

Wenbo Lv

undergraduate

Curriculum Vitae

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📍 Xi'an, Shaanxi
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Some stuff about me

- I am deeply interested in developing new spatial analysis methods based on spatial relationships (such as spatial dependence, spatial heterogeneity, geographical similarity) to support urban sustainability and climate change mitigation.
- 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/ausgis/gdverse	R, C++, Python
geocomplexity	Mitigate Spatial Bias through Geographical Complexity	https://github.com/ausgis/geocomplexity	C++, Python, C
geosimilarity	Geographically Optimal Similarity	https://github.com/ausgis/geosimilarity	R
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
qgisprocess	R package to use QGIS processing algorithms	https://r-spatial.github.io/qgisprocess/	R
Rsagacmd	A package for linking R with the open-source SAGA-GIS	https://stevenpawley.github.io/Rsagacmd/	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	Extraction of Urban Spatial Boundaries in Xi'an City Using Deep Learning <ul style="list-style-type: none">➤ Combining advanced spatial sampling and unsupervised algorithms to automatically construct sample sets, and then using geographical neural networks weighted logistic regression to extract urban spatial boundaries
Leader	Geocomplexity mitigates spatial bias <ul style="list-style-type: none">➤ Considering the Complexity of Spatial Data in Spatial Data Analysis to Improve Modeling Accuracy

Unpublished

First Author	Distinguishing the impacts and gradient effects of climate change and human activities on vegetation cover in the Weihe River Basin , China <div>Under revision</div>
First Author	Spatial stratified heterogeneity analysis enabled by geographical detectors:the gdverse package <div>In writing</div>

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).