

# Juqing Liu

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## RESEARCH INTERESTS

- Geocomputation, Spatio-temporal data mining
- Discrete Global Grid System (DGGS), Spatial data modeling
- Spatial analysis, Urban intelligent decision support

## EDUCATION

Sep. 2018 – Present      China University of Mining and Technology-Beijing (CUMTB)  
**Ph.D. in Cartography and Geographical Information Engineering**

Sep. 2014 – Jun. 2018      Shandong University of Science and Technology (SDUST)  
**B.S. in Surveying and Mapping Engineering**

## RESEARCH PROJECTS

Sep. 2018 – Aug. 2019      “Design and development of land reserve intelligent decision-making platform using multi-source big data”  
Funded by the Ningbo Natural Resources and Planning Big Data Center, Ningbo City, China  
**My work:** Build land reserve analysis models and develop decision-making platform.

Sep. 2019 – Present      “Analyzing spatio-temporal patterns of spatial cognition and exploring its correlation factors based on taxi trajectory data”  
Funded by the National Natural Science Foundation of China (No. 41971355)  
**My work:** Build the evaluation index system of spatial cognition for taxi drivers to obtain spatial cognitive map and the underlying spatiotemporal features.

Sep. 2019 – Present      “Geographic grid division coding theory and analysis method for urban flow data”  
Funded by the Huawei Technology Co. Ltd, Beijing, China  
**My work:** Develop a series of indexes and calculation methods based on DGGS to accelerate the query, mining and applications of large-scale trajectory data.

## PUBLICATIONS

### Journal Papers

2019      Li J., **Liu J.\***, You L., et al. (2019). Intelligent decision system and application of land reserve supported by spatiotemporal big data[J]. *China Land Science*, 33(09):111-120.

2020      Li J., **Liu J.\***, Zhao X., et al. (2020). Trajectory data management and analysis framework based on geographical grid model: method and application[J]. *Geomatics and Information Science of Wuhan University*, accepted.

2020      Li J., **Liu J.\***, You L., et al. (2020). Intelligent decision model set of land reserve based on multi-source big data[J]. *Journal of Geo-information Science*, accepted.

2021      Li J., Zhu Y., **Liu J.**, Zhang C.\*, et al. (2021). Parcel-Level evaluation of urban land use efficiency based on multisource spatio-temporal data—a case study of

- Ningbo city, China. *Transactions in GIS*, accepted.
- 2021 Li J.\*, **Liu J.**, Qiao L., et al. (2021). DegSIM: A database-embedded and grid-based method of top-K trajectory similarity query on a large-scale dataset[J], under review.
- 2021 Li J., **Liu J.\***, Qiao L., et al. (2021). gstSIM: a high-performance similarity analysis method of spatiotemporal trajectory based on grid model representation [J], under review.

### Conference Proceedings

- 2019 Zheng, Y., **Liu, J.**, Li, J.\*, Xu, Y., Huang, Q., 2019, October. Design of fine management system for civil aviation airspace resources based on spatiotemporal grid model. In 2019 IEEE 1st International Conference on Civil Aviation Safety and Information Technology (ICCASIT) (pp. 547-551).
- 2020 Li, J., **Liu, J.\***, Mei, X., Sun, W., Huang, Q., Zhang, Y., 2020. Design and implementation of trajectory data management and analysis technology framework based on spatiotemporal grid model. *The International Archives of Photogrammetry, Remote Sensing and Spatial Information Sciences*, 43, pp.471-476.

### Oral and poster presentation

- Jul. 2019 **Liu, J.**, 2019. Population spatialization and verification based on “LJ1-01” nighttime light remote sensing images. The 10th Forum on Spatially Integrated Humanities and Social Sciences, **oral presentation.**
- Oct. 2019 **Liu, J.**, 2019. Intelligent decision system and application of land reserve supported by spatiotemporal big data. 2019 National Academic Forum for Doctoral Students (Surveying and Mapping Science and Technology), **poster presentation.**
- Aug. 2020 **Liu, J.**, 2020. Design and implementation of trajectory data management and analysis technology framework based on spatiotemporal grid model. XXIV ISPRS Congress, International Society for Photogrammetry and Remote Sensing. **oral presentation.** <https://www.youtube.com/watch?v=MA6iqxQKNvM>

### ACADEMIC SKILLS

- **Languages:** Chinese (native), English (foreign)
- **Programming:** Python, C#, C++, R, Matlab
- **Database:** MySQL, HBase, MongoDB
- **Spatial Analysis and Cartography:** ArcGIS, ArcPy, QGIS
- **Research tools:** EndNote, Origin, 3d Max, Visio, GitHub

### HONORS AND AWARDS

- Scholarship of SDUST, 2014-2018
  - “Three Good” Student, SDUST, 2014-2018
  - National Inspirational Scholarship, total 6000 RMB, 2017
  - "Outstanding Class" award winner of SDUST in 2017 (as the monitor)
  - Excellent graduates, Shandong province, China, 2018
  - Scholarship of CUMTB, 2019-2020
  - Excellent poster award of the 2019 National Academic Forum for Doctoral Students, 2019
  - The Fundamental Research Funds for the Central Universities (Postgraduate research and innovation project), No. 2020YJSDC14, total 5000 RMB, 2020
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