Yuchen Wang

Email: wyc_077@sjtu.edu.cn Mob: (+86)18355171118
Address: Dongchuan Road 800, Minhang District, Shanghai, 200240, China

EDUCATION

School of Electronic Information and Electrical Engineering, Shanghai Jiao Tong University

- M.S. in Control Science & Engineering, GPA: 3.29/4.0 Sep 2021-Mar 2024

School of Control and Computer Engineering, North China Electric Power University

- B.E. in Automation, GPA: 3.29/4.0 Sep 2017-Jul 2021

PUBLICATIONS

- Temperature State Prediction for Lithium-ion Batteries Based on Improved Physics-Informed Neural Networks, submitted to "Journal of Energy Storage", under review status (1st Author)
- A Deep Transfer Operator Learning Method for Temperature Field Reconstruction in a Lithium-ion Battery Pack, to be submitted to "IEEE Transactions on Industrial Informatics" (1st Author)

RESEARCH EXPERIENCES

Research Assistant, Shanghai Jiao Tong University Sep 2021- Present

Advisor: Prof.Changjiang Ju, Prof.Genke Yang

- Conducted research on the entire lifecycle temperature prediction of lithium-ion batteries based on Physics-informed Neural Networks (PINN) through participating in the National Key Research and Development Program project titled "Development of Factory Operating System for Process Industry Intelligent Manufacturing Foundation Information Platform."
- Conducted research on the reconstruction of temperature fields in a lithium-ion battery pack based on Deep Operator Networks (DeepONet) through participating in the "Dynamic Parameter Detection, Performance Evaluation, and System Safety Technology Development of Lithium-ion Battery Systems" project, funded by the Key Research and Development Program of Ningbo City.
- Conducted research on leveraging transfer learning techniques to enhance the performance of temperature field reconstruction methods based on deep learning in out-of-distribution scenarios.

Research Assistant, North China Electric Power University Mar 2020- Mar2021

Advisor: Prof.Tongxiang He

- Implemented Proportional-Integral-Derivative (PID) control methods using Single-Input-Single-Output (SISO) and Cascade Three-Input-Three-Output (TITO) configurations for the water level in the steam drum and pump feedwater flow control of a boiler's feedwater system. Developed Distributed Control System (DCS) configuration diagrams using PAS-300 software.
- Completed undergraduate thesis entitled *A Study on Superheated Steam Temperature System using The State Feedback Control with Error Integral Based on Simulink*

WORK EXPERIENCES

Algorithm Engineer, Battery Management System Jun 2022- Jul 2023

Advisor Dr. Can Xiong

- Led the development of an LSTM-based algorithm for lithium-ion battery temperature state estimation.
- Contributed to the development of an Extended Kalman Filter-based algorithm for State of Charge (SOC) estimation of lithium-ion batteries
- Participated in the development of a Gaussian Process Regression-based algorithm for State of Health (SOH) prediction of lithium-ion batteries.

Intern, Ningbo Industrial Internet Institute Jun 2021- Sep 2021

- Developed industrial PLC HMI (Human-Machine Interface) software using C#, accomplishing firmware updates and file operations.
- Participated in the preparation of a research report on the hydrogen energy industry.

AWARDS

- School-level Second-class Scholarship from 2021 to 2023
- College-level third-class scholarships in 2020
- Alumni Scholarship in 2019

SKILLS AND OTHERS

Programming Skills: C/C++/C#, Matlab, Python, Proficiency in major deep learning frameworks such as Pytorch, Pytorch Lightning, Tensorflow
Language: CET4 569, CET6 512, TOEFL (preparing)