

# Xiaofan Liang

Ph.D.

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## Education

- Ph.D. City and Regional Planning, Friendly Cities Lab, **Georgia Institute of Technology** 2019 – 2023.  
*Major Advisor: Clio Andris. Minor Advisor: Chris Le Dantec.*
- Master of City and Regional Planning, **Georgia Institute of Technology** 2019 - 2023.
- B.S. Computational Science, **Minerva University** 2015-2019.
- B.A. Sociology, **University of California – Berkeley** 2013-2015.

## Research Interests

- Spatial and social networks
- Urban analytics (GIS, machine learning, agent-based modeling)
- Digital civics, critical data, and participatory methods for spatial planning

## Awards & Honors

- The ACRP (Airport Cooperative Research Program) Graduate Research Award (\$12,000), 2022
- Georgia Tech Data Science Research Scholarship, The Institute of Data Engineering and Science, 2020
- 1<sup>st</sup> place in Georgia Tech Transportation and GIS Hackathon, 2019

## Experience

### Research

- **Georgia Tech – Friendly Cities Lab** 08.2019- now  
*Graduate Research Assistant*  
Atlanta, GA  
See my work on <https://www.xiaofanliang.com/>
- **National University of Singapore – Urban Analytics Lab** 05.2022 – 07.2022  
*Visiting Scholar*  
Singapore  
Work with prof. Filip Biljecki on mining spatial and social infrastructure from OpenStreetMap data

- **Smart Communities Corps Program** 05.2021 - 08.2021  
*Graduate Research Assistant* Savannah, GA  
Worked with the City of Savannah to develop machine learning models to identify vacant, abandoned, and disinvested properties with community engagement.
- **Chinese Academy of Science** 07.2019 - 08.2019  
*Research Assistant* Beijing, China  
Visualized capital investment networks in China. Advised by Dr. Jianghao Wang.
- **Santa Fe Institute** 06.2017 - 12.2018  
*Research Experience for Undergraduates* Santa Fe, NM  
Researched scaling properties of Universities in U.S. through power law statistics.
- **Icosystem** 05.2016 - 07.2016  
*Research Intern* Remote  
Built agent-based models in NetLogo to run simulations and drove understanding of gender inequality in business organizations. Findings featured in Forbes.

### Industry

- **Youth Global Network – Project C** 01.2018 – 05.2018  
*Software Development Intern* Hong Kong, China  
Supported the building of a ReactJS new frontend of MIT AppInventor and taught programming classes to underserved youth in Hong Kong and Shenzhen.
- **1kg Box** 05.2014 – 08.2014  
*Product Design Assistant* Guangzhou, China  
Designed course materials for rural teachers through human centered design process which includes interviews for feedbacks, organized workshops, and rapid prototyping.

### Manuscript Publication

- **Xiaofan Liang**, Seolha Lee, Hanzhou Chen, Benjamin de la Pena, Clio Andris (2022). Characteristics of Jetters and Little Boxes: An Extensibility Study Using the Neighborhood Connectivity Survey. *Social Inclusion* 10(3).  
<https://doi.org/10.17645/si.v10i3.5366>
- **Xiaofan Liang**, Yuhao Kang (2021). A Review of Spatial Network Insights and Methods in the Context of Planning: Applications, Challenges, and Opportunities (Book Chapter). *Urban Informatics and Future Cities*. Springer Nature. Eds. Chris Pettit, Robert Goodspeed, Aija Staffans. [https://doi.org/10.1007/978-3-030-76059-5\\_5](https://doi.org/10.1007/978-3-030-76059-5_5)
- **Xiaofan Liang**, Clio Andris (2021). Measuring McCities: Landscapes of Chain and Independent Restaurants in the United States. *Environment and Planning B: Urban Analytics and City Science*, 49(2), 585-602.  
<https://doi.org/10.1177/23998083211014896>

- Ryan Taylor\*, **Xiaofan Liang\***, Chris Kempes, Marion Dumas, Geoffrey West, Manfred Laubichler (2021). Systematic shifts in scaling behavior based on organizational strategy in universities. *PLOS one*, 16(10), e0254582. (\*equal contributions) <https://doi.org/10.1371/journal.pone.0254582>

