

# Suwen JIN

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Portfolio: <https://shizukuyu.com/>

## EDUCATION

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### University College Dublin

Master of Science, Computer Science (120 ECTS)

GPA: 3.5/4.2

Dublin, Ireland

Sep 2022 - Jan 2024

### Xiamen University Tan Kah Kee College

Bachelor of Engineering, Environmental Science and Engineering

GPA: 3.4/4.0 (Ranking: 18/192)

Xiamen, China

Sep 2018 - Jun 2022

### University of Nottingham Ningbo China

Summer School: Digital Future

Ningbo, China

Jun 2023

## SKILLS SUMMARY

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Experiences in Computer Science with focus on data analysis, machine learning, and web development projects.

- **Selected key courses:** *Machine Learning with Python, Cloud Computing, Data Mining etc.*
- **Programming Languages:** *Python, Java, Javascript, NCL, Bash, R etc.*
- **Database Management:** *MySQL, PostgreSQL, Redis, MongoDB.*
- **Machine Learning:** *Scikit-learn, PyTorch, TensorFlow.*

Solid basic knowledge on Environmental Science and Engineering. Laboratory experience with a focus on Water Treatment; Model simulation experience in Weather Forecast Downscaling.

- **Selected key courses:** *Environmental Monitoring, Environmental Statistics, Fundamentals of Environmental Engineering, Reading and Drawing of Architecture Charts etc.*
- **Experimental skills:** *GC-MS, HPLC-MS, UV-Vis.*

General research skills.

- **Software:** *Origin, Jupyter Notebook, MATLAB, Google Analytics.*
- **Design Tools:** *L<sup>A</sup>T<sub>E</sub>X, Figma, Adobe Illustrator, AutoCAD.*

## PROJECTS

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### Developing a Regional Reanalysis System for High-Impact Weather Cases using the 4D-Var Data

#### Assimilation Technique

Hong Kong University of Science and Technology, Hong Kong Observatory

Advisor: Prof. Xiaoming Shi and Dr. Yueya Wang

Hong Kong, China

Sep 2024 - present

- Conducted data preprocessing including weather station data, Sounding, Radar and Wind profiler into NetCDF/4DVar format which is suitable for WRF/WRFDA to process.
- Responsible for designing the cycling scheme for data assimilation and tuning the parameter such as length scale and var scale to make the DA result more closer to the ERA5 and observation data.

### Traffic Prediction based on NYC Taxi Data using Machine Learning

University College Dublin

Advisor: Prof. Gavin McArdle and Prof. Fatemeh Golpayegani

Dublin, Ireland

Jun 2023 - Aug 2023

- Collected and preprocessed historical taxi data and weather data, optimizing data quality; Conducted feature engineering to extract multidimensional features like time, space, weather, and events as model inputs.
- Developed models using XGBoost and Random Forest to predict future taxi zone busyness level. Validated and optimized predictive model for New York City taxi zone congestion assessment.

### Analyzing Climate Change Patterns using Time Series

University College Dublin

Kaggle Project

Dublin, Ireland

May 2023

- Selected appropriate artificial intelligence and deep learning models based on specific needs of the assessment project of Climate Change; Processed large-scale datasets using the Spark distributed computing framework.
- Utilized LSTM to successfully predict historical weather data temperatures; Improved model accuracy in future temperature predictions by tuning hyperparameters of the neural network.

## Removal of NDMA from Water by UV-Advanced Oxidation Process

Xiamen University Tan Kah Kee College

Advisor: Prof. Xiaosong Zha

Xiamen, China

Jan 2021 - Apr 2022

- Effectively utilized UV/H<sub>2</sub>O<sub>2</sub> and UV/PS to efficiently degrade N-nitrosodimethylamine (NDMA) in water; Optimized water treatment processes by adjusting parameters such as oxidant dosage, pH, dissolved oxygen etc.
- Conducted detailed analyses using High-Performance Liquid Chromatography (HPLC) to monitor and quantify reaction products.

## Transformation of Chloride Ions in Electro-Oxidation Technology

Fudan University, Tongji University

Advisor: Prof. Yan Liu and Ms. Chenxi Li

Shanghai, China

Jul 2021 - Sep 2021

- Operated and maintained lab instruments(GC-MS,HPLC), analyzed pre-made Trichloromethane samples using mass spectrometry, and superimposed chromatograms of different samples to test the content changes.
- Made detailed observations and produced graphs based on the experimental findings.

## WORK EXPERIENCE

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### Hong Kong University of Science and Technology, Hong Kong Observatory

Research Assistant

Hong Kong, China

Sep 2024 - Present

- Responsible for developing a regional downscaling system for high-impact weather events using WRFDA, enhancing prediction accuracy and reducing the resolution from 10km to 2km.

### GDS Holdings Ltd.

Large Language Model Intern

Shanghai, China

Jan 2024 - June 2024

- Responsible for developing an interactive data center introduction system based on the RAG and fine-tuning instructions for Llama2.

## PUBLICATIONS

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Xiaosong Zha, **Suwen Jin**, Qian Zhao, Peinan Huang, et al. Research on the removal of NDMA from water using ultraviolet-based advanced oxidation technology [J]. *Chinese Journal of Water Treatment Technology*, **2022** (In Chinese)

XiaoSong Zha, Lin Zhang, YuanJie Weng, ZhiLiang Feng, **Suwen Jin**. Reductive Degradation of N-Nitrosodimethylamine in Water by Ultraviolet Advanced Reduction Processes[J]. *Chinese Journal of Applied Chemistry*, **2022** (In Chinese)

## AWARDS

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### Certificate of Completion

Shanghai AI Laboratory - InternLM Practical Camp

2024

### Excellent Student Scholarship (awarded to the top 10% of the grade)

Xiamen University Tan Kah Kee College

2018, 2019, 2020, 2021

### Group Leader Award, Provincial level

National College Students' Innovative Entrepreneurial Training Plan Program

2020

### First Prize, Group leader

School Science Contest on Energy Saving Emission Reduction

2019

## PERSONAL DETAIL

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Nationnality: Chinese

Gender: Female

Hobbies: Skateboarding, Playing the Guitar, Visiting Museums, and Art Exhibitions