Wenbo Lv
undergraduate

Curriculum Vitae
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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** Xi'an, Shaanxi	Shaanxi Normal University

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**
              ➤ Combining advanced spatial sampling and unsupervised algorithms to auto-
                matically construct sample sets, and then using geographical neural networks
                weighted logistic regression to extract urban spatial boundaries

Leader   **Geocomplexity mitigates spatial bias**
              ➤ 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**
                                                                                                    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 car-
   bon 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 devel-
   opment 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).