

Luyu Liu

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Research Area

- Urban Computing in public transit and smart city context
- New transportation solutions
- Geo-visualization

Education

- Aug 2019 - present** Department of Geography, The Ohio State University, Columbus, Ohio
Ph.D. Geography
- Aug 2017 - Jul 2019 Department of Geography, The Ohio State University, Columbus, Ohio
M.A. Geography
- Sep 2013 - Jul 2017 College of Urban and Environmental Sciences, Peking University, Beijing, China
B.S. Environmental Science
- Sep 2014 - Jul 2017 School of Mathematical Sciences, Peking University, Beijing, China
B.S. Mathematics and Applied Mathematics

Thesis

- Feb 2018 - present "Measuring public transit transfer risk using high-resolution schedule and real-time bus location data"
Master's thesis, The Ohio State University, with Dr. Harvey Miller, Dr. Ningchuan Xiao, and Dr. Morton O'Kelly
Develop a series of indexes and an integrated information system to assess, visualize and analysis the public transit system's transfer performance
- Feb 2015 - Jun 2017 "Measuring and Decomposing Global CO2 emission Inequality"
Undergraduate thesis, Peking University, with Dr. Bengang Li
Develop new approaches to quantifying the inequality of global FF-CO2 emission

Publication

- Paper
2019 Park, Y., Mount, J., Liu, L., Xiao, N., & Miller, H. J. (2019). Assessing public transit performance using real-time data: spatiotemporal patterns of bus operation delays in Columbus, Ohio, USA. *International Journal of Geographical Information Science*, 1-26.

Book Chapter

2019
Xiao, N., Mount, J., Liu, L., Park, Y., Porr, A., Miller, H. J. (2019).
Cultivating big data via urban observatories. In *Urban Informatic*.

Conference

2019
Liu, L., Miller, H. J. (2019) Measuring public transit transfer risk using
highresolution schedule and real-time location data. At American Association
of Geographers Annual Meeting 2019, Washington, DC.

2019
Root, E. D., Liu, L., Porr, A. (2019) Addressing birth outcomes with data
analytics and spatial analysis. At 18th International Medical Geography
Symposium 2019, Queenstown, New Zealand.

Research Projects

Aug 2017 - Oct 2018 "Columbus Urban & Regional Information Observatory (CURIO)"
The Ohio State University, with Dr. Harvey Miller and Dr. Ningchuan Xiao
Visualize the geographic information in city of Columbus in comprehensive
web-map

May 2018 - present "Infant Mortality Research Partnership (IMRP) Online GIS Platform"
The Ohio State University, with Dr. Elisabeth Root
Integrate and visualize public health and GIS data in a holistic web-based
platform

Nov 2017 - present "Neighborhood Polygon Algorithm Based on Network Analysis"
The Ohio State University, with Dr. Christopher Browning, Dr. Catherine
Calder
Develop algorithm generating neighborhood polygons based on road network

Jul 2016 - Sep 2016 "Spatial Analysis of Gasoline Price in Santa Barbara and Goleta"
University of California, Santa Barbara, with Dr. Alan Murray
Interpret raw gas data using ESDA, clustering, regression and time-series
analysis

Jan 2015 - Mar 2015 "A Thermodynamic Model Applied to Transportation in Beijing"
Awarded by PKU Science and Technology Competition
Constructe a physical model and applied it to Beijing transportation

Jan 2016 - Feb 2016 Participated in "2016 Mathematical Contest in Modeling"
Hosted by Consortium for Mathematics and Its Applications
Honorable Mentioned by MCM/ICM

May 2015 - Oct 2015 "Mapping and analyzing of concentration of EDCs in Lake Tai"
Peking University, with Dr. Jianying Hu
Analyze EDCs in Lake Tai using ArcGIS and SPSS to estimate health hazard

Awards

- "Everest Award" by Department of Education and Peking University, China. Four years' research funding, travel support and life subsidy of total \$6000.
- Scholarship of Tiehan, PKU, 2013-2014
- Scholarship of Tiehan, PKU, 2014-2015
- Scholarship of Tiehan, PKU, 2015-2016
- Honorable Mentioned by "Mathematical Contest in Modeling" Sponsored by COMAP
- President of "Outstanding Class" award winner of PKU in 2015

Skills

Scripting: Python, Node.js

Programming: Java/Android, C#, C/C++

Visualization: Javascript with Leaflet, ArcGIS js API, d3

Machine Learning: Tensorflow, Keras, YOLO

Parallel Computing: CUDA, Spark

Statistics: Matlab, R, SAS, SPSS

Database: MongoDB, PostgisSQL/PostGIS, SQLite

Spatial Analysis and Cartography: ArcGIS(ArcPy, ArcEngine), GeoDa