

HAOCHENG ZHANG

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SKILLS

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

Hybrid Vehicle Controls Lead Developer

May 2019 to Current

University of Waterloo EcoCAR Team

- Lead developer responsible for vehicle supervisory control and battery component control
- Recognized in dSpace publication for team contributions during COVID-19
- Conducted sensitivity analysis on vehicle plant model to determine effects on vehicle performance
- Designed workflow integrating safety analysis into software-in-the-loop and hardware-in-the-loop testing
- Developed vehicle state machine and component interfaces

Electrochemical Research Assistant

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

University of Waterloo

- Partnered with industry leaders to integrate fault detection algorithm into Battery Management System
- Designed and presented novel fault detection algorithm sensitive to 0.15% of error in MATLAB
- Constructed equivalent circuit and hysteresis models for voltage and state-of-charge models in MATLAB
- Parameterized cells using hybrid pulse power characterization (HPPC) to obtain model fitting data

Data Scientist

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

Lixar IT.

- Designed content based recommendation system using Tensorflow
- Designed binary classification using Scikit-Learn to predict windshield repair sales
- Conducted sensitivity analysis to optimize sale probability

PROJECTS

Battery Plant Model

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

F1 Analytics and Visualization

- Developed python module to support collection and visualization of F1 data
- Conducted analysis of 2020 season using Jupyter notebooks and python libraries

EDUCATION

University of Waterloo

Bachelor of Applied Science Chemical Engineering

Fall 2018 Research Award Recipient

May 2022