

EDUCATION

Southeast University, China	MEng, Landscape Architecture	09/2022-Present
□ Average score: 90.88/100 (Rank: 2/28)		
□ Thesis: “An ecosystem services-based framework for land use assessment in urban scenic area buffer zones”		
Southeast University, China	BEng, Landscape Architecture	09/2017-06/2022
□ Average score: 89.29/100 (Rank: 4/28)		
□ Thesis (Score: 93/100, Outstanding Thesis/Design Award – School of Architecture): “An examination of factors influencing urban residents’ transport-related carbon emissions in the dual-carbon context”		

PUBLICATIONS

(Accepted; * indicates corresponding author)

Journal Articles

- [1] **Xu, Y.**, & Tang, J. (2024). Examining the rationality of Giant Panda National Park's zoning designations and management measures for habitat conservation: Insights from interpretable machine learning methods. *Science of The Total Environment* (JCR Q1, IF=9.8), 170955. doi: <https://doi.org/10.1016/j.scitotenv.2024.170955>
- [2] Ma, X. (Advisor), **Xu, Y.***, Pan, M., & Jiang, K. (2024). Rethinking public service facility distribution and management strategies with the consideration of carbon peak - Insights from Suzhou, China. *Journal of Cleaner Production* (JCR Q1, IF=9.7), 143070. doi: <https://doi.org/10.1016/j.jclepro.2024.143070>
- [3] Rui, J., **Xu, Y.**, & Li, X. (2024). Destigmatizing urban villages by examining their attractiveness: Quantification evidence from Shenzhen. *Habitat International* (JCR Q1, IF=6.8), 150, 103120. doi: <https://doi.org/10.1016/j.habitatint.2024.103120>
- [4] Rui, J., & **Xu, Y.** (2024). Beyond built environment: Unveiling the interplay of streetscape perceptions and cycling behavior. *Sustainable Cities and Society* (JCR Q1, IF=11.7), 109, 105525. doi: <https://doi.org/10.1016/j.scs.2024.105525>
- [5] Yuan, Y., Gan, Y., **Xu, Y.**, Xie, Q., Shen, Y., & Yin, Y. (2022). SWMM-based assessment of urban mountain stormwater management effects under different LID scenarios. *Water* (JCR Q2, IF=3.4), 14(1), 78. doi: <https://doi.org/10.3390/w14010078>

Conference Articles

- [6] **Xu, Y.**, & Ma, X. (2024). Assessing Urban Street Vitality Through Visual and Auditory Perception: A Case Study of Historic urban area in Guangzhou, China. *The International Review for Spatial Planning and Sustainable Development* (SCOPUS, ESCI and EI retrieval), Accepted.
- [7] **Xu, Y.**, Ma, X., Pan, M., & Jiang, K. (2022). A two-stage simulation approach of urban transport emission evaluation towards carbon peak: A case study in Suzhou, China. *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences* (EI retrieval), 10, 285-292. doi: <https://doi.org/10.5194/isprs-annals-X-4-W3-2022-285-2022>

(Works in progress)

[8] **Xu, Y.**, Chen, C., Deng, W., Dai, L., & Yang, T. Spatial eco-socio-economic trade-offs inform differentiated management strategies in mega-urban agglomerations. Submitted.

[9] **Xu, Y.**, Tang, J., & Zhuang., X. Urban edges, conservation frontiers: Buffer zone planning and management around urban protected areas - Insights from Chinese national-level scenic areas. Submitted.

[10] Rui, J., **Xu, Y.**, Cai, C., & Li, X. Citywalks as part of urban tourism: Synthesizing online review data to illustrate urban features. *Tourism Management*, Revision.

RESEARCH EXPERIENCES

Research Assistant, The University of Hong Kong

04/2024-Present

Advisor: Prof. Tianren Yang, Department of Urban Planning and Design

- Spatial eco-socio-economic trade-offs inform differentiated management strategies in urban agglomerations^[8]
 - Proposed a framework based on production possibility frontiers to assess eco-socio-economic efficiency and ecosystem service value improvement potential of mega-urban agglomerations
 - Utilized the InVEST model and high-resolution location-based service data to calculate ecosystem service supply and demand
 - Conducted zonal clustering based on k-means and fitted the production possibility frontiers to explore trade-offs between ecosystem service value and socio-economic well-being of different zones
 - Provided strategic recommendations for regional development, eco-economic coordination, ecological protection and restoration, and payment for ecosystem services policies

Graduate Researcher, Southeast University

09/2022-Present

Advisor: Prof. Jun Tang, Department of Landscape Architecture

- Interpretable machine learning illuminates national park zoning and management^[1]
 - Constructed a species distribution model using the Random Forest algorithm and multi-source big data
 - Applied interpretable machine learning methods, including one-way partial dependence plots (PDPs), two-way PDPs, and the Shapley Additive exPlanations (SHAP), to reveal the impact mechanisms of environmental and anthropogenic factors on giant panda habitat (GPH) distribution
 - Utilized overlay analysis to assess the rationality of current national park boundaries in protecting GPH and identify areas of conflict between human settlements and GPH exists through overlay analysis
- Comprehensive review of buffer zone planning documents helps identify knowledge gaps and opportunities^[9]
 - Systematically reviewed the buffer zone planning documents for Chinese urban scenic areas
 - Employed natural language processing methods to categorize management strategies in extensive buffer zone planning texts
 - Identified key knowledge gaps in buffer zone planning and proposed opportunities to address them using the ecosystem service framework and advanced artificial techniques

