Zhewei LIU

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EDUCATION

Ph.D in GIS, The Hong Kong Polytechnic University   08.2016-05.2021
Thesis Topic: Semantic, Spatial and Temporal Modelling of Geotagged Social Media Data for Desirable Region and Event Detection, Supervised by Prof. Wenzhong Shi and Prof. Geoffery Shen

B.S. in Remote Sensing and Geographical Information Science, Wuhan University
GPA 3.65/4.0, Average Score 89.5/100, Ranking: **1**/70   09.2011-06.2015

PROFESSIONAL APPOINTMENTS AND EXPERIENCES

Postdoc Associate, The Hong Kong Polytechnic University   01.2022-date

Research Assistant, The Hong Kong Polytechnic University   02.2021-12.2021

RESEARCH INTEREST

GeoAI, urban informatics, human mobility, applied machine learning, location-based service

PUBLICATIONS

Liu Z, Wang A*, Chan Ed, et al. Segmentation of cultural tourism market using location-based social network data. Tourism Management (accepted). (**JCR Q1, TOP Journal in Management/Tourism**)

Liu, Z., Shi, W., & Zhang, A. (2021). Detecting home countries of social media users with machine-learned ranking approach: A case study in Hong Kong. Applied Geography, 134, 102532. (**JCR Q1**)

Liu, Z., Zhang, A., Yao, Y., Shi, W., Huang, X., & Shen, X. (2021). Analysis of the performance and robustness of methods to detect base locations of individuals with geo-tagged social media data. International Journal of Geographical Information Science, 35(3), 609-627. (**JCR Q1**, **TOP 1 Journal in GIS**)

Shi, W., **Liu, Z**∗, An, Z., & Chen, P. (2021). RegNet: a neural network model for predicting regional desirability with VGI data. International Journal of Geographical Information Science, 35(1), 175-192. (**corresponding author**, with supervisor being first author). (**JCR Q1**, **TOP 1 Journal in GIS**)

Liu, Z., Zhou, X., Shi, W., & Zhang, A. (2019). Recommending attractive thematic regions by semantic community detection with multi-sourced VGI data. International Journal of Geographical Information Science, 33(8), 1520-1544. (**JCR Q1**, **TOP 1 Journal in GIS**)

Liu, Z., Zhou, X., Shi, W., & Zhang, A. (2018). Towards detecting social events by mining geographical patterns with VGI data. ISPRS International Journal of Geo-Information, 7(12), 481.

Shao, P., Shi, W., **Liu, Z.**, & Dong, T. (2021). Unsupervised Change Detection Using Fuzzy Topology-Based Majority Voting. Remote Sensing, 13(16), 3171

Yao, Y., Shi, W., Zhang, A., **Liu, Z.**, & Luo, S. (2021). Examining the diffusion of coronavirus disease 2019 cases in a metropolis: a space syntax approach. International journal of health geographics, 20(1), 1-14

Huang, X., Lu, J., Gao, S., Wang, S., **Liu, Z.**, & Wei, H. (2021). Staying at Home Is a Privilege: Evidence from Fine-Grained Mobile Phone Location Data in the United States during the COVID-19 Pandemic. Annals of the American Association of Geographers, 1-20. (**JCR Q1**)

Wang, A., Zhang, A., Chan, E. H., Shi, W., Zhou, X., & **Liu, Z**. (2021). A review of human mobility research based on big data and its implication for smart city development. ISPRS International Journal of Geo-Information, 10(1), 13.

Chen, P., Shi, W., Zhou, X., **Liu, Z.**, & Fu, X. (2019). STLP-GSM: a method to predict future locations of individuals based on geotagged social media data. International Journal of Geographical Information Science, 33(12), 2337-2362. (**JCR Q1**, **TOP 1 Journal in GIS**)

PAPERS UNDER REVIEW

Liu Z, Shi W∗, Zhang A. Measuring Chinese cities' economic development with mobile application usage. Physica A: Statistical Mechanics and its Applications (under review)

Liu Z, Shi W**.** Modelling movement uncertainty of indoor trajectories with a LSTM-based neural network. International Journal of Geographical Information Science (major revision)

PATENTS

Shi W, **Liu Z**. Regional attraction assessment method and device. ZL 201910436416.0

Shi W, **Liu Z**. Method for predicting target area based on social media sign-in, terminal and storage medium. ZL 202011358914.7

Shi W, Wang M, **Liu Z**. Camera internal reference and camera relative laser radar external reference calibration method and electronic equipment. ZL 202110023285.0

GRANTS&FUNDINGS

External
Home country detection of social media users based on machine-learned ranking, Open Research Funding, LIESMARS, China, RMB 50,000, **PI**.   01.2022-12.2023

Internal
Postdoc Matching Fund (to support excellent Postdoc researcher with special University funding), The Hong Kong Polytechnic University, Hong Kong, China, HKD 364,054, **Funding Receiver**.   01.2022-12.2023

RESEARCH PROJECT

"Three-dimensional perception of urban agglomerations and data governance technology", funded by Ministry of Science and Technology, P.R. China   2020- present
Core researcher and developer, to model the patterns of human mobility and evaluate the results' uncertainty using multi-sourced flow data.

"Collaborative computation for multi-source geographic big flow data", funded by Ministry of Science and Technology, P.R. China   2018-2020
Core researcher and developer, to detect events by investigating the irregular patterns of the tracked human mobility

"Urban big data analytics for spatiotemporal human activity modeling and prediction", funded by the Hong Kong Polytechnic University   2016-2018
Core researcher and developer, to predict the urban desirable regions with the human mobility footprints (location-based social network)

"Monitoring of the Evolution of Urbanization of Dongguan", funded by Department of Land and Resources of Guangdong Province, P.R. China   2014-2015
Core researcher and developer, to evaluate urbanization of Dongguan city and develop a comprehensive software

AWARDS & HONORS

- Outstanding Graduates of Wuhan University, 2015 (10%)

- Annual Outstanding Students of Wuhan University, three times (2012, 2013, 2014) (10%)
- Second Honor Scholarship of Wuhan University, twice (2013, 2014) (10%)
- Xijie Special Scholarship, 2012
- First Honor Scholarship of Wuhan University, 2012 (2%)

COMPUTER SKILLS

Programming Languages: Python, SQL, Matlab, C/C++, C#, Javascript
Code Library: Pytorch, Keras, Scikit-learn, Numpy, Pandas, OpenCV, ArcObjects
Skills: machine learning, large-scale database, complex network analysis, Git

LANGUAGES

Mandarin: Native
English: Professional Proficiency, **GRE**: 329/340
Cantonese: Elementary Proficiency

SERVICE

Reviewer for IEEE Transactions on Image Processing
Co-founder/Coordinator of Taibai Reading Club, the Hong Kong Polytechnic University 2017-Present