Ryan Zhenqi Zhou

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EDUCATION

University at Buffalo – SUNY, USA 09/2021 - Present
Ph.D. in Geographic Information System (GPA: 4.0; GeoAI, Geospatial Big Data Analytics)
M.S. in Data Science (GPA: 4.0; Machine Learning, Artificial Intelligence)

Nanjing Forestry University, China 09/2018 - 06/2021
M.E. in Landscape Architecture (Spatial-Temporal Data Mining, Spatial Data Analysis)

Zhejiang A&F University, China 09/2014 - 06/2018
B.A. in Landscape Architecture

EXPERIENCE

Research Assistant, GeoAI Lab, University at Buffalo – SUNY, Buffalo 09/2021 - Present

Obesity Estimation Optimization
- [Feature Selection] Processed human mobility data (3 GB), and derived neighborhood-level diet and physical activity features using Python
- [Machine Learning] Implemented ML models including linear regression (LR), geographically weighted regression (GWR), random forest (RF), deep neural network (DNN), and geographically random forests (GRF) to predict obesity prevalence with accuracies over 90% by cross validation
- First-author paper published and presented at the 2022 GEOMED Conference

Data Quality Assessment
- [NLP] Assessed the quality of 40,000+ location addresses of alcohol outlets via fuzzy string matching and reached 70% accuracy

Disaster Impact Assessment
- Developed a data-driven framework for assessing spatial and temporal impacts of the Texas Winter Storm via human mobility data and nighttime light images
- Combined with socioeconomic and demographic data, investigated impacts on different communities during the Texas Winter Storm
- Sponsored by NSF Research Experience for Graduates Grant, and presented at the 2023 AAG Conference

Spatial Data Analyst (Intern), MetroDataTech, China 08/2020 - 09/2020

Educational Facility Assessment
- Evaluated the accessibility and land use of educational facilities in Shanghai using Geopandas in Python and ArcGIS Pro, resulting in a $30K profit for the company

Research Assistant, Nanjing Forestry University, China 09/2018 - 06/2021

Medical Facility Accessibility Assessment
- [Data Mining] Scraped travel distance and time (2 billion) from communities to Wuhan medical facilities during the COVID-19 pandemic using Python, MongoDB SQL, and Map API
- Developed new service area plans and assessed the accessibility of medical facilities in Wuhan for decision-making
- First-author paper published and presented at the 2022 UCGIS Symposium

Park Walkability Assessment
- [Data Mining] Scraped walking routes and street view photos (10,000+) using Python and Map API
- [Deep Learning] Identified the pedestrian shed and detected the walking route environment of urban parks by conducting pre-trained AI models
- First-author paper published and presented at the 2019 International Conference on Urban Health

Urban Sensing Toolkits
- Developed urban sensing toolkits (Area of Interests Scraper, Street View Recognizer, etc.) using PyQt in Python
- Applied 15 software patents, and cited by research papers

SKILLS

- **Languages/Tools:** Python, R, Git, SQL, ArcGIS Pro, Linux
- **Libraries:** NumPy, Pandas, GeoPandas, Scikit-Learn, Keras, TensorFlow, Matplotlib, Seaborn, Bokeh, Requests, JSON, PyQt
- **Machine Learning:** Linear Regression (OLS and GWR), Tree-based Models (RF and GRF), Neural Network (DNN, etc.), Clustering (K-means)

AWARDS

Travel Award by NSF I-GUIDE Summer School Program 08/2023
Hugh W. Calkins Applied GIS Award 05/2023
National Science Foundation (NSF) Research Experience for Graduates Grant 05/2022