YANHAN LIU

PhD Candidate in Architecture
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RESEARCH INTERESTS

Built environment and human behaviour · Intergenerational interaction
Age-inclusive public spaces · Urban design and social wellbeing

My research examines relationships between the physical environment and social interaction, focusing on children and older adults in neighbourhood public spaces. I combine behavioural observation, spatial analysis, questionnaire surveys and interviews to investigate environmental conditions that support or limit intergenerational interaction. This work aims to inform the planning and design of age-inclusive public spaces.

EDUCATION

National University of Singapore, Singapore Aug 2021 – Dec 2026 (expected)
PhD in Architecture | GPA: 4.33/5.00
Advisor: Assoc. Prof. Ye Zhang
Thesis: Intergenerational Interaction and the Physical Environment in Neighbourhood Public Spaces: Evidence from Queenstown, Singapore

Syracuse University, USA Aug 2017 – Dec 2018
Master of Science in Architecture | GPA: 3.93/4.00
Advisors: Assoc. Prof. Fei Wang and Prof. Michael A. Speaks
Thesis: An affordable co-living community for migrant people in Beijing

Qingdao University of Technology, China Sep 2012 – Jun 2017
Bachelor of Architecture | GPA: 3.54/4.00

PUBLICATIONS

Journal Articles

Liu, Y., Thang, L. L., & Zhang, Y. (2026). Can age-friendly and child-friendly urban public spaces be integrated? A systematic review and thematic analysis. *Urban Studies.* https://doi.org/10.1177/00420980261428806

Liu, Y., He, Z., & Zhang, Y. (2025). Design characteristics of campus pedestrian spaces of comprehensive universities in Singapore. *Landscape Architecture, 32*(12), 96–104.

Zeng, B., **Liu, Y.**, & Wang, F. (2018). The future of ecological urbanism. *Time + Architecture, (3), 4–5.*

Conference Papers

Liu, Y., & Zhang, Y. (2025). Understanding the effects of physical environment factors on intergenerational co-presence and interaction in neighbourhood public spaces. *International Forum on Urbanism (IFoU 2025)*, Lisbon, Portugal.

Liu, Y. (2019). An affordable co-living community for migrant people in Beijing. In *Proceedings of S.Arch 2019* (pp. 365–375). Erlangen, Germany.

Book Chapter

Liu, Y., & Liao, H. X. (2018). New Theme Land. In *Design Energy Futures: Xiong'an 1.0*. School of Architecture, Syracuse University.

Manuscripts in Preparation

Liu, Y., Zhang, X., & Zhang, Y.* (2026). Intergenerational interaction and the physical environment in neighbourhood public spaces: Evidence from computer vision-assisted video analysis. *In preparation.*

Liu, Y., Xiang, X., Thang, L. L., & Zhang, Y.* (2026). Understanding intergenerational interaction in neighbourhood public spaces: A mixed-methods study in Singapore. *In preparation.*

RESEARCH & TEACHING EXPERIENCE

Research Experience

Doctoral Research | National University of Singapore Aug 2021 – Present

Intergenerational interaction and the physical environment in neighbourhood public spaces

- Designed and conducted a sequential mixed-methods study examining relationships between the physical environment and intergenerational interaction in Singapore.
- Coordinated fieldwork encompassing video observation, physical environment assessment, questionnaire surveys and semi-structured interviews.
- Applied computer vision to video observations and statistical modelling to examine associations between physical environment factors and intergenerational interaction, integrating quantitative findings with qualitative interview analysis.

Student Researcher (Part-time) | NUS Cities Oct 2026 – Present

Community Assets and Activity Chain Modelling (CA-ACM)

In collaboration with the Health Promotion Board (HPB), Singapore.

- Synthesise data and findings across work packages to identify evidence gaps and connections between community asset use, mobility patterns and physical activity.
- Propose a mixed-methods analytical framework combining environmental assessments with user and stakeholder interviews to inform further analysis and survey development.

Visiting PhD Student | Tsinghua University Sep 2025 – Jan 2026

School of Architecture

- Conducted computer vision-assisted analysis of video observations for doctoral research on intergenerational interaction in neighbourhood public spaces.

