

## Ryan Zhenqi Zhou, Ph.D. Candidate

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### EDUCATION

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#### University at Buffalo – SUNY, USA

09/2021 – 06/2025 (expected)

Ph.D. in Geographic Information System (STEM) (GPA: 4.0)

M.S. in Data Science (GPA: 4.0)

- **Geographic Information System Coursework:** GeoAI, Geospatial Big Data Analytics, Time Series Analysis, Remote Sensing
- **Data Science Coursework:** Machine Learning, Deep Learning, Database, Data Visualization, Probability, Linear Algebra

### SKILLS

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- **Languages/Tools:** Python, R, SQL, Git, ArcGIS Pro
- **Libraries:** NumPy, Pandas, GeoPandas, Scipy, 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)

### EXPERIENCE

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#### 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] Developed geographically random forests (GRF) in Python which takes spatial index into consideration
- [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

- [Time Series Analysis] Developed a data-driven framework for assessing spatial and temporal impacts of the Texas Winter Storm via human mobility data and remote sensing images
- Combined with socioeconomic and demographic data, investigated impacts on different communities during the Texas Winter Storm
- First-author [paper](#) published 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, SQL, and Map API
- Assessed the accessibility of medical facilities and developed new service area plans 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 walking area and detected the walking 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

### AWARDS

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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