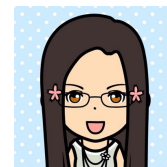


Haoxiang Lu

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Research Interests

AI/ML in Environmental Engineering.

Education

- | | | |
|-------------|--|----------------------------------|
| 2024 – 2027 | University of Chinese Academy of Sciences
M.S. in Environmental Engineering, <i>GPA – 3.8</i>
Core Courses: Data Analysis in Environmental Engineering Practice, Mathematical Models of Environmental Engineering and MATLAB Application, Pattern Recognition and Machine Learning. | <i>Advisor: Prof. Zhi Qian</i> |
| 2020 – 2024 | East China University of Science and Technology
B.S. in Environmental Engineering, <i>GPA – 3.4</i>
Outstanding Engineer Education and Training Program
Thesis: <i>Research on the Preparation of Ti_3C_2 MXene-based Composite Materials and Their Photocatalytic CO_2 Reduction Performance</i> | <i>Advisor: Prof. Juying Lei</i> |

Research Publications

Professional Experience

Research

- | | | |
|-----------------------|--|----------------------------|
| Jul. 2023 - Sep. 2023 | Tongji Architecture Design (Group) Co., Ltd.
Research Intern
Conducted comprehensive literature review on activated carbon regeneration in water treatment using bibliometric software (<i>VOSviewer</i> and <i>CiteSpace</i>). Analyzed research trends, collaboration networks, and emerging technologies in the field. | <i>Advisor: Yuting Zhu</i> |
| Aug. 2024 - present | Weiqiao National Higher Technology Research Institute
Research Assistant
Designed fuzzy predictive control systems for hypergravity desulfurization reactors. Implemented improved Adaptive Neuro-Fuzzy Inference Systems (ANFIS) to address multivariable coupling control prediction challenges in rotating packed bed (RPB) reactors. Applied particle swarm optimization for multi-objective reactor performance enhancement. | |

Industry

- | | | |
|-----------------------|---|--|
| Aug. 2024 - Dec. 2024 | Shandong Weiqiao Pioneering Group Company Limited
Process Engineer
Led implementation of hypergravity desulfurization reactors at Zouping Alumina Plant No. 3. Designed pipeline configurations and instrumentation layout for experimental apparatus with $3000\text{ m}^3/\text{h}$ gas processing capacity. Achieved 99% H_2S absorption efficiency with system demonstrating stable operation for over one year. | |
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Professional Experience (continued)

Teaching Assistant

Sep. 2025 - present

University of Chinese Academy of Sciences

Teaching Assistant in *Mathematical Models of Environmental Engineering and MATLAB Application*.

Skills

Coding	Python , MATLAB, SQL, \LaTeX .
AI/ML	Pytorch , Scikit-Learn, Scikit-Fuzzy, LLMs, XGBoost, CatBoost, Hyperopt, ...
Experiment	XRD, SEM, TEM, FTIR, Raman, XPS, UV-vis, EIS, EBS, TPC, EDS.
Auxiliary	Research, Teaching, Presentation, Technical Writing.

Honors and Recognition

Awards and Honors

2024	Gold Medal , 49th International Exhibition of Inventions Geneva, for "High Gravity Selective Desulfurization Technology."
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Scholarships

2024 – 2026	Graduate Academic Scholarship , University of Chinese Academy of Sciences.
2023	Outstanding Undergraduate Scholarship , University of Chinese Academy of Sciences.
2020 – 2023	Merit-based Scholarship (Third Class) , East China University of Science and Technology.