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Haoxiang Lu

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Education

2024 – 2027
Beijing, China

University of Chinese Academy of Sciences
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**, **Optimization** for Data Science, Introduction to **LLMs**

2020 – 2024
Shanghai, China

East China University of Science and Technology
B.S. in Environmental Engineering, *GPA – 3.3/4.0* *Advisor: Prof. Juying Lei*
Outstanding Engineer Education and Training Program
Thesis: *Preparation of Ti_3C_2 MXene-based Composites for Photocatalytic CO_2 Reduction*

Research Publications

Journal Articles

1. **Haoxiang Lu**†, Xinhu Sun†, Guozhong Li, and Zhi Qian*, "An Interpretable Predictive Model for High-Gravity NO_x Oxidation-Absorption Driven by Physics-Informed Neural Networks," *Industrial & Engineering Chemistry Research (In Peer Review)*, 2025.
2. Xinhu Sun†, **Haoxiang Lu**†, and Zhi Qian*, "A Bayesian-State-ANFIS Model for H_2S Removal using a High-Gravity Reactor," *Chemical Engineering Science (In Peer Review)*, 2025.

Work Experience

Teaching

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

East China University of Science and Technology Mar. 2021 - Jul. 2021
▷ **Teaching Assistant** in *Advanced Mathematics (II)*

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

Tongji Architecture Design Co., Ltd. Jul. 2023 - Sep. 2023
Research Intern *Advisor: Dr. 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

Work Experience (continued)

Industry

Shandong Weiqiao Pioneering Co., Ltd. (*Fortune Global 500*) Aug. 2024 - Dec. 2024
Process Engineer
▷ 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	**Python**, R, MATLAB, Mathematica, LaTeX, SQL
AI & ML	**PyTorch**, **LLMs**, Scikit-Learn, 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	**Teaching**, Research Design, Technical Writing, Data Analysis, Presentation

Honors and Recognition

Awards and Honors

2024 **Gold Medal** (Team Member), 49th 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