## Conference Proceedings

- Gaikwad, Snehal Kumar, Shankar Iyer, Dalton Lunga, Takahiro Yabe, **Xiaofan Liang**, Bhavani Ananthabhotla, Nikhil Behari, Sreelekha Guggilam, Guanghua Chi (2022). Data-driven Humanitarian Mapping and Policymaking: Toward Planetary-Scale Resilience, Equity, and Sustainability. In *Proceedings of the 28<sup>th</sup> ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD '22)*, August 14-18, 2022, Washington, DC, USA, 4872-4873. <https://doi.org/10.1145/3534678.3542918>

## Under Review

- **Xiaofan Liang**, Clio Andris, Brian Brainerd. *Detecting Vacant, Abandoned, and Disinvested Properties in Savannah using Human-in-the-Loop Machine Learning*.
- **Xiaofan Liang**, Joshua Baker, Daniel DellaPosta, Clio Andris. *Is Your Neighbor Your Friend? Scan Methods for Spatial Social Network (SSN) Hotspot Detection*.
- Zhifeng Cheng, Jianghao Wang, **Xiaofan Liang**, Yong Ge, Luoyi Fu, Xinbin Wang, Chenghu Zhou. *The heterogeneous impacts of COVID-19 pandemic on global scientific collaboration*.
- Dipto Sarkar, Jan F. Gogarten, **Xiaofan Liang**, Clio Andris, Emmanuel Opito, Kim Valenta, Urs Kalbitzer, Raja Sengupta, and Colin A. Chapma. *Impacts of COVID-19 on Biodiversity Conservation and Community Networks at Kibale National Park, Uganda*.

## Work in Progress

- **Xiaofan Liang**, Clio Andris. *Capturing the Social Impact of Demolishing a Historic Street for a New Subway Station: Evidence from a Participatory GIS Survey in Guangzhou, China*.
- **Xiaofan Liang**, Clio Andris. *An R tutorial for integrated spatial social network analysis*.
- **Xiaofan Liang**, Jianghao Wang, Cesar Hidalgo, Pierre Balland, Siqi Zheng. *Uncoupling connectivity and population at explaining city scaling*.
- **Xiaofan Liang**, Perry Yang. *Toward an inclusive Aerotropolis: a critical connectivity analysis around Atlanta Airport*.
- **Xiaofan Liang**, Filip Biljecki, and Clio Andris. *A global assessment of social infrastructure using OpenStreetMap data*.

## Presentations

- “Capturing the Social Impact of Demolishing a Historic Street for a New Subway Station: Evidence from a Participatory GIS Survey in Guangzhou, China”. *Annual Conference of Association of Collegiate Schools of Planning (ACSP)*. In-person. Toronto. November 3rd, 2022.
- “Detecting Vacant, Abandoned, and Disinvested (VAD) Properties in Savannah, Georgia using Human-in-the-loop Machine Learning”. *Invited talk at Dr. Andrew L. Tan Data Science Institute, De La Salle University (Philippines)*. Virtual. October 12th, 2022.
- “Spatial Social Network (SSN) Hot Spot Detection: Scan Methods for Non-Planar Networks”. *The Annual Conference of American Association of Geographers (AAG)*. Virtual February 26, 2022.
- “Detecting Vacant, Abandoned, and Disinvested (VAD) Properties in Savannah, Georgia using Human-in-the-loop Machine Learning”. *Annual Conference of Association of Collegiate Schools of Planning (ACSP)*. Virtual. October 23<sup>rd</sup>, 2021.
- “A Review of Spatial Network Insights and Methods in the Context of Planning: Applications, Challenges, and Opportunities”. *The 17<sup>th</sup> International Conference on CUPUM – Computational Urban Planning and Urban Management*. Virtual. June 10<sup>th</sup>, 2021.
- “Patterns of Chain and Independent Restaurants in U.S. Cities”. GaTech College of Design Virtual Research Symposium on Point of Interest. Virtual. April 30<sup>th</sup>, 2021.
- “Demographic and Behavioral Characteristics of Individuals with Global, Local, or Glocal Connectivity Patterns”. *North American Regional Science Conference (NARSC)*. Virtual. November 10<sup>th</sup>, 2020.
- “A R Online Tutorial for Visualizing Spatial Social Networks”. MoVis: Information Visualization of Geospatial Networks, Flows, and Movements Workshop at *IEEE VIS*. Virtual. October 26<sup>th</sup>, 2020.
- “Explaining Urban Scaling, Variances, and Economic Structure with Multiplex Networks in China”. *Invited Talk at MIT Sustainable Urbanization Lab Internal Seminar*. Virtual. October 7<sup>th</sup>, 2020.
- “Measuring McCities: Quantifying ‘Chainness’ of Foodscape in the United States”. *The Annual Conference of American Association of Geographers*. Virtual. April 12<sup>th</sup>, 2020.

