Peijin Sun | Ph.D.

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Experience

Postdoc, Department of City and Regional Planning — 2024-present
University of North Carolina at Chapel Hill — *Chapel Hill, NC*

Assistant Professor (Lecturer), Urban Planning — 2020-2024
Dalian University of Technology — *Dalian, P.R.China*

Education

Ph.D., Urban Planning — 2016-2020
Dalian University of Technology — *Dalian, P.R.China*

Joint-Ph.D., Department of City and Regional Planning — 2017-2018
University of North Carolina at Chapel Hill — *Chapel Hill, NC*

Master of Engineering, Urban Planning — 2014-2016
Dalian University of Technology — *Dalian, P.R.China*

Bachelor of Engineering, Urban Planning — 2009-2014
Dalian University of Technology — *Dalian, P.R.China*
(ranked among the top 10 engineering universities in China)

Professional Skills

Research Design & Data Analysis

- Designed research frameworks for urban environments and healthy behaviors, resulting in 20+ peer-reviewed publications, a monograph, and leadership in 6 funded projects.
- Conducted advanced qualitative and quantitative analyses, integrating multi-modal data processing (e.g., images, text, trajectories, remote sensing image, geospatial data) and machine learning applications to generate insights for decision-making.
- Proficient using tools such as ArcGIS, SPSS, and Python.

Urban Planning & Project Leadership

- Led design teams for two completed engineering projects: a Residential Community Development and the Dalian Port Cruise Terminal, coordinating collaboration among stakeholders and supervising 3D modeling, architectural design, and site planning to meet client requirements and regulatory standards.

- Served as a consulting advisor for the “Above Xinghai” Medical Mall Project in Dalian, utilizing data-driven insights and technical analysis to inform strategic decision-making and optimize project feasibility.

Books

Sun Peijin, Lu Wei. **Building Healthy Communities: Environmental Survey and Analysis Method**. 2023. Published in Chinese by China Architecture & Building Press.

Core Research Content

- Discusses institutional frameworks, policies, health-promoting urban design, and social practices.
- Covers healthy community research methods, data collection and preprocessing techniques, and case study analysis within a 360,000-word framework.

Interdisciplinary Research Methods

- Integrates social survey methods with technologies such as big data and AI.
- Combines qualitative and quantitative approaches from geography, sociology, statistics, and computer science.

Data Processing and Analysis

- Details the processes of data collection, cleaning, and integration, with a focus on commonly used statistical models such as factor analysis, mediation effects, structural equation modeling, and causal inference.

Research Grants

[1] Research on the driving mechanism of coastal tourism attractiveness and development driven by multimodal learning integration, **Principal Investigator**.
Liaoning Provincial Federation of Social Science Key Project *2024.08–2025.08*

[2] Research on the mechanism of coastal tourism destination attractiveness and decision-making support driven by multimodal data, **Principal Investigator.**
Dalian Federation of Social Science Key Project *2024.09–2025.06*

[3] Research on the key technologies and implementation paths for rural tourism development driven by multimodal data, **Principal Investigator.**
Fundamental Research Funds for the Central Universities *2024.01–2024.12*

[4] Research on the key technologies and implementation paths for rural tourism development driven by multimodal data, **Principal Investigator.**
Liaoning Provincial Philosophy and Social Science Planning Fund *2023.07–2025.07*

[5] Research on the theoretical and practical innovation model of smart city courses driven by frontier technologies, **Principal Investigator.**
Dalian University of Technology Teaching Reform Fund *2023.12–2024.12*

[6] Research on the community environmental quality and physical activity based on multi-source data fusion, **Principal Investigator.**

Fundamental Research Funds for the Central Universities *2020.01–2023.12*

[7] Research on Planning Theories and Smart Methods for Improving Road Network Quality under the Dual Dynamics of Urban and Street-Level Perspectives, participant.

