Ziluo Liu

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Education

Nankai University Sept. 2021 - Present
B.S. Environmental Engineering *Overall GPA: 3.72/4.00* *Rank: 1/24*

Coursework

Main Courses: Organic Chemistry(98), Inorganic Chemistry(91), Environmental Aquatic Chemistry(96), Physical Chemistry(94), Engineering Fluid Mechanics(97), Physical Pollution Control(94)
Awards: Tianjin Municipal People's Government Scholarship, *Daishugui* Environmental Chemistry Scholarship, Innovation Scholarship, Excellent RA etc.

Skills

English: TOFEL:93(Reading19 Listening28 Speaking22 Writing24), CET-6:616
Coding: C++, Python, LaTeX
Tools: Git/GitHub, VS Code, PyCharm, Auto-CAD

Projects and Internships

Study on the Impact of Motor Vehicle Emissions on Air Quality Based on Machine Learning

Apr.2023 - Apr.2024(Project Completed)

- Undergraduate Research and Innovation Project, Project Leader
- In view of the increasingly serious problem of air pollution caused by motor vehicles, a motor vehicle based air pollution control system was established based on XGBoost, LightGBM and AdaBoost algorithms. The model of vehicles and air pollutants (NO_2 and O_3) achieves the purpose of predicting the concentration of air pollutants through vehicle pollutant emissions data.

Smart Industrial Park Water Quality Management System

July 2023 - Present(Ongoing Project)

- Provincial and Ministerial Level Smart Water Award-winning Project, Project Leader
- In view of the complex characteristics of sewage water quality in industrial parks and the difficulty in predicting indicators, a real-time water quality prediction model was established based on neural network algorithms to implement. It achieves the purpose of predicting various indicators of effluent water quality in industrial parks, so as to provide timely early warning of major water pollution accidents.

Rainwater and Sewage Diversion Service Integrated System

July 2023 - Present(Ongoing Project)

- China International "Internet+" Innovation and Entrepreneurship Project, Core Member
- Develop "rainwater and sewage diversion service integrated system", including smart industrial park water quality management system, smart pipe network desilting system and smart flow interception and regulation Storage technology, etc.

Papers

Research on the Impact of Vehicle Emission NO_x on Ambient NO_2 Based on Machine Learning Mar. 2024
Manuscript Under Review, First Author

Statistical analysis and development trend of water supply network leakage in Japan Jun. 2024
China Water & Wastewater, Second Author

Smart Industrial Park Water Quality Management System[Software] Jun. 2023
Copyright Administration of the People's Republic of China, 2024SR0003175

Air Pollutant Concentration Prediction System[Software] May. 2024
Patent Pending

Competitions

Bronze Award **at The 10th Tianjin Youth Innovation and Entrepreneurship Competition**

Jul. 2023 (Tianjin Division)

First Prize **at The 5th Nankai University "President's Cup" Innovation and Entrepreneurship Competition**

Sep. 2023

Third Prize **at The 3rd Guangdong Smart Water Conservancy Innovation Competition**

Sep. 2023

Silver Award **at The 9th China College Students' 'Internet+'Innovation and Entrepreneurship Competition**

Oct. 2024 (Tianjin Division)

First Place **at 2023 Tianjin Innovation and Entrepreneurship Competition**

Nov. 2023 (Team group - Energy Saving and Environmental Protection)

Second Prize **at The 1st Beijing-Tianjin-Hebei College Student Green Entrepreneurship Competition**

Nov. 2023 (Team group - Practical Entrepreneurship)

Third Prize **at The 5th National Undergraduate Municipal Environmental Innovation and Practice Ability Comp**

Nov. 2023 (Huabei Division - Virtual Reality and Experiment)

Student Work and Social Practice

President of Nankai University Environmental Science Association Sep. 2023 - Present
Plan and organize environmental knowledge popularization, water quality monitoring and other activities

Academic Class Monitor, Class of 2021 Sep. 2023 - Present