Anran Zheng

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EDUCATION

University of Pennsylvania *Philadelphia, PA*

Master of Urban Spatial Analytics | Stuart Weitzman School of Design *May 2022 (Expected)*

- **GPA**: 3.94/4, Relevant Coursework: Statistics, Python, R, JavaScript, SQL, GIS, Remote Sensing, Machine Learning, Deep Learning, Transportation Planning

Capital Normal University *Beijing, China*

Bachelor of Science in GIS | College of Geospatial Information Science and Technology *Jun 2021*

- **GPA**: 3.92/4, Rank 1/43 (First-class scholarship, Outstanding Graduate Award)

Northern Illinois University *Dekalb, IL*

Bachelor of Science in Geography | Department of Geographic and Atmospheric Science *Aug 2021*

- **GPA**: 3.95/4, Rank Top 1% (Summa Cum Laude)

PUBLICATIONS

- **Zheng, A.**; Wang, T.; Li, X. Spatiotemporal Characteristics and Risk Factors of the COVID-19 Pandemic in New York State: Implication of Future Policies. ISPRS Int. J. Geo-Inf. 2021, 10, 627. https://doi.org/10.3390/ijgi10090627

RESEARCH EXPERIENCE

University of Pennsylvania *Aug 2021 – present*

Master Candidate

- Established several prediction models using machine learning algorithms, which can predict the future bikeshare trips, overdose distribution and house price based on the open-source data with R and Python.
- Built a data pipeline and a web-based dashboard showing the real-time and historical COVID-19 situation in NYC to communicate the analysis and recommendations to local health department officials.
- Performed sentiment, machine learning and spatial analysis of thousands of tweets from Twitter with Python to understand how people's altitude change towards COVID-19 vaccine.
- Proposed a framework for the measurement of spatial accessibility to COVID-19 testing sites in NYC with GIS, and identified the potential factors that can explain the spatial disparities of accessibility using Python.

Digital Terrain Analysis *Jul 2021 – Aug 2021*

Summer Research Assistant at Capital Normal University

- Performed digital terrain data collection, documentation, and analysis in QGIS and GRASS.
- Completed 12 professional step-by-step laboratory reports, including the least cost path, point cloud classification, hydrological analysis, etc.

Spatiotemporal transmission pattern of COVID-19 in New York *Sep 2020 – Jun 2021*

Leader of Capital Normal University Geography Talent Development Program

- Conducted spatial autocorrelation and spatiotemporal scanning analysis to detect the COVID-19 clusters.
- Analyzed the factors influencing the COVID-19 spreading with Geodetector method.

Automatic lake extraction and classification in Tibet based on DEM data *Jan 2020 – May 2020*

Research Assistant in the Tibet Institute of Chinese Academy of Science

- Designed and implemented an automatic program, which can extract and classify the lakes in Tibet based on the DEM data with Arcpy and Python.

- Presented as a research poster on the Undergraduate Research Day and Artistry Event in NIU.

INTERNSHIPS

Piesat Information Technology Co., Ltd *Mar 2021 – Jun 2021*
Remote Sensing Engineer *Beijing, China*
- Participated in the national ecology protection project. Wrote, ran and updated the Java, C++ and Python algorithm of PIE-Engine, a remote sensing programming package.
- Processed massive remote sensing data with ERDAS and ArcGIS, and completed writing the user's manual.

Shenzhen Visiondom ESG Co., Ltd *Nov 2020 – Jan 2021*
GIS and Statistics Analyst *Beijing, China*
- Designed and established a water pollution simulation model of Yangtze River Delta region with ENVI and SPSS.
- Modelled the distribution pattern of urban residents of the Pearl Delta region with GIS and statistics methods.

Chinese Academy of Surveying and Mapping *Jul 2020 – Oct 2020*
GIS and Statistics Analyst *Beijing, China*
- Conducted spatial and statistics analysis on the land-use changing pattern of Hefei city during 2017-2019 in ArcGIS and the Pivot table in Excel.
- Vectorized, checked and repaired the topology errors from mangrove polygons of four provinces in ArcGIS.
- Analyzed the land use changing patterns of Yeyahu National Wetland Park within 8 years with SPSS, ArcGIS, ERDAS and advanced functions in Excel.
- Completed comprehensive research reports over 150 pages on the data analysis of Hefei City and Yeyahu.

TEACHING EXPERIENCES

Note-taker | Student Disabilities Services, University of Pennsylvania *Aug 2021 – Dec 2021*
- Assisted visual and hearing-impaired students take comprehensive class notes of four courses manually, and uploaded them on the Tutoring Center in a timely manner.

Teaching Assistant | College of GIST, Capital Normal University *Sep 2020 – Jul 2021*
- Taught Python and ArcGIS to about 70 sophomore students and tutored them to complete the assignments.
- Helped instructor prepare the teaching materials, designed the lab and graded assignments and exams.

SKILLS

- **Programming:** Python (e.g. scikit-learn, TensorFlow, GeoPandas, Plotly, carto, leaflet, OSMnx), R (e.g. tidyverse, leaflet, ggplot2, tidycensus), JavaScript (jQuery, bootstrap, Mapbox GL JS), CSS, HTML, SQL, C and C++.
- **Spatial Analysis:** ArcGIS (including ModelBuilder and arcpy module), QGIS, ArcGIS Pro, ENVI, ERDAS, Google Earth Engine, GeoDa, and SPSS.
- **Data Analytics:** Machine/Deep Learning, Google Cloud Computing, data wrangling, modelling and visualization.
- **Language Skills:** Mandarin (Native); English (Proficient).
- **Others:** Strong research, problem-solving and analytical skills; excellent time management, presentation and communications skills; proficient academic writing and leadership skills.