

# CHENYU FANG

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<https://youngercy.github.io/Chenyu-Fang/>

## EDUCATION & WORKING EXPERIENCE

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Ph.D., Big Geospatial Data Management, <b>Technical University of Munich</b>	06/2021 – 06/2024(Expected)
Visiting Scholar, Lab of Interdisciplinary Spatial Analysis, <b>Cambridge University</b>	05/2023 – 12/2024
Data Analyst, <b>China Academic Urban Planning and Design</b>	07/2018 – 01/2021
M.S., Physical Geography, <b>Peking University, China</b>	09/2015 – 06/2018
B.A., Geomatics (Remote Sensing), <b>Wuhan University</b>	09/2011 – 06/2015

## RESEARCH INTERESTS

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Computational Science, GeoAI, Urban Informatics, Complex Network, LLM, Social Sensing

## PUBLICATIONS

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### Peer-reviewed Papers

1. Liu, Z., **Fang, C.**, Li, H., Wu, J., Zhou, L., & Werner, M. (2023). Efficiency and equality of the multimodal travel between public transit and bike-sharing accounting for multiscale. *Sustainable Cities and Society*, 105096. <https://doi.org/10.1016/j.scs.2023.105096>
2. Gao, F., Du, Z. \*, **Fang, C.**, Zhou, L. Werner, M. (2023). A spatial-temporal cognitive framework for individual route choice in outdoor evacuation scenario. *ISPRS International Journal of Geo-Information*, 11, 605. <https://doi.org/10.3390/ijgi11120605>
3. Zhou, L., de Vries, W. T., Panman, A., Gao, F., & **Fang, C.** (2023). Evaluating Collective Action for Effective Land Policy Reform in Developing Country Contexts: The Construction and Validation of Dimensions and Indicators. *Land*, 12(7), 1401. <https://doi.org/10.3390/land12071401>
4. Zhang, W., **Fang, C.**, Zhou, L., & Zhu, J. (2020). Measuring megaregional structure in the Pearl River Delta by mobile phone signaling data: A complex network approach. *Cities*, 104, 102809. <https://doi.org/10.1016/j.cities.2020.102809>
5. Zhou, L., Zhang, W.\*, **Fang, C.**, Sun, H., & Lin, J. (2020). Actors and network in the marketization of rural collectively-owned commercial construction land (RCOCCCL) in China: A pilot case of Langfa, Beijing. *Land Use Policy*, 99, 104990. <https://doi.org/10.1016/j.landusepol.2020.104990>
6. **Fang, C.**, & Zhao, S\*. (2018). A comparative study of spatiotemporal patterns of urban expansion in six major

cities of the Yangtze River Delta from 1980 to 2015. *Ecosystem health and sustainability*, 4(4), 95-114.

<https://doi.org/10.1080/20964129.2018.1469960>

### **Papers (to be) Submitted**

7. **Fang, C.**, Gu., X., Zhou, L., Liu, X., Werner, M. Exploratory Analysis of Overlapping Communities and Its Impact Factors for Megaregion Cities in South China with Geospatial Big Data. (**Under Second-Round Review:** Computers, Environment, Urban and System).
8. Zhang, W., Geng, Y., Zhou, L., **Fang, C.\*** Associations between online and offline shopping and travel behaviors before and after the outbreak of COVID-19. (**Under Second-Round Review:** *Transportation Research Part A*)
9. Zhang, W., Li, Y., Zhou, L., **Fang, C.\*** Quasi-experimental analysis of COVID-19 impacts on older adults' travel behavior: Implications for age-friendly neighborhood planning. (**Under Second-Round Review:** *Journal of Planning Education and Research*).
10. Zhou, L., de Vries, W. T., Gao, F., & **Fang, C.\*** *The Role of Voluntary Collective Action in China's Rural Land Development*. (Under second-round review, *Habitat International*).
11. **Fang, C.\***, Zhou, L., Liu, S., Chen, R., Liu, X., Werner, M. HDCBC: A Robust Clustering Algorithm for data with Noise, Heterogeneous Densities, and Weak Connectivity. (**Under Review:** *International Journal of Geographical Information Science*).
12. Feng, Y., **Fang, C.**, Jia, X., Song, P., Zhou, L., Xu, X., Wang, K., He, R., Guo, N., Tian, G., Ge, S.\* Valuing the carbon neutrality potential of the city itself: a study of greenspace at a city-block-scale in Xi'an, China. (**Under Review:** *Environmental Research*).
13. Zhu, H., Zhang, W.\*, Huang, N., Li, B., Niu, L., Fan, Z., **Fang C.**, Liu, X. PlanGPT: Enhancing Urban Planning with Tailored Language Model and Efficient Retrieval. (Submitted to Knowledge Discovery and Data Mining (KDD Conference 2024), <https://arxiv.org/abs/2402.19273>).
14. **Fang, C.\***, Chen, R., Zhou, L., Liu, X., Werner, M. Comparing Variant Megaregional Complex Networks in the China Great Bay Area- A Multi-Scale Analysis Based on Mobile Phone Signaling Data. (**Rejected and Resubmit:** *Cities*).
15. **Fang, C.\***, Zhou, L., Liu, X., Werner, M. Data-Driven Cities: A Combination of Clustering and Feature Engineering on Top of OpenStreetMap point data. (**Revised:** Plan to submit to *International Journal of Geographical Information Science*).
16. **Fang, C.**, Liu, S., Zhou, L.\*, Silva, E. Measuring Accessibility and Equity of Residents' Park Green Space under Residential Space Differentiation. (**Under writing**, Landscape and Urban Planning).
17. **Fang, C.\***, Liu, S., Zhou, L., Liu, X., Werner, M. Harmonizing Space and Attributes: A New Algorithm for Data Clustering. (**Under writing:** Plan to submit to *International Journal of Geographical Information Science*).

