Hongtao Huang

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EDUCATION

Cornell University, College of Architecture, Art, and Planning, Ithaca, NY **Expected May 2025**
Master of Regional Planning, Minor in Real Estate, **GPA: 3.746**

Capital Normal University, College of Resource Environment and Tourism, Beijing, China **June 2023**
Bachelor of Science in Geographic Information Science, College Outstanding Graduate, **GPA: 4.26**

Northern Illinois University, Department of the Earth, Atmosphere and Environment, DeKalb, IL **May 2022**
Bachelor of Science in Geography, Minors in Computer Science and Statistics, Summa Cum Laude, Honors, **GPA: 3.975**

Selected Coursework: Geographic Measurement and Quantitative Analysis, Advanced Spatial Analysis, Interprofessionalism in Health Sciences, Economic and Community Development Workshop: Age-Friendly Planning, Remote Sensing and Modeling for Ecosystems, Mapping and Countermapping, Urban Theory, Methods for Spatial Economic and Demographic Analysis, Introduction to Urban Data Science, Public Budgeting, Finance and Analysis

SPECIALIZED SKILLS

Software: ArcGIS Pro, QGIS, STATA, Geoda, Geodetector, Google Earth Engine, SPSS, Excel, ENVI
Programming Languages: Python, SQL, JavaScript, R, C++, C#, IBM Mainframe Z/OS, Html
General Skills: Windows Maintenance, User-level Knowledge of Unix Systems, Microsoft Office, Relational Databases
Certification: Responsible Conduct of Research: Human Subjects Research (IRB) Training, CITI Program

WORK EXPERIENCE

Student Research Assistant (M. Warner Lab), *Cornell University*, Ithaca, NY **Oct 2023-Current**
- Analysis and visualize the data from the 2023 Age-Friendly Communities Survey.
- Conducted descriptive statistical analysis on comprehensive plan focus areas like needs of families with children, seniors, school siting, women, and public health across U.S. communities.
- Performed regression analysis to identify factors influencing comprehensive plan focus, such as professionalism, civic engagement, socioeconomic conditions, and metro status.
- Analyzed differences in services and programs offered by communities with and without public health considerations in their comprehensive plans.
- Evaluated the prevalence of mobility services, joint use facilities, informal networks, and civic engagement activities based on public health focus.

Technical Assistant, *Northern Illinois University,* DeKalb, IL **Mar-Dec 2022**
Sustaining Illinois through Collaborative Governance -- A Pilot Study of Water Systems Governance in Northeast and North Central Illinois, funded by the Illinois Innovation Network.
- Developed data collection tools.
- Utilized data management skills, qualitative and quantitative analysis, including network analysis for studying collaborative governance of stormwater, drinking water, and wastewater systems in metropolitan Chicago with GIS data.

ACADEMIC PROJECTS

Cross-Agency Collaboration for Expanding Child Care Supply, *Cornell University*, Ithaca, NY **Sep 2023-Feb 2024**
- Conducted qualitative research through interviews with 8 child care experts across the U.S. to understand best practices.
- Analyzed data and technology needs for effective child care management systems in Tompkins County.
- Evaluated roles and communicated recommendations on training, mentorship, and support for child care providers.
- Explored innovative models like micro-centers through case studies to expand quality licensed child care supply.
- Synthesized findings and delivered recommendations on budgeting, stakeholder engagement, and implementation strategies.

Surveying and Monitoring of Ground Subsidence in Key Subsidence Areas in Chaoyang District and Tongzhou District, Beijing, *College of Resource Environment and Tourism*, Capital Normal University
Internship **May-Jul 2023**
- Collaborated with a team of 9 peers to conduct field surveys of ground subsidence in the study areas of Beijing.
- Analyzed and interpreted data from various geophysical instruments, including Stratagem EH-4, RAD-7 Radon Detector, AGI SuperSting™ Monitoring System, and CG-6 Autograv™ Gravity Meter, to assess ground subsidence patterns in the study areas.

