

Wenbo Lv

undergraduate

Curriculum Vitae

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Some stuff about me

- I am deeply interested in developing spatial analysis methods based on spatial relationships (such as spatial dependence, spatial heterogeneity, geographical similarity).
- I am proficient in R language data analysis, statistical modeling, and R package development.
- I am familiar with implementing computationally complex statistical algorithms using C++, and I can flexibly call upon torch.

Education

2021-2025 **Geographic Information Science** Shaanxi Normal University
Xi'an, Shaanxi

Honor

2023.12 **Grand Prize in the 12th National University Student GIS Application Skills Competition**
2023.11 **First Prize in the Second National University Student Ecological Environment Management Research Innovation Competition**
2023.12 **Second Prize of the 5th 'Guodi Cup' National College Student Natural Resource Science and Technology Competition, China Society of Natural Resources**
2021.10 **Outstanding Individual in Military Training Publicity for College Students, Shaanxi Normal University**
2024.06 **National University Student Innovation and Entrepreneurship Training Program Qualified Completion**

Developed Spatial Analysis Toolkit

Package	Description	Source Code	Language
gdverse	Family of geographical detector models in R	https://github.com/SpatLyu/gdverse	R, C++, Python
geocomplexity	Mitigate Spatial Bias through Geographical Complexity	https://github.com/SpatLyu/geocomplexity	C++, Python, C
spEcula	Spatial Prediction Methods In R	https://github.com/SpatLyu/spEcula	R
tidyrgeoda	A tidy interface for rgeoda	https://github.com/SpatLyu/tidyrgeoda	R
SpatBox	A Python Library For GeoSpatial Data Propressing and Modeling	https://github.com/SpatLyu/spatbox	Python
sptorch	Spatial neural network methods based on torch for R	https://github.com/SpatLyu/sptorch	R
sdsfun	Functions for Spatial Data Science	https://github.com/SpatLyu/sdsfun	R
geocn	Loads Spatial Data Sets of China	https://github.com/SpatLyu/geocn	R

In research

Leader **Geocomplexity mitigates spatial bias**
➤ Considering the Complexity of Spatial Data in Spatial Data Analysis to Improve Modeling Accuracy

Leader **sptorch - An integrated neural network based framework for spatial analysis**
➤ Design and implementation of a general-purpose GeoAI tool utilizing torch

Unpublished

- First Author **Distinguishing the impacts and gradient effects of climate change and human activities on vegetation cover in the Weihe River Basin , China** Under revision
- First Author **gdverse : An R package for spatial stratified heterogeneity modeling through geographical detectors** In writing

Publications

1. Song, Z., Liu, F., Lv, W., & Yan, J. (2023). Classification of urban agricultural functional regions and their carbon effects at the county level in the pearl river delta, china. *Agriculture*, 13(9). <https://doi.org/10.3390/agriculture13091734>
2. Song, Z., Liu, F., & Lv, W. (2023). *Spatiotemporal characteristics and optimization strategies of urban-rural development disparities in china's urban agglomerations(in chinese)* (pp. 1418–1429). People's Cities, Empowered by Planning - Proceedings of the 2023 China Urban Planning Annual Conference (14 Regional Planning; Urban Economy).