GEZHI XIU

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EDUCATION

Peking University, Beijing *September 2018 - Present*
Ph.D. in Science, advised by Prof. Yu Liu
Institute of Remote Sensing and Geographical Information Systems

Peking University, Beijing *September 2014 - July 2018*
B.S. in Mathematics and Applied Mathematics.
School of Mathematical Sciences

RESEARCH INTERESTS

Complex network, Statistical physics with spatial background, Theoretical ecology, Interacting particle systems

WORKING ON

Scaling Laws in Urban Science
We reviewed recent works on quantitative results for urban scaling laws. In this work (a review article in Chinese) We focused on generation models that cope with these laws, concluding that different historical states of cities are driven by different dynamical assumptions.

Vicissitudes of Cities driven by Redistributive Growth
We view the cities as growing organisms and the growths only take place at places with economical input co-occurring with productive citizens. Following these we build a better replica of urban system, which is a spatial version of Yule model with a memory kernel serving as social resources. We reformulate well-observed features such as Zipf's and Clark's law in urban studies. We also predict the spatial transitions of urban dynamics with quantitative analysis. This work will be submitted in Feb. 2020.

SKILLS

Data Analysis and Graphics: Python (including PyTorch, numpy, scipy, pandas, geopandas, matplotlib, networkx, and scikit-learn)

Mathematics: Well-trained in complex network, probabilistic models, data science; Quick interpreter (I have held five workshops on stochastic models in spatial analysis)

Music: Violinist for 20 years (Served in Peking Univ. Students' Orchestra from 2014 to present, and as the First Chair of Violin II in 2017-2018; Conductor of Strings Association of Peking University in 2017-2018.)

Personal Page: `gxiu.github.io`

AWARD

First Place in AI tasks of Zhongan Hackathon, 2019, granted 50,000 RMB.