Spatial Analysis of the Impact of Covid-19 on the Distribution of Property-Based Crime in the City of Chicago and Recommendations for Police Force Optimization, *College of Resource Environment and Tourism*, Capital Normal University
Undergraduate Thesis **Aug 2022-May 2023**

- Conducted a comprehensive spatial analysis of the impact of Covid-19 on property-based crime in Chicago using five crime types and six socioeconomic indicators.
- Identified statistically significant relationships between crime rates and socioeconomic factors, such as housing vacancy rates and unemployment rates.
- Developed a regression model to identify areas with high risk of property-based crime based on spatial autocorrelation and regression analysis.
- Generated recommendations for police force optimization based on the findings of the spatial analysis, including targeted deployment strategies and resource allocation.

The Correlation Between Autumn Groundwater Replenishment and Microgravity and Ground Subsidence in the Beijing-Tianjin-Hebei Urban Agglomeration, *College of Resource Environment and Tourism*, Capital Normal University

Internship   **Sep-Dec 2022**
- Estimated local groundwater extraction by collecting and inversely performing regional gravity data using a combination of RTK and gravimetry.
- Provided optimization recommendations for local water use and recharge strategies based on the groundwater level we performed, combined with the crop irrigation status collected by drones.

The Spatial Associations between Crime and Economy in Chicago 2015-2020, *Department of the Earth, Atmosphere and Environment*, Northern Illinois University

Independent Project   **Jan-May 2022**
- Self-learned from scratch and using GeoDetector.
- Conducted detailed correlation tests on the communities and analyzed the differences in the results by the different tools.

Potential Solar Panel Installation Areas on NIU Main Campus, *Department of the Earth, Atmosphere and Environment*, Northern Illinois University

Selected Coursework Project   **Aug-Dec 2021**

- Identified most suitable building roofs for solar panel installation using LiDAR data, solar radiation analysis, and GIS techniques.
- Calculated annual cumulative radiation intensity and potential capital savings for optimal installation areas.
- Conducted cost-benefit analysis and panel selection based on peak sun hours, photovoltaic conversion rates, and project lifespan.
- Recommended installation on Human Resources Center, Milan Township School, and Chessick Practice Center roofs for estimated multi-million dollar savings over 25 years.
- Demonstrated potential for universities to reduce greenhouse gas emissions and electricity costs through solar energy adoption.

LEADERSHIP & VOLUNTEERING EXPERIENCE
Tutor of the Transfer-to-Transfer Program, *Northern Illinois University,* DeKalb, IL   **Aug-Dec 2021**
- Identified and introduced various resources of the school to the transfer students and helped them with academic planning and adapting to the new environment.

Volunteer for Week of Welcome, *Northern Illinois University,* DeKalb, IL   **August 2021**
- Assisted freshmen in registering and distributing campus cards.
- Assisted in crowd management of the stadium during the opening ceremony.

Volunteer with local NGO, *Northern Illinois University,* DeKalb, IL   **Aug-Dec 2021**
- Assessed and promoted social media for The Sir Donald Foundation Inc.

MEMBERSHIPS
Member, Honors Community, *Northern Illinois University,* DeKalb, IL   **Mar 2021-May 2022**
Member, NIU Fencing Club, *Northern Illinois University,* DeKalb, IL   **Aug 2021-May 2022**
Member, University Concert Choir, *Northern Illinois University,* DeKalb, IL   **Jan-May 2022**

HONORS/AWARDS
College Outstanding Graduates, *Capital Normal University,* Beijing, China   **June 2023**
College Overall Second Place Scholarship, *Capital Normal University,* Beijing, China   **November 11th, 2022**
John Hartmann Annual Prize, *Northern Illinois University,* DeKalb, IL   **May 4th, 2022**
Baccalaureate Degree with Full University Honors, *Northern Illinois University,* DeKalb, IL   **April 24th, 2022**
Dean's List, *Northern Illinois University,* DeKalb, IL   **Aug 2020-May 2022**