

# HAOCHENG ZHANG

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## SKILLS

Python, Matlab, Simulink, Battery Modeling, Git, Scikit-Learn, Tensorflow, Pandas, Microsoft Azure

## SUMMARY

- 2+ years of experience with data processing, programming, and visualization
- Self starter and driven to learn; working knowledge of deep learning libraries
- Strong leadership and communication skills through team management and cross-team projects
- Excellent time management skills through balancing extracurricular with school work
- Fine attention to detail gained with laboratory and hazardous material experience

## EXPERIENCE

### Data Science Intern

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

Lixar IT.

- 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

### Vehicle Controls Team Lead

May 2019 to Current

University of Waterloo EcoCAR Team

- Re-engineered production SUV into a P4-Parallel-through-the-road hybrid electric vehicle
- Team lead responsible for vehicle supervisory control and battery component control
- 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](#))
- 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

### Electrochemical Research Assistant

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

University of Waterloo

- 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

## PROJECTS

### Battery Plant Model

Sept. 2019

- Led equivalent circuit model and battery controller model development for hybrid design team
- Achieved 47% error (RMSE) reduction from existing linear resistor model
- Parameterized cell model using hybrid pulse power characterization

## EDUCATION

University of Waterloo

May 2022

Bachelor of Applied Science Chemical Engineering

Fall 2018 Research Award Recipient

Winter 2017 Dean's List