

Shiyan Zhang

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EDUCATION

Ph.D. in Geography

Fall 2021

Department of Geography, Pennsylvania State University, University Park, PA

M.A. in Geography, GIS Certificate

Fall 2014 – Spring 2016

The Geography Department, the George Washington University, Washington D.C

GPA: 3.66

Other selected courses: Intro to Data Science, Data mining, Web based GIS

B.S. in Geographic Information Science

Fall 2014 – Spring 2016

School of Geomatic and Urban Spatial Informatics, Beijing University of Civil Engineering and Architecture, Beijing, China

GPA: 3.2

WORKING PAPERS

Peer-reviewed Journals

Jachimowics A, Zhang S, Jakubek D. (2019) "Developing Low-Cost Inundation Maps for Dam Failures: Modeling and Analysis of a Potential Dam Failure for the Péligré Dam in Haiti", *R&R at Journal of Homeland Security and Emergency Management*.

CONFERENCE PRESENTATIONS

2016. Shiyan, Zhang. "The Relationship Between NTD Based Newborn Defects and Geographic Environment in Hainan, China", oral presentation at Association of American Geographers (AAG), San Fransisco, CA.

RESEARCH EXPERIENCE

Research Assistant

Engineering Management and Systems Engineering Department, The George Washington University

September 2018 – June 2019

Research: Modeling and Analysis of a Potential Dam Failure for the Péligré Dam in Haiti.

- Prepared GIS and remote sensing data: merging DEM of Artibonite river area (by python) and doing land cover classification for further flood inundation simulation.
- Using python developed a method for calculating fatality rate based on inundation simulation results.
- Documented workflows, contributed to the literature review and geographic data analysis method parts of the submitted paper.

Research Assistant

Geography Department, the George Washington University September 2015 - May 2016

Direct research: Testify whether the drug-abuse related issue happen in the great DC areas related to the surrounding neighborhood effect.

- Processed spatial analysis (kernel density and Euclidean distance) on Police and Fire station by creating python scripts based on ArcGIS arcpy.
- Calculated transportation time cost of Police and Fire stations to different blocks based on a raster road network by creating python scripts.
- Estimated population change through time by creating python scripts of dasymetric mapping.

Independent Researcher

Geography Department, the George Washington University March 2016 - May 2016

research: The relationship between NTD (Neural tube defect) based newborn defects and geographic environment in Hainan, China.

- Visualized data of NTD distribution in Hainan Island.
- Processed spatial statistic of OLS Regression and GWR (Geographic Weighted Regression) to NTD and other geographic data.

Course Projects

Department of Geography and Geoinformation Science, the George Mason University

Project: A Web Application of Geospatially Visualization for Fatal Traffic Crashes in Washington D.C. (cooperation) Autumn 2015

- Created the fatal traffic database and preprocessed data by PGAdmin and QGIS.
- Connected database to website through GeoServer and realized website Query function.

Part-time Research Assistant

Geography Department, the George Washington University March 2016 - May 2016

- Orthorectified remote sensing images of cities in Accra under supervision of 'Center for Urban and Environment' in GW Geography department.

TEACHING EXPERIENCE

Teaching Assistant

GEOG 6309/4309 GIS for Emergency Management Fall 2020

PROFESSIONAL EXPERIENCE

Short term consultant (GIS Analyst, Research Assistant)

World Bank Development Economics Research Group (DECGR), Energy and Environment Washington D.C. September 2016 - June 2018

Contributed to working paper: "Roads and the geography of economic activities in Mexico", "Highway Politics in a Divided Government: Evidence from Mexico" and etc.

- Conducted the data collection by GIS software to do road network classification and visualization for many countries like Brazil, Mexico and etc.
- Processed spatial analysis including Network Analysis on market access based on collected data.
- Assisted with statistic and integrate road related Excel data by Python pandas and batch processing road shapefile data by Python arcpy.

Data visualization Internship

Hip Consult Inc, Washington D.C.

March2016 - August2016

- Searched and gathered information from published fiber optic news.
- Used GIS network analysis method to update fiber optic network, which include topology check and digitization.
- Visualized fiber network and SQL to update fiber database through CartoDB.

AWARDS

Third-class Scholarship from 2010 to 2011, 2012 to 2013, 2013 to 2014

LANGUAGES

Chinese (native)

English (oral and written fluency)

COMPETITIVE SKILLS

GIS Application: Excellent in ArcGIS desktop usage, such as basic GIS producing and processing, spatial analysis, Geostatistics, model builder and 3D analysis toolset; Open source GIS software usage experience.

Remote Sensing: Experienced with the whole workflow of image processing.

Python: Be able to accomplish batch file processing using Python script and good at Arcpy and Pandas package

R: Be able to process basic manipulations on CSV or Excel table and good at spatial analysis.

Web based GIS: familiar with backend data processing by using PostGIS and connecting them to GeoServer to publish.

Database: familiar with spatial database structuring and modeling in PostgreSQL as well as query and spatial query.

Others: General research skills.