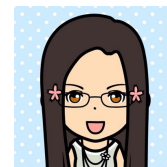


# Haoxiang Lu

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## Research Interests

AI/ML in Environmental Engineering.

## Education

- 2024 – 2027     **University of Chinese Academy of Sciences** (*U.S. News Ranking: 69<sup>th</sup>*)  
M.S. in Environmental Engineering, *GPA – 3.8/4.0*     *Advisor: Prof. Zhi Qian*  
Core Courses: **Data Analysis** in Environmental Engineering Practice, **Mathematical Models** of Environmental Engineering and MATLAB Application, Pattern Recognition and **Machine Learning**
- 2020 – 2024     **East China University of Science and Technology** (*U.S. News Ranking: 577<sup>th</sup>*)  
B.S. in Environmental Engineering, *GPA – 3.4/4.0*     *Advisor: Prof. Juying Lei*  
Outstanding Engineer Education and Training Program  
Thesis: *Preparation of  $\text{Ti}_3\text{C}_2$  MXene-based Composites for Photocatalytic  $\text{CO}_2$  Reduction*

## Research Publications

## Professional Experience

### Research

- Jul. 2023 - Sep. 2023     **Tongji Architecture Design (Group) Co., Ltd.**  
Research Intern     *Advisor: Yuting Zhu*  
Conducted comprehensive literature review on activated carbon regeneration in water treatment using bibliometric software (*VOSviewer* and *CiteSpace*). Analyzed research trends, collaboration networks, and emerging technologies in the field.
- 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%  $\text{H}_2\text{S}$  absorption efficiency with system demonstrating stable operation for over one year.

## Professional Experience (continued)

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### Teaching Assistant

Sep. 2025 - present

**University of Chinese Academy of Sciences**

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

## Skills

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Coding	<b>Python</b> , MATLAB, SQL, $\LaTeX$
AI & ML	<b>Pytorch</b> , 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

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### Awards and Honors

2024	<b>Gold Medal</b> , 49 <sup>th</sup> International Exhibition of Inventions Geneva, for " <i>High Gravity Selective Desulfurization Technology</i> "
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### Scholarships

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