Liu, Yunzhe

PhD in Geographic Data Science; Postdoctoral Research Associate at Imperial College London.
Date of Bith: 10/02/1994
Email: yunzhe.liu@ic.ac.uk
Mobile: +447477599367
ORCID: https://orcid.org/0000-0002-7189-3323
LinkedIn: https://www.linkedin.com/in/yunzhe-liu/
WeChat: Yunzhe_Liu

Educational Background

University of Liverpool
10/2016-09/2021

Degree: Doctor of Philosophy; Geographic Data Science
Supervisors: Prof. Alex Singleton, Prof. Daniel Arribas-bel
Department: Geography and Planning
Associate Laboratory: Geographic Data Science Lab
PhD Thesis: The Dynamic and Multidimensional Context of Urban Mobility

University College London
09/2015-09/2016

Awarded Degree: Master of Sciences; Distinction (1st place)
Major: Geographic Information Sciences
Disseration Supervisor: Prof. Tao Cheng
Department: Civil, Environment & Geomatic Engineering; Geography
Associate Laboratory: SpaceTimeLab

University of Liverpool
09/2012-06/2015

Awarded Degree: Bachelor of Art; Class 2:1
Major: Environment & Planning
Dissertation Supervisor: Prof. Alex Singleton
Department: Geography and Planning

Teaching / Research Experience

Imperial College London
11/2022- To Date

Position: Postdoctoral Research Associate (full-time)
Projects: NetZero; Socioeconomic Deprivation (led by Dr. Daniela Fecht)
Department: MRC Centre for Environment & Health, School of Public Health

University of Oxford
10/2021-07/2022

Position: Geospatial Statistican; Postdoctoral Research Associate (full-time)
Projects: Informal Cities; Deep Medicine; PEAK Urban (led by Prof. Kazem Rahimi)
Department: Nuffield Department of Women's & Reproductive Health, Oxford Martin School

University College London
10/2020-10/2021

Position: Postdoctoral Research Associate (full-time)
Projects: Virus Watch (COVID-19); GPS/human mobility analysis; PhD & MSc co-supervision
Led by: Prof. Tao Cheng
Department: SpaceTimeLab, Civil, Environmental and Geomatic Engineering

University of Liverpool
09/2020-12/2020

Position: Research Assistant (part-time)
Projects: Housing price and market analysis (led by Prof. Alex Lord)
Department: Geography and Planning

University of Liverpool
10/2016-06/2020

Position: Class Demonstrator / Teaching Assistant (part-time)
Major Duties: Delivering lectures and providing technical suppport for BA/BSc & MSc students
Selected Courses: Geographic Data Science; GIS and Study Skills; Statistics in Social Science
Department: Geography and Planning

University of Liverpool 05/2018-08/2018

Position: Research Assistant (part-time)
Projects: Police.uk; Deprivation and Crime project (led by Dr Carly Lightowlers).
Department: Sociology, Social Policy and Criminology

University of Birmingham 01/2018-12/2019

Position: Research Assistant (part-time)
Projects: 'Talent Flow' - Social mobility project (led by Dr Max Nathan)
Department: Birmingham Business School & Department of Economics

University of Sheffield 05/2017-07/2017

Position: Research Assistant (part-time)
Projects: Neighbourhood online geocoding (Hebei, China) (Led by Prof. Guanpeng Dong)
Department: Geography & Urban Studies and Planning

Academic Publications

Published Articles:

Liu, Y.*, Chen, M.*, Wang, M., Huang, J., Thomas, F., Rahimi, K., and Mamouei, M. (2023). An interpretable machine learning framework for measuring urban perceptions from panoramic street view images (SVIs). *iScience*. (**SCIE, Q1, IF: 6.107**)

Cheng, T.*, Chen, T.*, **Liu, Y.**, Aldridge, R., Nguyen, V., Hayward, A.,and Michie, S. (2022). Human mobility variations in response to restriction policies during the COVID-19 pandemic: An analysis from the Virus Watch community cohort in England, UK. *Frontiers in Public Health,* 10(99521) (**SCIE, Q1, IF: 6.461**)

Chen, M., **Liu, Y.***, Arribas-bel, D., Singleton, A. (2022). Assessing the value of user-generated images of urban surroundings for house price estimation. *Landscape and Urban Planning*, 226(104486). (**SSCI, Q1, IF: 8.119**)

Liu, Y., Singleton, A., Arribas-bel, D., and Chen, M. (2021). Identifying and understanding road-constrained areas of interest (AOIs) through spatiotemporal taxi GPS data: A case study in New York City. *Computers, Environment and Urban Systems*, 86(101592). (**SSCI, Q1, IF: 6.454**)

Liu, Y., Singleton, A., Arribas-bel, D. (2020). Considering context and dynamics: A classification of transit-orientated development for New York City, *Journal of Transport Geography.* 85(102711). (**SSCI, Q1, IF: 5.899**)

Liu, Y., Singleton, A., Arribas-bel, D. (2019). A principal component analysis (PCA)-based framework for automated variable selection in geodemographic classification, *Geo-spatial Information Science.* 22(4), 251-264. (**SCIE, Q2, IF: 4.278**)

Liu, Y. and Cheng, T. (2020). Understanding public transit patterns with open geodemographics to facilitate public transport planning. *Transportmetrica A: Transport Science*, 16(1), 76-103. (**SCIE, Q3, IF: 3.277**)

Cheng, T., Lu, T., **Liu, Y.**, Gao, X., and Zhang, X. (2021). Revealing Spatiotemporal Transmission Patterns and Stages of COVID-19 in China using Patients Trajectory Data. *Computational Urban Science,* 1(1), 1-19.