Workshop Participant, DigitalFUTURES2024, Tongji University

06/2024-07/2024

Advisor: Prof. Jiawei Yao, Department of Architecture

- GAN modeling and multimodal data enable prediction of the carbon-pollution-heat synergy index (Ongoing)
 - Developed a multimodal training dataset integrating satellite imagery and tabular data for carbon emissions, environmental pollution, and land surface temperature in Greater London
 - Applied a generative adversarial network (CGAN) model to predict carbon-pollution-heat synergy index

- Conducted multi-objective optimization incorporating the distribution of vulnerable populations to identify priority areas for environmental policy implementation

Independent Projects

03/2023-06/2024

Collaborators: Jin Rui, Technical University Dortmund; Xiang Li, The University of Hong Kong

- Quantifying the attractiveness of urban villages helps destigmatize them^[3]
 - Conceptualized a framework based on the behavior-space interaction theory to provide quantitative evidence for the destigmatization of urban villages
 - Offered recommendations for urban village destigmatization, focusing on village environmental design, job-housing structure and layout, and government policies
- Interplay between cycling behavior, streetscape perception, and built environment guides street innovations^[4]
 - Collected millions of shared-cycling data points and used the NetworkX library in Python to fit the shortest road network paths based on origin-destination pairs
 - Utilized K-means clustering and random sampling to better represent the characteristics of over 110,000 street view images, followed by predictions with XGBoost
 - Integrated different regression models to unveil the nonlinear spatial interdependencies between streetscape perception, built environment characteristics, and bicycle-sharing volume
 - Identified priorities for street renovations to create cycling-friendly streets

Research Assistant, Southeast University

11/2021-12/2023

Advisor: Prof. Xiaosu Ma, Department of Urban Planning

Funded by "The 14th Five-Year Plan" National Key Research and Development Program of China "Urban Regeneration Design Theory and Methodology" (2022YFC3800302)

- Exploring factors influencing transport-related carbon emissions informs planning and policy decisions^{[2][7]}
 - Identified the uncertainties in achieving transport-related carbon peak through a two-stage simulation, including multi-scenario sensitivity analysis and link-based carbon emission estimation
 - Built a regression model between built environment characteristics and carbon emission intensity using XGBoost and PDPs
 - Investigated the travel characteristics of typical public service facilities and their impact on carbon emissions using individual travel survey data from two origin-destination surveys
 - Discussed the trade-offs and synergies between current and low-carbon oriented planning and policy decisions
- Assessing urban street vitality and quality through visual and auditory perceptions helps optimize street design^[6]
 - Developed a framework to assess street vitality from the perspective of pedestrians' visual and auditory perception, integrating site data collection, semantic segmentation, stated preference questionnaires

Undergraduate Researcher, Southeast University

01/2020-12/2021

Advisor: Prof. Yangyang Yuan, Department of Landscape Architecture

Funded by the National Key Research and Development Program of China (No. 2019YFD1100405), and the National Natural Science Foundation of China (No. 51838003)

- Comparing runoff control effects of Low Impact Development schemes aids in selecting optimal scenarios^[5]
 - Participated in designing and conducting experiments, and contributed to writing and editing the paper
 - Compared the runoff control effects of two Low Impact Development systems and visualized the results

SELECTED PROFESSIONAL EXPERIENCES

Team Member, Southeast University Urban Planning & Design Institute Co., Ltd.

12/2022-06/2024

- General Plan for Mount Tianmu Scenic Area^[9]

- Developed and complied planning schemes, particularly conservation and land use plans, using ArcGIS analysis
- Explored conflicts between environmental conservation and economic development in scenic area boundaries and authored a paper on buffer zone planning challenges

Team Member, Urban Architecture Lab, Southeast University Architecture Design Institute Co., Ltd.

06/2022-07/2023

- Development Planning and Urban Design for the Surrounding Area of the Mount Tanshi Cultural Park
 - Performed site elevation and sightline analysis using ArcGIS analysis to guide the design of viewing system

Analytical Assistant, Southeast University Urban Planning & Design Institute Co., Ltd.

10/2022-11/2022

- Urban Design for the Historical Districts of Guangzhou Based on Heritage Conservation
 - Analyzed population distribution, dynamic temporal patterns, and work-residence relationships
 - Visualized dynamic temporal population distribution characteristics utilizing ArcGIS Pro and Kepler
 - Examined socio-economic attributes and the correlation between population distribution and built environment factors, including land use types and building footprints

CONFERENCE PRESENTATIONS

60th World Congress of the International Federation of Landscape Architecture (Istanbul, Türkiye, 2024)

- “Deciphering anthropogenic influences on habitats: Implications from interpretable machine learning”

Beijing-Hong Kong Conference on Agricultural Microbial Resources and Evolutionary Biology (Beijing, China, 2024)

- “Spatial eco-socio-economic trade-offs inform differentiated management strategies in urban agglomerations”

International Conference on Spatial Planning and Sustainable Development (Kanazawa, Japan, 2023)

- “Assessing urban street vitality through visual and auditory perception”

SCHOLARSHIPS AND AWARDS

Kang Qi Scholarship and Grant (CNY 5,000)	2023-2024
Second Prize Chinese University Data-driven Innovation Competition (CNY 10,000)	2022
Southeast University President Scholarship (CNY 5,000)	2018-2019

SKILLS

Design skills	Rhinoceros (basic Grasshopper), AutoCAD, Adobe Suite (Photoshop, Illustrator, Indesign), Lumion, Enscape
Analytical skills	Spatial analysis (ArcGIS Pro, Arcpy, FME), Python (Libraries: Pandas, Numpy, Matplotlib, Geopandas, Scikit-learn, NetworkX)
Languages	Native Mandarin Chinese, Fluent English (TOEFL iBT - Score: 101/120, GRE General Test - Score: 326+4.5)