

Xinyi Wang

Institute of Geographic Sciences and Natural Resources Research, CAS, Beijing, China
Tel: +86-180-3757-2692 | Email: wangxinyi0028@igsnr.ac.cn | Website: <https://xinyiwan0616.github.io/>

Education

IGSNRR, University of Chinese Academy of Sciences (CAS)

Beijing, China

M.S. in Geographical Information Science

Sep. 2022-Jun. 2025 (expected)

- **Advisors:** Prof. Fenzhen Su, Assoc. Prof. Fengqin Yan
- **GPA:** 3.78/4.0

Zhengzhou University

Zhengzhou, China

B.S. in Geographical Information Science

Sep. 2018-Jun. 2022

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

Research Interests

- Mechanism of air-water-carbon interactions.
- Ecological remote sensing.
- Ecosystem resilience.
- Integration of artificial intelligence and ecosystem models.

Research Experience

Inversion of Key Process Parameters in Regional Ecosystems

Core member

Led by Assoc. Prof. Fengqin Yan of IGSNRR, CAS.

Dec. 2023-Present

- To analyze Solar-Induced Fluorescence (SIF) diurnal changes under drought events, we integrated geostationary satellite and Orbiting Carbon Observatory-3 SIF to reconstruct spatiotemporally continuous SIF datasets using deep learning networks.
- Improved estimation of vegetation productivity by incorporating effects of atmospheric pollution, cloud, and light saturation on solar radiation, using a hybrid framework of the Light Use Efficiency model and machine learning.

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

- Analyzed ecosystem's responses to disturbance (both natural and managed) and modeled future scenario changes.
- Modeled and assessed impacts of potential threats to the stability and resilience of regional ecological networks.

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 and analyzed global sea surface height, wave flux and meteorological datasets.
- Analyzed the drivers of suspended particulate matters in global offshore waters by machine learning models.

Publications

First authored paper

- [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. 2024. (*under review*)

Co-author paper

- [4] Jiaojie Zhang, Fengqin Yan, Fenzhen Su, Vincent Lyne, Xuege Wang, **Xinyi Wang**. Response of habitat quality to land use changes in The Johor River Estuary. *International Journal of Digital Earth*, 2024, 17(1). doi: 10.1080/17538947.2024.2390439.

In preparation

- [5] **Xinyi Wang**, Fenzhen Su, Fengqin Yan*, Vincent Lyne. Solar-induced chlorophyll fluorescence responses to drought events within short-term time scale.
- [6] **Xinyi Wang**, Fenzhen Su, Fengqin Yan*, Vincent Lyne. Improving Solar Radiation Estimation in Light Use Efficiency Model using Machine Learning to Predict Gross Primary Productivity.

Working Experiences

Teaching Assistant

Zhengzhou University of Earth Science and Technology

Course: *GIS Spatial Analysis*

Sep. 2021-Jun. 2022

- Organized the teaching material.
- Attended weekly classes and provided students with feedback and guidance to help them understand complex concepts.
- Provided personalized feedback on assignments and projects, and assisted in examination materials preparation and grading.

Director

Zhengzhou University of Earth Science and Technology

Academic Innovation Department of the Student Union

Sep. 2020-Jun. 2021

- Organized academic seminars and built an online platform for integrating academic resources.
- Spearheaded the organization of academic seminars that brought together students, faculty, and industry experts to discuss recent trends in geographical sciences.

Honors and Awards

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

Language and Skills

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

Skills:

- **Python/Matlab:** Data analysis, model construction and evaluation.
- **Deep learning:** TensorFlow, PyTorch.
- **QGIS:** Spatial data analysis and visualization.
- **ENVI/Google Earth Engine:** Processing and analysis of remote sensing images.
- **SPSS/Lingo/Origin/Vensim:** Data visualization, statistical analysis, and dynamics simulation.
- **MySQL:** Management of spatial databases.

Other:

- **Association of Chartered Certified Accountants (ACCA) Qualification:** Passed 4/14.