Hayward, A., et al. (2021). Risk factors, symptom reporting, healthcare-seeking behaviour and adherence to public health guidance: Protocol for Virus Watch, a prospective community cohort study. *BMJ Open*, 11(6). (**SCIE, Q2, IF: 3.007**)

Cheng, T., Zhong, X., **Liu, Y.**, Zhang, Y., and Dong, G. (2021). Dynamic Spreading of COVID-19 Versus Community Mobility in Regions of England. In: Shaw SL., Sui D. (eds) *Mapping COVID-19 in Space and Time. Human Dynamics in Smart Cities*. Springer, Cham. 233-251.

Cheng, T., Liu, J., **Liu, Y.**, Gao, X., and Zhang, X. (2022). Measures to Prevent Nosocomial Transmissions of COVID-19 based on Interpersonal Contact Data. *Primary Health Care Research & Development. 23* (**SCIE, Q4, IF: 1.792**)

Fisher, T., Gibson, H., **Liu, Y.**, et al., (2022). Uncertainty-Aware Interpretable Deep Learning for Slum Mapping and Monitoring. *Remote Sensing. 14(13).* (**SCIE, Q1, IF: 5.349**)

Byrne, T., et al., (2021). Trends, patterns and psychological influences on COVID-19 vaccination intention: Findings from a large prospective community cohort study in England and Wales (Virus Watch). *Vaccine.* 39(48). 7108-7116. (**SCIE, Q3, IF: 4.169**)

Ongoing / Under Review Articles:

Wang, M., Haworth, J., Chen, H., **Liu, Y.**, Shi, Z. (accepted; in press). Measuring spatio-temporal dynamics using panoptic segmentation of crowd-sourced street-level imagery: A case study of visual walkability. *International Journal of Geographical Information Science.*

Nguyen, V., **Liu, Y.**, et al. (accepted; in press). Changes in mobility pre and post first SARS-CoV-2 vaccination: findings from a prospective community cohort study including GPS movement tracking in England and Wales (Virus Watch). *JMIR Public Health and Surveillance.*

Liu, Y., Chen, M., Wang, M. (under review). Profiling and Contextualising the Dynamics of Neighbourhood-level Mobility Inequity amid COVID-19 Pandemic: a Case Study in New York City. *Journal of Transport Geography*

Liu, Y., and Fecht, D.(ongoing). Contextualising the Dynamic Inequality of Air Pollution: a Case Study in Greater London. *Health & Place.*

Cheng, T., **Liu, Y.**, Han, B. (under review). Public Attitudes Towards Covid-19 Vaccination and its Uptake. *Frontiers in Public Health*

Conference Presentations/Papers:

Liu, Y. and Cheng, T. (2017) Characterising Passengers' Travel Patterns in London Public Transit. GISRUK 2017. Manchester.

Liu, Y., Singleton, A., Arribas-bel, D. (2019) Understanding the Dynamics and Context of New York Transportation Hubs. GISRUK 2019. Newcastle.

Liu, Y., Singleton, A., Arribas-Bel, D. (2020) Supplementing Context-based Subway Station Area Transit-Oriented Development (TOD) Topology by Using Dynamic Open Data, A Case Study of the New York City. AAG. Washington.

Liu, Y., Chen, M., Singleton, A., Arribas-Bel, D. (2021) Profiling the Dynamic Pattern of Bike-sharing Stations: a case study of Citi Bike in New York City. GISRUK 2021. Cardiff. (***awarded as CASA Best Paper**)

Liu, Y., Chen, M. (2022) Characterising COVID-19 Morbidity Dynamic Pattern across Neighbourhoods in New York City. GISRUK 2022. Liverpool.

Certificates & Awards

CASA Best Paper on Spatial Analysis, *GISRUK 2021*, Cardiff. 04/2021

First Place. Analytics Urban Data Dive, *Alan Turing Institute*, London. 08/2017

Hart Prize. Rank 1st in MSc study, *University College London*, London. 09/2016

Esri ArcGIS Certification. ArcMap training course, *Chinese Academy of Science*, Suzhou. 08/2015

University Scholarship. Graduation with overall 70%+, *Liverpool International College*, Liverpool. 07/2012

Technical Skills

- Programming Languages: R; Python; SQL
- Geographic Data Science: Geopandas; Raster; sf; sp; PostSQL
- Data related: Google Analytics, SPSS, Hadoop, Spark, Tableau
- GIS-related software: QGIS; ArcMap; CartoDB; PostGIS; GeoDa
- Languages: Chinese; English

Research Directions & Interests

- Geographic Data Science
- Geodemographics
- Urban Analytics
- Environment & Public Health
- Spatiotemporal Big Data Analytics
- Google Street View (GSV) & Remote Sensing
- Machine Learning/ Deep Learning / GeoAI
- Computational Social Science