Michael Rodriguez

Email | LinkedIn | GitHub | Personal Website

EDUCATION

Carnegie Mellon University, Heinz College, Pittsburgh, Pennsylvania 08/2022– 05/2024
M.S. in Public Policy & Management – Data Analytics (GPA: 3.76)
Extracurriculars: TA for Strategic Presentation Skills (Spring 2023, Fall 2023, Spring 2024), Heinz Consulting Club (Treasurer), Transportation Club Member, Project Member for Students Using Data for Social Good (Fall 2023)

University of La Verne, La Verne, California 08/2018 – 05/2022
B.S in Information Technology (GPA: 3.94)

SKILLS

- **Programming:** Python (sklearn, pandas, seaborn, numpy, plotly, requests, beautifulsoup), R, HTML/CSS
- **Analytics:** ArcGIS, Excel, PowerBI, Google Data Studio, Tableau, SPSS
- **Databases:** SQL (PostgreSQL, Microsoft SQL Server, Microsoft Access), MongoDB, Google Big Query

PROFESSIONAL EXPERIENCE

Policy Intern, Mobilify Southwestern Pennsylvania, Pittsburgh, PA 10/2023 – Present
- Researching how existing transportation funding can be reprogrammed to achieve a more multimodal future for the southwestern PA area, informed by identifying trends in transportation policy as models for the region

STIPDG Data Science Intern, U.S. DOT Volpe Center, Cambridge, MA 06/2023 – 08/2023
- Streamlined workflow of importing public transportation data by implementing automation techniques, optimizing an energy analysis tool, saving time from manual inputs and enhancing the quality of data utilized for modeling purposes
- Assisted in analyzing and comparing crowdsourced infrastructure data with the existing data collection of the Florida department of transportation, evaluating data alignment and limitations
- Co-authored a research paper that supports the establishment of a replicable study framework for a human factors experiment centered around e-bike usage in public lands
- Conducted a comprehensive assessment of down-scaled climatology data, inspecting its usability for a climate resilience tool aimed at measuring climate resilience for airports

Project Manager, Students Using Data for Social Good, Pittsburgh, PA 09/2022 – 05/2023
- Guided and coached a team of 5 students lacking prior GIS experience, facilitating the creation of a specialized GIS dashboard for a local nonprofit centered on mobility initiatives
- Integrated a collection of more than 400 elements of bike infrastructure with the latest city and regional boundary data
- Collaborated regularly with a client representative, ensuring project updates were communicated monthly and receiving valuable input on the direction of project iterations

REU Data Science Fellow, Marquette University, Remote 06/2021 – 08/2021
- Researched and reviewed 14 artifacts of theoretical and empirical literature on neighborhoods, places, and crime
- Identified areal interpolation to be an appropriate measure for spatial science concepts regarding neighborhoods and demographic information with respect to 2020 census data of the city of Milwaukee
- Developed testable hypotheses for what demographic contributors would be best fitted to estimate data for 190 neighborhoods as synthesized from Milwaukee's 239 census tracts
- Calculated likelihood estimates using SPSS software to assess the effectiveness of the areal interpolation model

PROJECTS

Deep Learning Model to Detect Bike Lane Blockage 10/2023 – 12/2023
- Developing a CNN model to detect if a bike lane located in Arlington, VA is blocked by the presence of a motor vehicle

Parkway West Replacement Analysis Report 09/2023 – 12/2023
- Produced an ArcGIS StoryMap based on geospatial analysis to support recommending where to construct "Mobility Hubs" in the city of Pittsburgh based on various multi-modal infrastructure

Parkway West Replacement Analysis Report 09/2023 – 10/2023
- Produced report based on the evaluation of two potential highway revitalization options located in the Pittsburgh area utilizing loop detector data for a level of service and vehicle delay analysis for the implementation of manual toll booths

Machine Learning Applications for Bridge Repair and Maintenance 03/2023 – 05/2023
- Leveraged tree-based machine learning models aimed at provided greater insights to address the importance of maintaining critical infrastructure with addressing concerns on repair backlogs and funding requirements

Product Carbon Emissions Analysis 12/2022 – 01/2023
- Created 12 that queries would be useful for anyone interested in understanding what information is extractable from the Carbon Catalogue dataset for international retail products

Los Angeles County Earthquake Preparation Tool 09/2022 – 10/2022
- Created a python script to serve as a prescriptive analysis tool to identify recommendation areas to improve the emergency response for earthquakes in the Los Angeles County region of California