National Natural Science Foundation of China *2023.01–2026.12*

Publications

[1] **Sun, P.,** Sun, J., Jin, L., & Zhu, Y. (2024). ***COVID-19 pandemic changes the outdoor physical activity preference in Chinese city: A 7-year GPS trajectory data analysis***. Cities, 152, 105253.（SCI，JCR Q1）

[2] **Sun, P.,** Zhao, H., & Lu, W. (2024). ***How urban environments affect public sentiment and physical activity using a cognitive computing framework***. Frontiers of Architectural Research, Frontiers of architectural research, 2024-01. (A&HCI）

[3] **Sun, P.,** Liu, P., & Song, Y. (2024). ***Seasonal variations in urban park characteristics and visitation patterns in Atlanta: A big data study using smartphone user mobility***. Urban Forestry & Urban Greening, 91, 128166.（SCI，JCR Q1）

[4] **Sun, P.,** Lu, W., & Jin, L. (2023). ***How the natural environment in downtown neighborhood affects physical activity and sentiment: Using social media data and machine learning***. Health & Place, 79, 102968.（SCI，JCR Q1）

[5] **Sun, P.,** Song. Y., & Lu, W. (2022***). Effect of Urban Green Space in the Hilly Environment on Physical Activity and Health Outcomes: Mediation Analysis on Multiple Greenery Measures***. Land, 11(5). （SSCI，JCR Q1）

[6] **Sun, P.,** & Lu, W. (2022). ***Environmental inequity in hilly neighborhood using multi-source data from a health promotion view***. Environmental Research, 204(Pt A), 111983.（SCI，JCR Q1）

[7] Wan, T., Lu, W., & **Sun, P**. (2023). Equity impacts of the built environment in urban rail transit station areas from a transit-oriented development perspective: a systematic review. Environmental Research Communications, 5(9), 92001.

[8] Jin, L., Lu, W., & **Sun, P**. (2022). Preference for Street Environment Based on Route Choice Behavior While Walking. Frontiers in Public Health,10, 880251. （SCI，JCR Q1）

[9] Jin, L., Lu, W., & **Sun, P**. (2022). Effect of the Street Environment on Walking Behavior: A Case Study Using the Route Choice Model in the Chunliu Community of Dalian. Frontiers in Public Health 10(May):874788. （SCI，JCR Q1）

[10] Wan, T.,Lu, W., & **Sun, P**. (2022). “Constructing the Quality Measurement Model of Street Space and Its Application in the Old Town in Wuhan.” Frontiers in Public Health 10(February):1–18. （SCI，JCR Q1）

[11] Sun, Y.,Lu, W., & **Sun, P**. (2021). “Optimization of Walk Score Based on Street Greening—a Case Study of Zhongshan Road in Qingdao.” International Journal of Environmental Research and Public Health 18(3):1–13. （SCI，JCR Q1）

[12] **Sun, P.**, Song, Y.,Lu, W., & Gu,Z. (2019). “Influences of Built Environment with Hilly Terrain on Physical Activity in Dalian, China: An Analysis of Mediation by Perceptions and Moderation by Social Environment.” International Journal of Environmental Research and Public Health 16(24):1–17. （SCI，JCR Q1）

Publications in Chinese Journal

[1] **Sun Peijin**, Lu Wei, Wu Liang. Differences of Health-Oriented Built Environment Assessment Methods and Scales, Modern Urban Research,2020,35(4):36-43. (Chinese Core Journal Criterion of PKU)

[2] **Sun Peijin**, Lu Wei. Institutional-Oriented Design for Health and Its Enlightenment to China: "Active Living by Design" International Progress and Implications, Journal of Human Settlements in West China,2020,2:60-66. (Chinese Science Citation Database)

[3] **Sun Peijin**, Lu Wei, Liu Lianlian. Design Guidelines for Active Living: Western Experience, Urban Planning International, 2019,6:170-178. (Chinese Science Citation Database)

[4] **Sun Peijin,** Lu Wei. The Correlation between Urban Green Space and Residents' Physical Activity and Health Outcome, South Architecture. 2019,3:34-39. (Chinese Science Citation Database)

[5] **Sun Peijin**, Song Yan, Lu Wei. Healthy Planning Implementation System and Policy: Learning from International Experience of the United States, Shanghai Urban Planning Review,2019,5:117-122. (Chinese Core Journal Criterion of PKU)

[6] **Sun Peijin**, Lu Wei, Wu Liang, The Association between Urban Design Quality and Walking Behavior in Dalian, New Architecture,2019,(05):97-101.

