

HAOTIAN MA

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RESEARCH INTERESTS

Advancing data-driven methods in the system/cell level of electrochemical energy sectors for efficiency prediction, system optimization, carbon footprint reduction, and economic analysis. Prior research includes machine learning for material discovery, optimizing hydrogen production process, applying generative AI, and visualizing energy data, driving towards sustainable and efficient energy solutions.

WORKING EXPERIENCE

Huawei Munich Research Center

Ph.D. Research Scientist 03/2024 – Present
Development of a multiphysics composite electrode model for lithium-ion batteries with silicon/graphite.
04/2024 – Present; Munich, Germany
Reference: Xi Yang, President of Munich Center

Warwick Manufacturing Group

Research Assistant 01/2023 – 07/2023
Develop a ECG data analysis kivy-based APP using Python.
03/2021 – 09/2021; Coventry, United Kingdom
Reference: Sai GU(FREng), Deputy Pro-Vice-Chancellor

Huawei Nuremberg Research Center

Research Engineer 10/2023 – 04/2024
Intern Engineer 04/2022 – 10/2023
Uncertainty estimation and safety evaluation of electrochemical battery energy storage based device.
04/2022-04/2024; Nuremberg, Germany
Reference: Datao Wang, Staff Research Engineer

Global Energy Interconnection Research Institute

Research Engineer Intern 04/2022 – 10/2023
Ultrasonic spraying method for fabricating catalyst coated membrane electrode assembly of electrolyser and fuel cell.
04/2021 – 09/2022; Birmingham, United Kingdom
Reference: Qiao Geng , Staff Research Engineer

XPeng Motors Europe

Technical Assistant 03/2021 – 09/2021
Business analyst for charging pile allocation of TESLA .
01/2017 – 09/2017; Amsterdam, Netherlands
Reference: Joyce Beraldo, Head of Charging Europe

TSu Energy Co., Ltd

Founder & Algorithm Engineer 09/2020 – Present
Machine learning based algorithm development for electrolyser.
07/2016 – Present; Shanghai, China
Reference: Shangfeng Du, Associate Professor at UoB
Leandro L Minku, Associate Professor at UoB

PERSONAL SKILLS

SELECTED SKILLS: Python(Jax,NumPy,PyTorch,Pandas)
C/C++(CUDA), \LaTeX (PGFPlots,TikZ),SQL,PHP
JavaScript/CSS/HTML,Comsol,Linux,Aspen,Ansys

Last updated: April 6, 2024.

EDUCATION BACKGROUND

Massachusetts Institute of Technology

Summer Program, *Institute of Data , System and Society*
07/2023 – 12/2023; Cambridge, MA(Remote)

University of Warwick,Ph.D. Candidate

School of Engineering
04/2023 – Present; Coventry, UK

University of Birmingham,Ph.D. Candidate

School of Engineering & Computer Science
09/2021 – 12/2022; Birmingham, UK

University of Nottingham,M.Sc.

Sustainable Energy Engineering
09/2020 – 09/2021; Nottingham, UK

Southeast University ,BEng

Energy & Power Engineering
2019 Outstanding Bachelor Graduates
09/2015 – 07/2019; Jiangsu, China

SELECTED AWARDS & HONORS

Silver Award as Team Leader
Schneider Electric "Go Green" Competition 2020
Outstanding Bachelor Graduates
Southeast University 2019
Outstanding Dissertation Award
Southeast University 2019
Third Price as Team Leader
The 13th National University Student Social Practice and Science Contest on Energy Saving and Reduction 2018
Silver Award as Team Leader
The 20th "Challenge-Cup" Chinese College Students Entrepreneurship Competition 2018

PUBLICATIONS(PLAN INCLUDED)

- [1] *Technical and economic performance assessment of blue hydrogen production using new configuration through modelling and simulation.* International Journal of Greenhouse Gas Control.
- [2] *A GAN-Based data augmentation approach for optimizing proton exchange membrane water electrolyzer performance prediction(Planned).* International Journal of Hydrogen Energy.
- [3] *Leveraging Generative Adversarial Networks to Optimize Dynamics and Enhance Performance Prediction Accuracy of Alkaline Electrolysis Systems in Aspen Plus Models (Planned).* International Journal of Greenhouse Gas Control.

EXTRACURRICULAR ACHIEVEMENTS

STUDENT UNION: Vice President of Undergraduate Student Union, School of Energy and Environment,Southeast University;
Vice President of the Postgraduate Student Union, School of Engineering, University of Nottingham;

VOLUNTEERING EXPERIENCE: Annual Conference Co-organizer of the Association of British Chinese Professors; Volunteering in the foundation of Outstanding Young Scholars Society