

Jessica Sheng

+44(0) 7443754249

[linkedin.com/in/jessica-sheng97/](https://www.linkedin.com/in/jessica-sheng97/)

JessicaSheng97@gmail.com

GIS Analyst | Geospatial Data Analysis | Environmental Modeler

WORK EXPERIENCE

Wuhan University

Geographical Analyst and Field Engineer Two Summer Internships

Xiaogan, China

May 2021 – June 2022

- Compiled 2D and 3D foundational data of the survey area, utilizing **ArcGIS** to establish a detailed **database** with layers representing roads and houses. Implemented functions for monitoring device site selection, optimal path navigation, and 3D visualization tour map navigation.
- Undertook terrain variation detection research by **comparing satellite and UAV images**, analysed 5-year changes in vegetation index, and interpreted results on vegetation coverage.
- Generated DSM, DEM, and DOM products based on the **drone images**. Executed point cloud analysis, performed 3D reconstruction with **AR. Explorer, PhotoScan, ContextCapture**. Orchestrated 3D building modelling and geographic entity collection using **DP_Mapper and DP_Modeler**.

EDUCATION

MSc – Environmental Monitoring, Modelling and Reconstruction
University of Manchester

Manchester, England

Sept 2023 – Sept 2024

Awards: Step up and Lead, Student Representative Recognition

BSc – Geodesy and Geomatic Engineering
Wuhan University (Top 8 in China, ranked 1st in the major)

Wuhan, China

Sept 2019 – June 2023

Awards: Outstanding Individual Achievement, Red Cross Society Letter of Appreciation

PROJECTS

Utilised **Flood Modeller** to conduct 1D and 2D hydraulic river modelling, analysing water availability and flood risks. Simulated flood events using ReFH and FEH models, optimising flood defence designs based on terrain complexity. Generated climate maps in **QGIS** using rainfall and evapotranspiration data to assess the impact of climate change on hydrological systems.

Conducted spatial analysis of tweet data across Greater Manchester using **Python**. Applied spatial ambiguity techniques and optimised data redistribution based on population density. Developed a weighted model to recalibrate tweet hotspots.

Queried and filtered data in **ArcMap** using **SQL**. Utilised the Average Nearest Neighbour method to analyse and **visualise** the spatial distribution patterns of dengue fever and residents. Identified high-risk areas and spatial hotspots of disease transmission through Incremental Spatial Autocorrelation.

Performed density analysis and Inverse Distance Weighting interpolation using **ArcGIS** on data from 50 air monitoring stations in Beijing. Produced a **thematic map of air pollution**, optimising raster rendering to display pollution levels across different regions.

Employed **ArcGIS** and **MATLAB** to integrate hydrological, meteorological, and environmental data, extracting spatiotemporal distribution maps of historical flood occurrences and conducting related **time-series analysis**. Compared **remote sensing** images of water bodies, focusing on **noise reduction and accuracy improvement**.

KEY SKILLS

- ✓ **Python, R, C++, QGIS, GNSS, Flood Modeller, ENVI, AutoCAD, Google Earth Engine**, Data Integration and Management
- ✓ Word, Excel, PowerPoint, Visio, Strong Communication, Focused and Dedicated, Attention to Detail
- ✓ **English** (mastery/C2), **Mandarin** (native/C2)
- ✓ Team player, excellent interpersonal and multicultural communication skills