## SELECTED SERVICE AND PROJECT EXPERIENCE

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### Peer Review Services

1. Peer Reviewer of *Scientific Reports* 04.2024-
2. Peer Reviewer of *The Singapore Economic Review* 12.2023-
3. Peer Reviewer of *Scientific Reports* 12.2023-
4. Peer Reviewer of *IDAACS* 07.2023-

### Project Experience

- **PlanGPT (Co-Founder)** 07/2023 – Present  
a professional large language model(LLM) custom-built for urban planning (<https://arxiv.org/abs/2402.19273>), aiming to:
  - **Specialize in Urban Planning Tasks:** Tailored for generating planning texts, information retrieval, and document evaluation specific to city planning.
  - **Boost Efficiency for Planners:** Designed to enhance the work efficiency of urban planning professionals by addressing their unique challenges.
  - **Leverage Industry Collaboration:** Developed in partnership with the China Urban Planning & Design, our co-planner project integrates industry-specific insights and technologies, culminating in a successful venture securing 600,000 RMB in funding.
- **Digital Bay Area Platform Construction (Participant)** 09/2018-09/2020  
Digital Bay Area Platform for the China Academy of Urban Planning and Design, focusing on the digital planning and visualization of the Greater Bay Area. This platform offers real-time, dynamic planning support to urban planners:
  - **Comprehensive Integration:** The digital Bay Area we constructed includes vital aspects such as population, business, culture, and economy, offering a holistic view of the area's dynamics.
  - **Dynamic Planning Support:** work for more than 400 planners; more than 30 commercial projects.
  - **Report by several major news:** [NetEase](#), [Souhu](#), [Zhihu](#), [Planning Cloud](#) and so on.
- **Guangdong Province's Inaugural Territorial Space Planning (Participant)** 01/2019-10/2020  
It is a key initiative aimed at optimizing land use, protecting natural resources, and fostering sustainable development through strategic regional planning and advanced spatial analysis technologies My main responsibilities included two critical components:
  - **One Map System:** Developing a comprehensive 'One Map' system for land and space management, which integrates various geographic and administrative data into a single, accessible mapping platform.
  - **Spatial Analysis:** Providing technical support for spatial analysis, utilizing advanced analytical methods and technologies to assess and optimize the use of territorial space across the province.

## SELECTED AWARDS AND HONORS

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National Encouragement Scholarship (2%)

Postgraduate Scholarship of Peking University

First Class Scholarship for Merit Student

Outstanding graduates Of Wuhan University

## **PROFESSIONAL SKILLS**

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### **Programming Language**

**Python:** Advanced proficiency in data analysis, data mining and machine learning. Experienced in using libraries such as Pandas, scikit-learn, PyTorch.

**R:** Skilled in statistical analysis and data visualization.

**MATLAB:** Experienced in numerical computing, simulations, and algorithm development for engineering and spatial data analysis.

### **Data Science and Machine Learning**

**TensorFlow & PyTorch:** Proficient in building and training deep learning models for Image recognition, Natural language processing, and Graph Neural Network.

**Apache Spark:** Skilled in handling big data processing and analysis.

### **Remote Sensing and Geospatial Analysis**

**ArcGIS & QGIS:** Expert in geographic information systems (GIS) for spatial analysis, data management and ArcGIS re-development.

**Google Earth Engine:** Experienced in leveraging cloud-based platform for large-scale environmental data analysis and visualization.