[7] Wan Tianyue, Lu Wei, **Sun Peijin**. Progress and Prospect of Spatial Equity in Public Service Facilities Based on Bibliometric, Urban & Rural Planning,2023,(05),93-105

[8] Jin Lan, Lu Wei, **Sun Peijin**. Walkability Measurement of the Built Environment and Its Validity in Dalian, New Architecture, 2022,(04):100-105.

[9] Xin Yuzheng, Lu Wei, **Sun Peijin.** Research and Prospect of Green Space from the Perspective of Public Mental Health, Landscape Architecture,2022,29(03):79-85.

Honors and Awards

- **Distinguished Science and Technology Talent** of Dalian (Awarded RMB 300,000) 2021
- **Outstanding Doctoral Dissertation Award**, Dalian University of Technology 2021
- **Excellent Graduate Student**, Dalian University of Technology 2020
- **CSC Scholarship Program**, China Scholarship Council 2017
- **Excellent Undergraduate**, Dalian University of Technology 2014

Conference Presentations

[1] **Peijin Sun**. Mechanisms influencing the popularity of multimodal data-driven coastal Spaces: application of large language models, China Tourism Geography Academic Conference, South China University of Technology, Guangzhou, 2024, 7.6-7.

[2] **Peijin Sun**, Daiyun Liu. Exploration and Teaching Practices in Coastal Space Planning and Design in Dalian, Special Committee on Master Planning, Urban Planning Society of China, Dalian University of Technology, Dalian, 2024, 6.21-23.

[3] **Peijin Sun**. How the natural environment in downtown neighborhoods affects physical activity and sentiment: Using social media data and machine learning, Health Geography Youth Forum, Beijing Normal University, Zhuhai, 2024, 5.23-24.

[4] **Peijin Sun.** How urban environments affect public sentiment and physical activity using a cognitive computing framework, Chinese Healthy City Science Annual Conference, Tongji University, Shanghai, 2023, 10.26-27.

[5] **Peijin Sun.** The Application of Language Models in the Study of Urban Environments and Residents' Physical Activity, The 17th International Association for Chinese Planning, Tianjin University, Tianjin, 2023, 6.28-7.02.

[6] **Peijin Sun**. Relationship between urban environment and physical activity based on social media data, The 1st Environment and Behavior International Symposium, Online, 2022, 11.19-20.

[7] **Peijin Sun**. Environmental inequity in hilly neighborhood using multi-source data from a health promotion view, Sino-UK Joint Symposium on Post Novel Covid-19 Pandemic, Online, 2021, 8.27-29.

Teaching Innovation

- **Undergraduate courses**:
  - Urban Digital Technology
  - Spatial Quantitative Analysis
  - Urban Cognition Survey
  - Urban Park Planning and Design
  - Coastal Landscape
  - Design Basis
- **Graduate courses:**
  Urban Problem Survey; Urban Planning and Design; Academic Writing.
- **Innovative Courses Developed on Smart Cities**

  Urban Digital Technology

  Focus: A theoretical course providing a comprehensive foundation in smart cities and urban science.

  Key Topics: Smart cities, digital twins, geographic information systems, artificial intelligence, machine learning, computer vision, natural language processing, Internet of Things, sensors, and data visualization.

  Application: Emphasizes the integration of these technologies in urban development and planning.

  Spatial Quantitative Analysis/ Urban Problem Survey

  Focus: A practical course focused on applying advanced technologies, such as machine learning and spatial analysis, to address complex urban.

  Application: Students engage in hands-on projects to address real-world challenges in urban planning and design. View selected student projects on my personal homepage