

Anran Zheng

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EDUCATION

University of Florida <i>Master of Transportation Engineering</i>	Gainesville, FL <i>Aug 2023</i>
University of Pennsylvania <i>Master of Urban Spatial Analytics</i>	Philadelphia, PA <i>May 2022</i>
Capital Normal University <i>Bachelor of Science in GIS</i>	Beijing, China <i>Jun 2021</i>

SKILLS

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

PROJECTS

- Analysis of Miami-dade Transit buses' On-time Performance (OTP)** [\[link\]](#) Apr. 2023 - now
- Scrapped and processed ~ **100 GB** of 5-year OTP data from **Swiftly API**.
 - Measured the OTP through various metrics (e.g. arrival time/headway difference at routes/stops level), visualized through **Tableau dashboard** and delivered reports to **Miami Transit Authority**.
 - Conducted **Feature Engineering and EDA** of OTP data. Employed **time-fixed effects** regression model to identify out key features impacting the bus ridership (e.g. short headway, on-time rate).
- Leveraging Big data analytics to plan Mobility Hub in Florida** [\[Story map\]](#) May. 2023 - now
- Collected and processed geospatial data among various cities from multiple sources (e.g. ACS, LEHD, OSM).
 - Analyzed and quantified spatial indicators (e.g. **transit connectivity, spatial accessibility, and social equity**) through **Module Builder** in ArcGIS. Integrated them to the suitability score to site mobility hubs.
 - Collaborated with **FDOT** to produce reports and deliver monthly presentations.
- Analysis of Large-scale GPS Travel Survey Data in North Florida** Mar. 2023 - June. 2023
- Cleaned, preprocessed and visualized a massive GPS dataset at ~ **140 GB**.
 - Designed sophisticated algorithms based on a novel Python package named *trackintel*, which can accurately identify individuals' trip information to access the food sources and their travel modes from GPS dataset.
- Plan the Siting of E-bus Charging Stations (EBCS) in Gainesville, FL** [\[link\]](#) Oct. 2022 - May. 2023
- Extracted real-time vehicle location data at ~ **1 million** records over half a year from public APIs.
 - Built predictive model to estimate the bus electric energy consumption based on the **GTFS dataset**.
 - Implemented a location optimization model to site EBCS, which can achieve **95% service coverage** of e-buses given only 4 EBCS being sited in Gainesville.
- Spatial Accessibility to the COVID-19 Testing Sites in NYC** [\[link\]](#) Jan. 2022 - Apr. 2022
- Leveraged Python and SQL to extract COVID-19 data and loaded into Google Cloud Storage. Transformed the data into appropriate form with Google Big Query. (**ETL Pipeline**)
 - 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 through **GWR model** in RStudio.

WORK EXPERIENCES

- Chinese Academy of Surveying and Mapping** | GIS and Statistical 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** and proved the effects of global warming on lake size changes.
 - Performed spatial and statistical analysis about changes of land-use patterns among different cities in China with ArcGIS, **SPSS** and advanced functions in **Excel** (e.g. **VLOOKUP, Pivot Table**).