

YUYE ZHOU

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Research Interest

Climate Change Adaptation; Environmental health; Environmental justice;
Explainable Machine Learning; Geo-AI; GIS; Remote sensing; Social Sensing

Education

Nanjing University (U.S. News 123#; Major: Times THE Ranking A+) Nanjing, China

Master in Urban Planning (Specialization in GIS) *September 2021 -Expected June 2024*

- **Lab:** Smart City and Digital Planning Lab, School of Architecture and Urban Planning **GPA: 3.80/4.0** (3/27)
- **Thesis:** Neighborhood and policy impacts on sentiment alterations in response to public health emergencies using social media data and explainable machine learning

Zhejiang University (U.S. News 93#; QS 44#; Top 3 in China) Hangzhou, China

B. Eng. in Urban Planning, Highest Distinction *minor in Law* *June 2021*

- **Curriculum GPA:** 3.80/4.0 **Urban Planning Major-GPA:** 3.87/4.0 **Ranked:** 2/25
- **Thesis:** Integrating SCS-CN and GIS methods for flood resilience assessment based on P-S-R theory

University of California, Los Angeles California

Summer School *July-September 2019*

- **Coursework:** Urban planning and policy, Urban data analysis **GPA:4.0/4.0**

Publications

- Liang L*, Daniels J., Biancardi M., **Zhou Y.**. Reconstructing Aerosol Optical Depth Data Using Spatio-temporal LSTM Convolutional Autoencoder. *Scientific Data*. 2023.(Accepted for publication, IF: 8.501)
- **Zhou Y.**, Xu J.*, et al. Spatial-Temporal Pattern Evolution of Public Sentiment Responses to the COVID-19 Pandemic in Small Cities of China: A Case Study Based on Social Media Data Analysis. *International Journal of Environmental Research and Public Health*. 2022; 19(18):11306.
<https://doi.org/10.3390/ijerph191811306>
- **Zhou Y.**, Wang Y., Xu J.*. Scenario Simulation of Compound Flood Risk Based on Climate Resilience —— A Case Study of the Yangtze River Delta, China. *58th World Planning Congress(Brussels)*. 2022.10.
- Wang Y., Xu J.*, Liu D., **Zhou Y.**. Analysis and Comparison of the Industrial Economic Resilience in the Taihu Lake Basin under the 2008 Financial Crisis and the 2018 Sino-US Trade War. *Land*. 2023; 12, 481.
<https://doi.org/10.3390/land12020481>
- Huang L., Tong C., **Zhou Y.**, et al. Evaluation of Resilience of medical facilities in Hangzhou based on AHP-CRITIC and Matter-Element Analysis. *Proceedings of 2021 Annual Meeting of Urban Planning Association of China (01)*. 2021:13, pp.226-238. [doi: 10.26914/c.cnkihy.2021.023987](https://doi.org/10.26914/c.cnkihy.2021.023987) (In Chinese)
- **Zhou Y.**, Li Y., Wang Y., Empirical Research on Innovation Cluster Area Planning Based on Collaborative Innovation Theory, *Urban and Regional Planning*. 2019, 4(4), pp. 152-161.
<https://doi.org/10.11648/j.urp.20190404.14>

Working Paper

- **Zhou Y.,** Wang Y., Ju Yang.*, Liang L et al. The Effect of Socioeconomic and Built-environment Factors on Subjective Well-being During the COVID-19 Pandemic: New Evidence Using Social sensing and Explainable Artificial Intelligence. (**Project leader**, Working with **Dr. Ju Yang**, and Dr. Liang Lu, In Submission)

Research Projects (Selected)

Graduate Research Assistant | Smart City and Digital Planning Lab **Nanjing University, 2021-Present**
Working with: Prof. **Xu Jiangang**(PI), Dr. **Ju Yang**; Funded by: NSFC 52178043 (¥600,000)

- **Climate Change Adaptation & Flood Resilience (Continuation of the undergraduate thesis)**
- **Flood Simulation under Climate Change:** Conducted scenario simulations (SSPs - 126,245,370,585) of flood risk zone in the Yangtze River Delta, leveraging the SCS-CN model and future CMIP6 climate change projections.
- **Flood Resilience Modeling:** Developed and refined a flood resilience predictive model under varying climate change scenarios using the **BP neural network**, achieving over 90% accuracy in certain scenarios.
- **Environmental Health & Social Sensing during the COVID-19 Pandemic (Master Thesis)**
- Conducted an **explainable AI model** to investigate the association between **socioeconomic and built-environment factors**, and **subjective well-being**(SWB) of residents under the COVID-19 Pandemic.
- Utilized a natural language processing model BERT to drive sentiment scores from over 1 million **geotagged social media data** to analyze the spatiotemporal variations of SWB scores.

