

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 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**

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 Proprocessing and Modeling | https://github.com/SpatLyu/spatbox | Python |
| sptorch | Spatial neural network methods based on torch for R | https://github.com/SpatLyu/sptorch | 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Unpublished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 **gdverse : An R package for spatial stratified heterogeneity modeling through geographical detectors**
First Author **Distinguishing the impacts and gradient effects of climate change and human activities on vegetation cover in the Weihe River Basin , China**

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).