YIFENG LIU

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Department of Urban Studies and Planning, MIT
235 Albany St, Cambridge, MA

EDUCATION

Department of Urban Studies and Planning, MIT   **Cambridge, MA**
Master of City Planning - City Design and Development   *Aug 2023 – Present*

- Courses Registered: 11.203: Microeconomics, 6.7920 Optimization Method, 6.s898 Deep Learning

School of Architecture, Tsinghua University   **Beijing, China**
Bachelor of Architecture   *Sep 2018 – Jun 2023*

- Minor Courses: General Psychology, Cognitive Psychology, Programming Fundamentals, Big Data and Machine Intelligence, Statistical Inference, Multivariate Statistical Analysis, Design and Analysis of Experiments, Linear Regression Analysis

- Other Achievements: Academic Advancement Program Outstanding Scholar; Outstanding Individual for Rural Revitalization(2019)

Research Interest

My research interest lies at the confluence of **urban informatics** and **data-driven optimization**, with a keen focus on deciphering **human mobility patterns**. I am dedicated to leveraging these insights to enhance urban operations, to optimize public resources for the greater social benefit.

ACADEMIC EXPERIENCE

Sustainable Urbanization Lab, Center of Real Estate, MIT   **Cambridge, MA**
Market Scientific Research on the Promotion of Heat Pump in Cities (Processing)   *Sep 2023 - Present*

Future Urban AI Studio, Tsinghua University   **Beijing, China**
Infrastructure Analysis based on NYC 311 Service (Processing)   *July 2023 - Present*

- The reliability of urban infrastructure analysis by analyzing the temporal dimension and spatial correlation of 311 service data

- Establishment and management of NYC infrastructure database, which involves geo-coding and distributed computing

Jogging Antivity and Public Health   *April 2022 - Aug 2023*

- Relevant Publication: *Analyzing jogging activity patterns and adaptation to public health regulation*, **Liu Y**, Lai Y. Environment and Planning B: Urban Analytics and City Science, 0(0). https://doi.org/10.1177/23998083231193484

Beijing Infractructure Analysis   *March 2022 - Oct 2022*

- Relevant Publication: *Do Vibrant Places Promote Active Living? Analyzing Local Vibrancy, Running Activity, and Real Estate Prices in Beijing*, Lai Y, Li J, Zhang J, Yan L, **Liu Y**. International Journal of Environmental Research and Public Health 19.24 (2022): 16382. https://doi.org/10.3390/ijerph192416382

Informal Urban Settlements Computing   *Jan 2022 - April 2022*

- Relevant Publication: *Computing Places and Human Activity in Data-absent Informal Urban Settlements*, Y. Lai and **Y. Liu**, 2022 IEEE International Conference on Pervasive Computing and Communications Workshops and other Affiliated Events (PerCom Workshops), 2022, pp. 478-483, https://doi.org/10.1109/PerComWorkshops53856.2022.9767381

ATOMS ATELIER Urban Analysis Group   **International Cooperation**
Algorithm development and statistical analysis   *May 2022 - Oct 2022*

- Related publication: *Investigating the Impact of Perceived Micro-Level Neighborhood Characteristics on Housing Prices in Shanghai*, Song, Q.; **Liu, Y**.; Qiu, W.; Liu, R.; Li, M. Land 11.11 (2022): 2002. https://doi.org/10.3390/land11112002

Teaching Experience

11.S954 Applied Data Science for Cities   **DUSP, MIT**
Teaching assistant   *2023 fall*

- Aims to explore the relationship between people's evaluation of the security in streetview and the distribution of infrastructure

11.205 Introduction to Spatial Analysis and GIS   **DUSP, MIT**
Teaching assistant   *2023 fall*

- Aims to explore the relationship between people's evaluation of the security in streetview and the distribution of infrastructure

COURSE WORK

Optimization Method   **MIT Course Work**
Covid testing stations in 2022 lockdown Shanghai   *Nov 2023 – Sep 2023*

- Employed flow network optimization techniques to distribute COVID testing sites based on population density data, achieving full coverage without additional costs and preparing a scalable model for city-wide implementation.

Big Data and Machine Intelligence - final individual project   **THU Course Work**
Street view element segmentation based on tensorflow framework   *Feb 2022 – Jun 2022*

- Aims to explore the relationship between people's evaluation of the security in streetview and the distribution of infrastructure
- Crowdsourcing data platform and Model Trainning: Train a Mask R-CNN model for street view segmentation and correlative study with the crowdsourcing comments

AR application Development   **Summer Workshop**
An inclusive template to assist people in blocked subway feeling the surficial city via AR   *May 2022 – Sep 2022*

- Google Street View crawling and relocation processing of flicker photo of downtown Tokyo (location of photo in Street View)
- AR app development based on Unity (Vuforia) - Unity APP testing and user usage research, design development

PROFESSIONAL EXPERIENCE

CityDNA tech   **Beijing, China**
Data Analysis Internship   *Jun 2022 – Aug 2022*

- City Physical Examination: Establish a database based on human activity and infrastructure data provided by the Tianjin and Changzhou municipal governments. Measure the completion of the construction of roads and infrastructure in the city.
- Pinsurvey Platform: Organize the database that can reflect the use of the online platform, and build the inductive statistical data visualization platform for managers and back-office personnel.

People's Archietcure Office   **Beijing, China**
Architecture Design Internship   *Jun 2021 – Aug 2021*

- Plug-in house product design and building structure research and development
- Architectural analysis diagrams drawing and rendering

COFCO China National Cereals, Oils and Foodstuffs Corporation   **Shenzhen, China**
Business Development Internship   *Jun 2020 – Jul 2020*

Bid feasibility analysis - Combined with the rapid design of real estate buildings, calculate the construction cost, sale price and construction cycle in urban land. / Participate in an optimization development meeting for a specific urban renewal site

SKILLS

Languages: Cmputing: Python, Julia, C, C++, PostgreSQL, R, JS, HTML; Communicting: English(professional) and Chinese(native).
Programing: Gurobi, Geopandas, Tensorflow, Dask, Skcikit-learn, PostgreSQL, MongoDB...
Design, Construct & Graphic : Adobe Design Suite, QGIS, Rhino, Mapbox, AutoCAD, V-ray, Enscape, figma, Unity(Vuforia) ...