CHENYU FANG

Arcisstraße 21, 80333, Munich, Tel.: +49 (0)17644543864, Email: chenyu.fang@tum.de
https://youngercy.github.io/Chenyu-Fang/

EDUCATION & WORKING EXPERIENCE

Ph.D., Big Geospatial Data Management, **Technical University of Munich** *06/2021 – 06/2024(Expected)*

Visiting Scholar, Lab of Interdisciplinary Spatial Analysis**, Cambridge University** *05/2023 – 12/2024*

Data Analyst, **China Academic Urban Planning and Design** *07/2018 – 01/2021*

M.S., Physical Geography, **Peking University, China** *09/2015 – 06/2018*

B.A., Geomatics (Remote Sensing), **Wuhan University** *09/2011 – 06/2015*

RESEARCH INTERESTS

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

PUBLICATIONS

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 (RCOCCL) 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

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

National Encouragement Scholarship (2%)

Postgraduate Scholarship of Peking University

First Class Scholarship for Merit Student

Outstanding graduates Of Wuhan University

PROFESSIONAL SKILLS

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 Leaning

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.