## Mentoring

### Master Students

- Lu Chen (City and Regional Planning Master student)

### Undergraduate

- Brandon Noll (Undergrad majored in Computer Science)

## Teaching

- Graduate Teaching Assistant, CP6025 Advanced Planning Methods (Stats & R).  
*@Georgia Institute of Technology - Fall 2022*
- Guest Lecturer, Agent-based Modeling and Data Preparation. CP8873 Smart City Workshop – Future Airport City Systems Design.  
*@Georgia Institute of Technology - Fall 2022*
- Guest Lecturer, Geographically Weighted Regression, CP6521 Advanced GIS.  
*@Georgia Institute of Technology - Spring 2021*
- Instructor, Computational Thinking through MIT App Inventor.  
*@Shenzhen Longgang Technical School – Spring 2018*
- Instructor, Introduction to Python.  
*@United World College (UWC) Hong Kong – Spring 2018*

## Professional Activities and Services

### Reviews

- Reviewed for Environmental Planning B: Urban Analytics and City Science, 2021; 2022.
- Reviewed for GIScience & Remote Sensing, 2021.
- Reviewed for Computational Urban Science, 2021; 2022.
- Reviewed for SAGE Open, 2021.

### Services

- Founder of [Miaoqianzhi 'jie' Research Group](#), an activist research team based in Guangzhou that promotes public discourse and conducts quantitative and qualitative research around Miaoqianzhi 'jie' (a historic street that is planned to be demolished to build an additional metro station). Oct 2020 – Now.
- Student Volunteer for the inaugural ACSP International Students Workshop at the 2022 ACSP Conference. Aug 2022 – Nov 2022.
- Member of the organizing team at the 3<sup>rd</sup> ACM KDD workshop: Data-driven Humanitarian Mapping Workshop: Harnessing Human-Machine Intelligence for High-Stake Public Policy and Resilience Planning. Aug 2022.
- Session Chair at 2022 Annual Conference of American Geographers (AAG): Advancing Spatial and Social Network in GIS. Feb 2022.
- Session Co-organizer at 2022 Annual Conference of American Geographers (AAG): Perspectives and Tensions in Urban Redevelopment. Feb 2022.
- Student organizer of CPGIS (Chinese Professional in Geographic Information Science) sponsored AAG 2022 Chinese GISer socialization event. Feb 2022.

- Digital Participation & Diversity Chair at the 2<sup>nd</sup> ACM KDD workshop: Data-driven Humanitarian Mapping Workshop: Harnessing Human-Machine Intelligence for High-Stake Public Policy and Resilience Planning. Aug 2021.
- Student Representative at the Georgia Tech School of City and Regional Planning Chair Search Committee. Oct 2020 – Feb 2021.
- Student Ambassador for newly admitted students at the Georgia Tech School of City and Regional Planning. Mar 2021 - Apr 2021.
- Student Volunteer at the 1<sup>st</sup> ACM KDD workshop: Data-driven Humanitarian Mapping Workshop: Harnessing Data and Human-Machine Intelligence for Actionable Policy Decisions. Aug 2020.