Anran Zheng

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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*

Skills

Programming: Python, R, SQL, C++, Latex.
Spatial Analysis: ArcGIS, QGIS, ArcGIS Pro, Google Earth Engine, GeoDa, SPSS.
Data Visualization: Tableau, Javascript, HTML/CSS, ArcGIS Online.

Projects

Analysis of Miami-dade Transit buses' On-time Performance [link] Apr. 2023 - now
- Scrapped and processed about **40 million** records of on-time performance data from **Swiftly API**.
- Applied various metrics (e.g. arrival/schedule time difference, headway difference at routes/stops level) to measure the transit service supply and reliability.
- Generated compelling visualization and detailed reports to convey findings to Miami-dade transit authority.
- Led and mentored graduate students in establishing a user-friendly **web dashboard** for visualizing bus on-time performance. Allowed users to track detailed real-time and historic spatiotemporal information of bus delay.

Analysis of Large-scale GPS Travel Survey Data in North Florida Mar. 2023 - now
- Cleaned, preprocessed and visualized a massive GPS dataset at about **140 GB**.
- Designed sophisticated algorithms capable of accurately inferring individuals' trip origin/destination to access the food sources and their travel modes from GPS dataset.

Plan the Optimal Locations for Mobility Hubs in Gainesville, FL [link] Feb. 2023 - now
- Analyzed and quantified spatial indicators (e.g. **transit connectivity, spatial accessibility, and social equity**) through **Module Builder**. Integrated them to the suitability score to site mobility hubs.
- Collaborated with **FDOT** to produce reports and deliver monthly presentations.

Plan the Siting of E-bus Charging Stations in Gainesville, FL [link] Oct. 2022 - May. 2023
- Modeled the electric energy consumption from the **GTFS dataset** and improved **30%** of prediction accuracy.
- Implemented a location optimization model of e-bus charging stations, which can achieve **85% service coverage** of e-buses and **30% reduction of system travel time.**

Spatial Accessibility to the COVID-19 Testing Sites in NYC [link] Jan. 2022 - Apr. 2022
- 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 spatial accessibility across multimodal transport modes.
- Investigated socioeconomic factors influencing the spatial accessibility of testing sites. Identified underlying causes in spatial disparities to provide insights for equitable resource allocation.

Philadelphia Chinatown Pedestrian and Bicycle Improvement Plan [link] Jan. 2022 - Mar. 2022
- Conducted extensive research and geospatial analysis of existing pedestrian and bicycle infrastructure, traffic patterns, and social equity in Philadelphia Chinatown.
- Developed a comprehensive plan that included physical infrastructure and built environment improvements.
- Created clear graphics, maps, reports, and presentations to communicate the plan effectively.

Work Experiences

Chinese Academy of Surveying and Mapping | GIS and Statistics Analyst Jul. 2020 - Oct. 2020
- Extracted and classified lakes in Tibet through advanced Python programming based on a vast elevation dataset. **Saved 80% of calculation time.**
- Performed spatial and statistical analysis about changes of land-use patterns and urbanization situation among different cities in China with ArcGIS and advanced functions in **Excel (e.g. VLOOKUP, Pivot Table)**.