Graduate Research Assistant | Geospatial 3M(Monitoring, Mapping and Modeling) Lab

Working with Prof. **Liang Lu**

CA, July 2023-Present

- **Atmospheric Pollution Data Validation:** Leveraged AERONET ground-truth data to validate Texas daily atmospheric AOD predictions derived from the LSTM model using python coding and ArcGIS. This work contributes to a research paper accepted to be published in "*Scientific Data*".
- **Agricultural Irrigation Monitoring Project:** Participated in field surveys and round-table discussions, joining local agricultural experts in hands-on research on agricultural irrigation practices in Southern California. Engaged in dialogues with local water department and USGS experts. (Funded by **USGS**)

Group Leader | Zhejiang Uni - Cambridge Collaborative Program

University of Cambridge

Cambridge - ZJU Urban Regeneration 4.0 Research Programme

London, Jan.-Mar. 2019

- Conducted field research on London's city regeneration projects and systematically reviewed relevant literature.
- Authored a research report on the landscape updating design of King's Cross station; secured First Prize in the program's final presentation.

Teaching Experience

Teaching Assistant | School of Architecture and Urban Planning

Nanjing University

- **Architecture and Planning Technology II (Spring 2023, Undergraduate Experimental Course)**
- Spatial data collection and analysis using **Python, GIS, and R**; Module lessons, lectures + labs
- **Head TA:** Lab tutor, Reader, Grader

- **Digital Urban Planning (Spring 2022/2023, Undergraduate)**
- Urban data analysis and digital planning based on **ArcGIS, AutoCAD, SketchUp, Photoshop**
- **Head TA:** Lab tutor, Reader, Grader

Working Experience

Assistant Hydrologist | Urban Planning Institute of NJU **Nanjing, July 2021 - Present**

- **Flood Simulation:** Conducted hands-on **field research** and authored corresponding reports; Utilized **SCS-CN and SWMM** for flood risk area identification in a coastal mountain town in Southeast China.
- **Sponge City Planning:** Assisted with blue&green infrastructure planning, supporting the proposal of flood adaptation strategies based on low-impact development(LID) and nature-based solutions.

Assistant Urban Planner | Urban Planning Institute of ZJU **Hangzhou, July 2020 - Feb.2021**

- **Urban Design of Green Town:** Assisted with site analysis and planning; Explored how to empower innovative zones in the post-COVID-19 era with new techs of industrial IoT and smart cities.
- **Ecological Suitability Evaluation:** Conducted ecological sensitivity and construction suitability assessments for villages and towns in the mountainous regions of Xinaju, Zhejiang Province.

Real Estate Analyst | China Merchants Property Development **Hangzhou, Mar. - July 2021**

- Participated in investment calculation of commercial real estate projects, mainly responsible for regional and city planning analysis, investment map update, customer orientation and competitive product analysis.

Village Planner | Tongren Township Government Planning Bureau **Guizhou, Sep. - Dec. 2019**

- **Industry Planning:** Focused on tourism industry development and route planning to boost the economy in impoverished mountainous areas.
- **Elementary School Enhancement Project:** Led planning initiatives to upgrade local elementary schools, addressing disparities in educational resources and opportunities in the region.

Conference Oral Presentations (First Author)