Research Assistant | Syracuse University Jan 2018 – May 2019

School of Architecture

- Produced architectural drawings for faculty-led design projects.
- Coordinated and consolidated project materials for the team's 2018 Time·Space·Existence exhibition in Venice.

Teaching Experience

Teaching Assistant | National University of Singapore Aug 2022 – Jan 2025

Master of Urban Planning programme | Educator Track Teaching Assistant

- Coordinated teaching activities and course administration across the Master of Urban Planning programme in collaboration with the Programme Director.
- Provided student consultations and design feedback throughout the studio course, and served as a critic at studio reviews.

Urban Design Theory | Teaching Assistant

- Reviewed and graded coursework for Urban Design Theory, assessing students' understanding and application of urban design concepts and theories.

Invited Guest Critic

Nanjing University 2026

School of Architecture and Urban Planning

Design Studio: Intelligent Analysis and Design of Intergenerationally Inclusive Spaces

Syracuse University 2021

School of Architecture

Master of Science in Architecture thesis midterm reviews

PROFESSIONAL EXPERIENCE

Assistant Researcher | URBANUS Architecture & Design Aug 2019 – Aug 2020

Urban Research Department | Full-time

Chegongmiao Public Space Renewal, Shenzhen

- Conducted area-wide research on spatial conditions, property ownership and patterns of use to inform the renewal strategy. Participated in consultations with clients and local property owners to document stakeholder needs and the area's development and use history.
- Contributed to design development and discussions with government stakeholders.

Architectural Intern | Shanghai Kaiyi Architectural Design Group Sep 2016 – Mar 2017
- Supported office-building scheme design, drawings and presentation materials.

Architectural Intern | Qingdao University of Technology Jun 2015 – Sep 2016
Architecture Design Institute
- Supported student-housing design and construction-related work.

PRESENTATIONS & EXHIBITIONS

Academic Presentations

Invited Talk | Population Association of Singapore Conference 2026
Designing for Connection: Physical Environment Factors and Intergenerational Interaction in Singapore's Neighbourhood Public Spaces.

Oral Presentation | NUS–SUTD PhD Symposium in Architecture 2022
Digital Interventions on Urban Public Space and Its Effects on Outdoor Activities.

Selected International Exhibitions (Team Projects)
Brasilia 2050: Future's Future — Shenzhen Biennale, 2019.
Xiong'An, the City for the Future — Seoul Biennale of Architecture and Urbanism, 2019.
Time·Space·Existence — Venice, 2018.

ACADEMIC SERVICE & COMMUNITY ENGAGEMENT

Project Co-lead | Play Together 2026
Intergenerational Play in Neighbourhood Public Spaces
HDB Lively Places Challenge, Clementi, Singapore
- Co-lead the planning and coordination of intergenerational community activities; the programme is approved and activities are in preparation.
- Liaise with HDB, the Town Council and the People's Association to coordinate activity planning and implementation arrangements.

Coordinator & Moderator | Intergenerational Programmes Roundtable 2024
- Coordinated the organisation of an intergenerational programmes roundtable in Singapore and moderated discussion on challenges and opportunities in practice.

Journal reviewer: *Urban Studies*

HONOURS & AWARDS

Tan Cheng Siong Research Scholarship, National University of Singapore 2025

Outstanding Graduate of Shandong Province 2017

Second Prize, Shandong Province Students' Architectural Design Competition 2016

Fengjing Merit Scholarship 2016

Innovation and Technology Scholarship 2015

SKILLS & LANGUAGES

Quantitative Methods: Geospatial data processing and analysis, computer-vision-based behavioural analysis, negative binomial regression and ordinal logistic regression.
Fieldwork & Qualitative Methods: Questionnaire surveys, on-site observation, semi-structured interviews, focus groups, and thematic analysis.
Software & Programming: Python, R, ArcGIS and NVivo.
Design Tools: Photoshop, Illustrator, InDesign, Rhino, Revit, AutoCAD and SketchUp.
Languages: Mandarin (native); English (proficient).