Huihai Wang

+1-626-491-6629 | hwang164@binghamton.edu | https://huihaiw.github.io/

EDUCATION

Binghamton University, Department of Geography **Sep. 2018-Present**
Degree: Master of Art in Geography
Overall GPA: 3.6/4.0

Wuhan University of Technology, School of Resources and Environmental Engineering **Sep. 2013-Jun. 2018**
Degree: Bachelor of Science in Geographic Information Science
Overall GPA: 3.5/4.0

RESEARCH INTERESTS

- GeoAI and Smart City
- Urban Planning
- Computer Vision
- Big Geospatial Data Analytics

RESEARCH EXPERIENCE

Oct.2019 – Jun.2020 **Sidewalk anomaly detection using mobile phone in-built sensors**
Supervisor: *Prof. Chengbin Deng*

- Developed a computational framework for automated sidewalk condition evaluation (ASCE). It takes the advantage of vibration signals from built-in mobile sensors through crowdsourcing scooters. Acceleration signals and GPS signals are used to detect sidewalk anomaly.
- Built an algorithm to detect sidewalk anomalies. Including data reorientation, peak detection, data smoothing and pattern matching. (***Python***)
- Completed a paper in this topic as a co-author. The paper is submitted to Computers Environment And Urban System in Jun.2020, and is under review.

Aug.2019 - Present **Hight Spatial Resolution NTL Map Prediction**
Supervisor: *Prof. Chengbin Deng*

- Proposed an approach to create NTL map with high spatial resolution (180m, 60m, 30m) based on light pole and land use information extracted from Google Street View (GSV) using Deep Learning
- Built a deep learning model (VGG16) to classify GSV to different land use types; Built a deep learning model (YOLOv3) to extract light pole from GSV. (***Python and Tensorflow***)
- Prepared a paper for this project as first author.

Aug.2019 – Dec.2019 **Quantify walkability with publicly available data**
Supervisor: *Prof. Chengbin Deng*

- Proposed a computational framework for walkability measurement. The framework includes

three major steps: web scraping of publicly available online data, determining varying weights of variables, and generating a synthetic walkability index

- Completed a paper on this topic as a co-author. The paper has been published in International Journal of Geo-Information.

Mar.2015 - Mar.2016 **Construction of Water Quota Management System for Electrical and Electronic Industry**
Supervisor: *Prof. Yanbin Yuan*

- Developed a online system to collect water information and supervise industry water usage. (***C++ and SQL)***

Dec.2014 – Dec.2015 **Water Usage Quota Revision Work in Part of Wuhan's Industry**
Supervisor: *Prof. Yanbin Yuan*

- Participated in water information collection work of electrical and electronic industry, food manufacturing industry and office building in Wuhan;
- Processed the data information and accomplished the standard calculation.

PROFESSIONAL EXPERIENCE

Aug.2019 – May.2020 **Teaching assistant, Department of Geography, Binghamton University**
Supervisor: *Prof. Chengbin Deng*

- GEOG 532/465 Remote Sensing And GIS
- GEOG 536 Land Use Analysis
- GEOG 505 Raster GIS

Aug.2020 - Present **Teaching assistant, Department of Geography, Binghamton University**
Supervisor: *Prof. Mark E. Reisinger*

- GEOG 151 World Regional Geography

Jun.2020 - Present **Graduate research assistant, Johnson City Redevelopment Lab, Department of Geography, Binghamton University**
Supervisor: *Prof. John W. Frazier*

- Helped design sidewalk anomaly detection project and developed algorithm to detect sidewalk anomalies from acceleration signals of mobile phones.
- Vegetation condition evaluation based on information extracted from street videos. Created vegetation condition map at street segments level for Johnson City.

Aug.2019 – Present **Graduate research assistant, Global Environmental Monitoring and Analytics (GEMA) Lab, Department of Geography, Binghamton University**
Supervisor: *Prof. Chengbin Deng*

- Designed the High Spatial Resolution Nighttime Light Creation Project. Trained deep learning models for light pole extraction and land use classification. ***(Python, Tensorflow, Keras)***
- Developed a computational framework for automated sidewalk condition evaluation

(ASCE). Built sidewalk anomaly detection algorithm and Compared different experiment settings that affect sidewalk quality assessment, and applied it to an entire university campus. ***(Python)***

PUBLICATIONS

- Deng, C., Dong, X., **Wang, H.**, Lin, W., Wen, H., Frazier, J., ... & Holmes, L. (2020). A Data-Driven Framework for Walkability Measurement with Open Data: A Case Study of Triple Cities, New York. ISPRS International Journal of Geo-Information, 9(1), 36.
- Deng, C., **Wang, H.**, Jin, A. (under review). Mobile crowdsensing for automated sidewalk condition evaluation: An illustration for urban form measurement. *Computers Environment And Urban System. (Submitted in Jun. 2020)*

SCHOLARSHIPS & AWARDS

2019	FIRST PLACE-GRADUATE, Fifth Annual GIS Day Student Poster Competition, Binghamton University
2019	People's Choice Award, Fifth Annual GIS Day, Student Poster Competition, Binghamton University
2015	Merit Student, Wuhan University of Technology
2015	Second Prize of School Scholarship, Wuhan University of Technology
2014	Bozhulixue Scholarship (First Class), Wuhan University of Technology