- Neighborhood Effects on Public Sentiment: A Case Study Based on ChatGPT and Interpretable neural networks. Global Smart Cities Summit cum The 3rd International Conference on Urban Informatics (GSCS & ICUI 2023), **Hong Kong**, 20-23 August 2023. **Best Presentation Award.**
- Policy Impacts on Public Sentiment under Public Health Emergencies : A Causal Inference Study based on NLP & Social Media Data. American Association of Geographers(**AAG Annual conference (Mar. 2023, Denver, U.S.**; session "Symposium on Geospatial Approaches to Pressing Grand Challenges: Global Pandemics, Climate Change, and Food Security: COVID-19 in Cities: Transmission, Infection and Response")
- **Invited Presentation on Monthly Webinars on Spatiotemporal Innovation**, Sponsored by: Future data lab of Harvard University, Criminal Justice Data Analytics Lab of TAMU, Invited by: Prof. Ye Xinyue, TAMU.
- Scenario Simulation of Compound Flood Risk Based on Climate Resilience —— A Case Study of the Yangtze River Delta. **The 58th ISOCARP World Planning Congress (Sep. 2022, Brussels)**, Track2: Healthy Planet
- Spatial-Temporal Pattern Evolution of Public Sentiment Responses to the COVID-19 Pandemic in Small Cities of China: A Case Study Based on Social Media Data Analysis. **The 2nd Workshop of Asian Young Geographers (Dec. 2022, Nanjing)**
- Annual Conference of International Association for China Planning (**IACP 2021 Nanjing; 2022 Wuhan**)

Awards and Scholarships (Selected)

- **2023 First Prize, Chengyuan Cup: Urban Data Analytics Model Competition (Project Leader, 1/4)**
- **2022 National Scholarship (top 1%), National Ministry of Education, ¥ 20,000**
- **2022, 2021 First-class Academic Scholarship (top 5%), Nanjing University, ¥ 12000 *2**
- **2022 Excellence Award, "Sharing Cup" College Students Science and Technology Data Analytic Innovation Competition, National Population Health Science Data Center (Project Leader, 1/5)**
- **2021 National Bronze Medal, College Student "Internet+" Innovation and Entrepreneurship Competition (2/7)**
- **2021 Nomination Awards (top10%) of WUPEN International Competition of Urban Design (UNESCO, 1/2)**
- **2021 Outstanding Graduate Honor(top 1%), Zhejiang Province**
- **2021 Outstanding Graduate Honor(top 5%), Zhejiang University**
- **2018,2019,2020 Outstanding Student Leader Awards(top 5%), Zhejiang University**
- **2017,2018,2019,2020 Outstanding Student Scholarship, Zhejiang University, ¥ 5000/year**
- **2020 Excellent Social Work Awards, Zhejiang University**
- **2019 Sophia Yang Scholarship(top 5%), Zhejiang University, ¥ 5000**

Leadership Experience

- **2022-2023 Vice Director of Student Innovation and Entrepreneurship Center of Nanjing University**
- **2021-2022 Officer of Career Development Centre, School of Architecture and Urban Planning, NJU**
- **2021-2023 Member of AI(Artificial Intelligence) club of Nanjing University**
- **2020-2021 Vice Chair of Department of Communication of AI club of Zhejiang University**
- **2019-2020 President of Urban Planning Student Society of Zhejiang University**

Volunteer Experience

- **Contributed 100+ hours** during undergraduate studies and **70+ hours** during graduate studies to volunteering.
- **Community Support Volunteer during COVID-19:**
- **Assisted in epidemic prevention in low-income communities of Nanjing, helped coordinate nucleic acid testing, and aided in the distribution of essential supplies and medications.**
- **Workshop Facilitator, "Small Future City Planner":**
- **Organized a workshop for elementary school students in a low-income community in Nanjing, introducing them to smart city technologies and fostering their imagination of future cities through art.**
- **Undergraduate Mentor, School of Architecture and Engineering, Nanjing University:**
- **Provided mentorship in academic areas and career guidance to undergraduate students.**
- **Conference Volunteer:**
- **Supported organizational duties at major conferences, including the National Ecology Conference of China, the National Smart City Conference of China, and the Nanjing University Overseas Alumni Conference.**

Skills

- **Applicable Skills: ArcGIS** (Proficient, 2-year TA experience), **Python/R** - data analysis(Proficient), Microsoft Office(Word, Excel, PowerPoint, **Fluent**), Envi, Citespace, Photoshop, Auto CAD, Sketchup...
- **Data analytics: GeoAI** - Machine Learning/Deep learning/ANN(NLP-BERT/GPT/Dictionary-based; BP/CNN/Computer Vision), **Urban Analytics** - Spatial data analysis and modelling (Community-engaged), **Geographic information system**(ArcGIS/QGIS/Pro), **Causal Inference**(RDD/DID based on R), etc.
- **Language:** Mandarin (native), English (**IELTS-8.0/9**)