SUV into a P4-Parallel-through-the-road hybrid electric vehicle
- Team lead responsible for vehicle supervisory, powertrain, and body controls
- Secured \$18,000 for a high voltage test bench for UWaterloo student teams
- [Placed 5th out of 11th in a student competition sponsored by General Motors and the US DOE \(link\)](#)
- [Recognized in dSpace publication for overcoming COVID related challenges \(link\)](#)

Vehicle Controls Developer

May 2019 to Feb. 2021

- Developed vehicle state machine and component communication interfaces in Simulink
- Conducted one-at-a-time sensitivity analysis on vehicle model to determine effects on vehicle performance

Lixar IT.

Data Science Intern

Jan. 2020 to Apr. 2020, Jan. 2021 to Aug. 2021

- Developed forecasting and anomaly detection models for energy trading using Python, Sklearn, FbProphet
- Designed content based recommendation system using universal sentence encoder for improving energy sales

University of Waterloo

Battery Modeling Research Assistant

Jan. 2018 to Apr. 2018, Sept. 2018 to Dec. 2018

- Developed fault detection algorithm for a commercial Battery Management System sensitive to 0.15% error in MATLAB
- Constructed equivalent circuit models for voltage and state-of-charge models in MATLAB
- Parameterized cells using hybrid pulse power characterization (HPPC) to obtain model fitting data

EDUCATION

University of Waterloo

May 2022

Bachelor of Applied Science Chemical Engineering

Fall 2018 Research Award Recipient

Winter 2017 Dean's List

SKILLS

Python, Matlab, Simulink, Scikit-Learn, Tensorflow, Pandas, Vector CANalyzer, dSpace ControlDesk

PROJECTS

Hybrid Vehicle Torque Control Strategy

Sept. 2021

- Designed and developed a rule based torque control strategy in Simulink, achieving 79% increase in MPGe
- Optimized algorithm through software-in-the-loop (SIL) development
- Validated algorithm through hardware-in-the-loop (HIL) and vehicle-in-the-loop (VIL) testing