Anran Zheng

anranzheng@ufl.edu | 1-267-206-6279 | https://anran0716.github.io/

Education

University of Florida — Gainesville, FL
Master of Transportation Engineering — *Aug 2023 (Expected)*

University of Pennsylvania — Philadelphia, PA
Master of Urban Spatial Analytics — *May 2022*

Northern Illinois University — Dekalb, IL
Bachelor of Science in Geography — *Aug 2021*

Capital Normal University — Beijing, China
Bachelor of Science in GIS — *Jun 2021*

Skills

Programming: Python, R, SQL, C++, Latex.
Spatial Analysis: ArcGIS, QGIS, ArcGIS Pro, Google Earth Engine, GeoDa.
Data Analytics: Machine/Deep Learning, Google Cloud Computing, Git, and ETL Pipeline.
Data Visualization: PowerBI, Tableau, Javascript, HTML/CSS.
Statistical Modelling: Logistic Regression, SVM, XGBoost, Random Forest, K-Means, Cross-Validation.

Data Science Projects

Bus fleet electrification and e-bus charging station planning in Gainesville, FL 2023
- Developed an electric energy consumption estimation model based on the GTFS dataset.
- Strategically planned the optimal placement of e-bus charging stations by implementing and comparing various location siting models. Conducted a comprehensive evaluation of these models.

Analysis of Miami-dade Transit buses' On-time Performance 2023
- Scrapped and processed about 40 million rows of on-time performance data from Swiftly.
- Developed performance metrics to measure the transit service supply and on-time performance.
- Implemented advanced machine learning algorithms (e.g. RF, SVM, XGBoost) to predict the bus delay time. Optimized model performance through hyperparameter tuning, resulting in a 20% reduction in MAE.
- Led and mentored graduate students in establishing a web dashboard for visualizing bus on-time performance. Allowed users to track detailed real-time and historic spatiotemporal information of bus delay.

Evaluation framework of the optimal locations for mobility hubs in Gainesville, FL 2023
- Created a multi-criteria evaluation framework to spatially locate mobility hubs. Considered factors such as first mile/last mile connectivity score, transit ridership and supply, and social equity.
- Collaborated with FDOT to produce reports and deliver monthly presentations to the city of Gainesville.

Analysis of the food acquisition behavior in North Florida 2023
- Cleaned, preprocessed and visualized a massive GPS dataset at about 140 GB.
- Guided two CS master students on the development of algorithms, which can accurately identify individuals' home location, food acquisition trips, and travel mode.

Spatial accessibility to the COVID-19 testing sites in NYC 2022
- Built ETL pipelines & interactive dashboard visualizing the COVID-19 situation in NYC.
- Utilized O-D cost matrix and network analysis to assess the spatial accessibility to COVID-19 testing sites in ArcGIS Pro. Identified and compared the variation across non-transit and transit modes.
- Investigated socioeconomic factors influencing the spatial accessibility of testing sites. Identified underlying causes in spatial disparities to provide insights for equitable resource allocation.

Work Experiences

Chinese Academy of Surveying and Mapping | GIS and Statistics Analyst Jul. 2020 - Jan. 2021
- Developed an advanced algorithm, which can extract and classify lakes by leveraging a vast elevation dataset.
- Conducted spatial and statistical analysis about land-use patterns among different cities in China.
- Created a detailed laboratory manual outlining the data analysis process and presented it to the local environmental agency.