Xinyi Wang

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Education

IGSNRR, University of Chinese Academy of Sciences — *Beijing, China*

Master in Geographical Information Science — *Sep. 2022-Jun. 2025 (expected)*

- **Advisors:** Prof. Fenzhen Su, Assoc. Prof. Fengqin Yan
- **GPA: 3.78/4.0** (no rank)

Zhengzhou University — *Zhengzhou, China*

Bachelor in Geographical Information Science — *Sep. 2018-Jun. 2022*

- **Advisor:** Dr. Xinjia Zhang
- **GPA: 3.74/4.0 (Rank: 2/58)**

Research Interests

- Regional ecological remote sensing monitoring and data assimilation using artificial intelligence.
- Simulation of carbon and water fluxes.
- Ecosystem Services and Changing landscapes.

Research Experiences

Inversion of Key Process Parameters in Regional Ecosystems — **Core member**

Led by Assoc. Prof. Fengqin Yan of IGSNRR, CAS. — Dec. 2023-Present

- Integrated existing cloud cover scalar and environmental remote sensing variables, using machine learning to improve the estimation of solar radiation intensity in traditional Light Use Efficiency (LUE) model.
- Designed a deep learning-based method for estimating Solar-Induced Fluorescence (SIF) data to better capture variable factor characteristics, while leveraging the high temporal resolution advantages of meteorological satellites to obtain a spatiotemporally continuous SIF dataset.
- Currently organizing experimental results and preparing manuscripts.

Optimization and Regulation of Sea-Land Scenarios in the Guangdong-Hong Kong-Macao Greater Bay Area under High-Intensity Perturbations — **Core member**

Led by Prof. Fenzhen Su of IGSNRR, CAS. — Jan. 2021-Jun. 2023

- Used the InVEST model and geographically weighted regression to analyze the impact of rapid urbanization on regional habitat, particularly focusing on spatial driving mechanisms, in a large coastal urban agglomeration in southern China.
- For a typical rapidly urbanizing coastal city in southern China, integrated the System Dynamics (SD) model and Future Land Use Simulation (FLUS) model to simulate land use patterns under different scenarios in both temporal and spatial dimensions, analyzing the dynamic changes in urban ecological security patterns.
- Based on the circuit theory model, developed a Matlab program to quantitatively analyze the effectiveness of conservation policies in maintaining urban ecological network stability under landscape fragmentation, assessing the potential impact of future urban development on landscape connectivity.
- Used bibliometric analysis to summarize approaches for spatial allocation in coastal zone areas, and analyzed the challenges of integrated management under climate change.

Intelligent Technology for Early Warning of Security Situations in Key Border and Sea Areas

Led by Assoc. Prof. Fengqin Yan of IGSNRR, CAS. — Dec. 2022-Present

- Collected global sea surface height, wave flux and meteorological data sets.
- Constructed regression models to analyze the drivers of suspended particulate matter in global offshore waters.

Publications

[1] **Xinyi Wang**, Fenzhen Su, Xuege Wang, Tingting Pan, Yikun Cui, Lyne Vincent, Fengqin Yan*. Adaptive Integrated Coastal Zone Planning: History, Challenges, Advances, and Perspectives. *Chinese Geographical Science*, 2024, 34(4): 599-617. doi: 10.1007/s11769-024-1440-y.

[2] **Xinyi Wang**, Fenzhen Su, Fengqin Yan*, Xinjia Zhang, Xuege Wang. Effects of Coastal Urbanization on Habitat Quality: A Case Study in Guangdong-Hong Kong-Macao Greater Bay Area. *Land*, 2023, 12(1), 34. doi: 10.3390/land12010034.

[3] **Xinyi Wang**, Fenzhen Su, Fengqin Yan*, Vincent Lyne, Yikun Cui, Bin He, Rong Fan. Future Challenges to Current Policies for Low-Carbon Urban Expansion. (*submitted to Sustainable Future*)

Working Experiences

Teaching Assistant   Zhengzhou University of Earth Science and Technology

Course: GIS Spatial Analysis   Sep. 2021-Jun. 2022

- Connected with the professor and organized the teaching material.
- Attended weekly TA classes and provided students with detailed feedback and guidance to help them understand complex concepts.

Director   Zhengzhou University of Earth Science and Technology

Academic Innovation Department of the Student Union   Sep. 2020-June. 2021

- Organized academic seminars and built an online platform for integrating academic resources.

Honors and Awards

- Meritorious Winner (Second Prize) in the Mathematical Contest in Modeling   2021
- First Prize in the Provincial Level of Chinese Mathematics Competition   2019
- Outstanding Graduate of Zhengzhou University   2022
- Merit Student of Zhengzhou University (Top 1%)   2018-2022
- First-Class Scholarship for Outstanding Students of Zhengzhou University (Top 5%, for 4 straight years)   2018-2022

Language and Skills

Language: IELTS: 7.0 (Reading:8.5, Writing:6.5).

Skills:

- **ArcGIS/QGIS:** Spatial data analysis and visualization.
- **Python/Matlab:** Data analysis, model construction and evaluation (deep learning).
- **ENVI/Google Earth Engine:** Processing and analysis of remote sensing images.
- **SPSS/Lingo/Origin/Vensim:** Data visualization, statistical analysis, and dynamics simulation.
- **MySQL:** Storage and management of spatial databases.

Other:

- **Association of Chartered Certified Accountants (ACCA) Qualification**   PASS 4/14