

# YUYE ZHOU

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## RESEARCH INTEREST

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Environmental Justice; Climate Change adaptation and mitigation; Sustainable Development;  
Machine Learning; Explainable AI; Remote Sensing; Social Sensing; GIS

## EDUCATION

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Nanjing University

Nanjing, China

*Master in Urban Planning* (Specialization in GIS)

*September 2021 -Expected June 2024*

- **GPA:** 3.93/4.0      Ranking: 3/27
- **Thesis:** 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

Zhejiang University

Hangzhou, China

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

*June 2021*

- **GPA:** 3.80/4.0      Ranking: 2/25
- **Thesis:** Integrating SCS-CN and GIS Methods for Flood Resilience Assessment Based on P-S-R Theory

## PUBLICATIONS

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- Liang L.\*, Daniels J., Biancardi M., **Zhou Y.**. Reconstructing aerosol optical depth using spatiotemporal Long Short-Term Memory. *Scientific Data*. 2023; 10(1), 842. <https://doi.org/10.1038/s41597-023-02696-w>
- 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>
- **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.
- 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.**, Ju Y.\*, 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. (In Submission)

## RESEARCH EXPERIENCE

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### Graduate Research Assistant | Smart City and Digital Planning Lab

Nanjing University

Advisors: [Prof. Jiangang Xu](#) (PI), [Prof. Yang Ju](#)

Nanjing, July 2021-Present

Funded by: National Natural Science Foundation of China (¥ 630,000)

#### Climate Change Adaptation & Flood Resilience

- **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 & Subjective well-being

- 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 Lab

University of California, Berkeley

Advisor: [Prof. Lu Liang](#)

California, 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)

### Summer Research | Luskin School of Public Affairs

University of California, Los Angeles

Advisor: Dr. **Fernanda Jahn-Verri**

California, July-Oct. 2019

- Assisted statistically analyzing the behavior and spatial-temporal distribution of the homeless at Santa Monica
- Took the course-Urban planning and policy, and learn about the history of urban planning in the U.S.

### Group Leader | Urban Regeneration 4.0 Research Program

University of Cambridge

Cambridge - Zhejiang University Collaborative Program

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

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### Teaching Assistant | School of Architecture and Urban Planning

Nanjing University

#### Architecture and Planning Technology II

Spring 2023

- Spatial data collection and analysis using **Python, GIS, and R**; Module lessons, lectures + labs
- **Head TA:** Lab tutor, Grader

#### Digital Urban Planning

Spring 2022 - 2023

- Urban data analysis and digital planning based on **ArcGIS**, AutoCAD, SketchUp, Photoshop
- **Head TA:** Lab tutor, Grader, Discussion instructor

## WORKING EXPERIENCE

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### Assistant Hydrologist | Urban Planning Institute of Nanjing University 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.

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

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

### Assistant Urban Planner | Urban Planning Institute of Zhejiang University 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.

### 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.

## PRESENTATIONS AND POSTERS

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- **Oral Presentation:** Disentangling the Associations between Socio-Environmental Dynamics and Urban Expressed Sentiment during a Global Pandemic. International Conference on Urban Science and Sustainability, **December 2023, Xiamen.**
- **Oral Presentation:** 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, **August 2023, Hong Kong. Best Presentation Award (Presented by: Michael Batty).**
- **Oral Presentation:** 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, **March 2023, Denver.**
- **Invited Presentation on Monthly Webinars on Spatiotemporal Innovation:** Sponsored by: Future data lab of Harvard University, Criminal Justice Data Analytics Lab, Invited by: Prof. Ye Xinyue, TAMU, **May 2023, Virtual.**
- **Oral Presentation:** 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, **December 2022, Nanjing.**
- **Oral Presentation:** Scenario Simulation of Compound Flood Risk Based on Climate Resilience —— A Case Study of the Yangtze River Delta. The 58<sup>th</sup> ISOCARP World Planning Congress, **September 2022, Brussels.**
- **Oral Presentation:** Evaluation of Resilience of medical facilities in Hangzhou based on AHP-CRITIC and Matter-Element Analysis. Annual Conference of International Association for China Planning (IACP), **October 2021, Wuhan.**

## SCHOLARSHIPS

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- **2022 National Scholarship (top 1%), National Ministry of Education, ¥ 20,000**
- **2021, 2022, 2023 First-class Academic Scholarship (top 5%), Nanjing University, ¥ 12000 \*3**
- **2021 Outstanding Graduate Honor (top 1%), Zhejiang University**
- 2017, 2018, 2019, 2020 Outstanding Student Scholarship, Zhejiang University, ¥ 5000/year
- 2019 Sophia Yang Scholarship (top 5%), Zhejiang University, ¥ 5000

## AWARDS

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- **2023 First Prize**, Chengyuan Cup: Urban Data Analytics Model Competition (Project Leader, 1/4)
- **2023 Outstanding Student Award**, Urban Science and Sustainability (USS) Winter School, Xiamen
- **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)
- 2018, 2019, 2020 Outstanding Student Leader Awards(top 5%), Zhejiang University
- 2020 Excellent Social Work Awards, Zhejiang University

## LEADERSHIP EXPERIENCE

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- 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

## SERVICES

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### 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 Organizer, "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 Peer Mentor, 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

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- **Programming & Modeling:** Python, R, Git, Machine learning, Deep learning - Natural language processing (BERT), Computer vision, Explainable machine learning (SHAP), Causal Inference (DID, RDD)
- **Geographic information systems:** ArcGIS, QGIS, ENVI, Google Earth Engine, Python - Geopandas
- **Design & Visualization:** AutoCAD, SketchUp, Adobe Photoshop, Illustrator, Lumion, Python - Matplotlib
- **Language:** Chinese - Mandarin (native), English (IELTS-8.0/9)