HAOCHENG ZHANG

✉ haocheng.zhang@uwaterloo.ca in haochengzhang0 ⊙ haochengZhang

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

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 (link)
- 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 to integrate fault detection algorithm into a commercial Battery Management System
- Designed and presented novel fault detection algorithm sensitive to 0.15% of 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
- 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
- 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   May 2022
Bachelor of Applied Science Chemical Engineering
Fall 2018 Research Award Recipent