

# Haoxiang Lu

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## Education

2024 – 2027	📖	<b>University of Chinese Academy of Sciences</b> ( <i>U.S. News Ranking: 54<sup>th</sup></i> )
Beijing, China		M.S. in Environmental Engineering, <i>GPA – 3.8/4.0</i> <i>Advisor: Prof. Zhi Qian</i> 🆔
		Core Courses: <b>Data Analysis</b> in Environmental Engineering Practice, <b>Mathematical Models</b> of Environmental Engineering and MATLAB Application, Pattern Recognition and <b>Machine Learning</b> , <b>Optimization</b> for Data Science, Introduction to <b>LLMs</b>
2020 – 2024	📖	<b>East China University of Science and Technology</b> ( <i>U.S. News Ranking: 533<sup>th</sup></i> )
Shanghai, China		B.S. in Environmental Engineering, <i>GPA – 3.3/4.0</i> <i>Advisor: Prof. Juying Lei</i>
		Outstanding Engineer Education and Training Program
		Thesis: <i>Preparation of Ti<sub>3</sub>C<sub>2</sub> MXene-based Composites for Photocatalytic CO<sub>2</sub> Reduction</i>

## Research Publications

## Research Experience

## Conferences & Presentations

Jul. 2026	📖	<b>The 6<sup>th</sup> National Forum</b>	Beijing, China
		Poster Presentation: <i>Optimizing</i>	
Jul. 2025	📖	<b>The 6<sup>th</sup> National Forum</b>	Beijing, China
		Oral Presentation: <i>Optimizing</i>	

## Work Experience


### Teaching


- 📖 **University of Chinese Academy of Sciences** Sep. 2025 - Present
- Teaching Assistant
- Teaching Assistant in *Mathematical Models of Environmental Engineering and MATLAB Application*

### Research


- 📖 **Weiqiao National Higher Technology Research Institute** Aug. 2024 - Present
- Research Assistant *Advisor: Prof. Zhi Qian* 🆔
- Designed and implemented advanced fuzzy predictive control systems for hypergravity desulfurization reactors
- Developed improved Adaptive Neuro-Fuzzy Inference Systems (ANFIS) to address multivariable coupling challenges
- Applied particle swarm optimization techniques to enhance multi-objective reactor performance

## Work Experience (continued)

-  **Tongji Architecture Design Co., Ltd.**  
Research Intern






Jul. 2023 - Sep. 2023  
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

### Industry

-  **Shandong Weiqiao Pioneering Co., Ltd. (*Fortune Global 500*)**  
Process Engineer


Aug. 2024 - Dec. 2024
- Led implementation of innovative high-gravity desulfurization reactors at Zouping Alumina Plant No.3
  - Designed optimized pipeline configurations and instrumentation layout for experimental apparatus with 3000  $m^3/h$  gas processing capacity
  - Achieved 99%  $H_2S$  absorption efficiency through process optimization and parameter tuning
  - Developed monitoring protocols that ensured stable system operation for over one year

## Skills




Coding	 <b>Python</b> , R, MATLAB, Mathematica, SQL, $\LaTeX$
AI & ML	 <b>PyTorch</b> , <b>Scikit-Learn</b> , LLMs, XGBoost, CatBoost, Scikit-Fuzzy, Optuna
Software	 SPSS, Jade, Adobe Illustrator, Fluent, Aspen Plus, VOSviewer, OpenLCA
Instruments	 XRD, SEM, TEM, FTIR, Raman, XPS, UV-vis, EIS, EBS, TPC, EDS
Professional Skills	 Research Design, Technical Writing, Data Analysis, Teaching, Presentation

## Honors and Recognition

### Awards and Honors

- 2024
-  **Gold Medal** (Team Member), 49<sup>th</sup> International Exhibition of Inventions Geneva, for “*High Gravity Selective Desulfurization Technology*”

### 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