Mingze Chen

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Education

UNIVERSITY OF BRITISH COLUMBIA   Vancouver, Canada
Ph.D. Candidate, Urban Nature Design Research (UNDER) Lab   2022 - Present
Supervisor: Prof. Keunhyun Park   June 2026 (expected)
Dissertation: Monitoring and analyzing human-nature interaction through sensor and vision technologies

MASSACHUSETTS INSTITUTE OF TECHNOLOGY   Boston, USA
Exchange Ph.D. Student, Senseable City Lab   2025 - Present
Supervisor: Prof. Fábio Duarte, Prof. Carlo Ratti

UNIVERSITY COLLEGE LONDON   London, UK
Master of Architecture Urban Design, The Bartlett Faculty of the Built Environment   2021 - 2022
Supervisor: Prof. Roberto Bottazzi (Research Cluster 14: Machine Learning Urbanism)

SICHUAN AGRICULTURAL UNIVERSITY   Chengdu, China
Bachelor of Engineering in Landscape Architecture   2016 - 2020
Bachelor of Agriculture in Landscape Gardening

Academic Positions

Sessional Lecturer | University of British Columbia   Vancouver, Canada
Course 'AI and big data for sustainable development' (On-site, Sole Instructor)   2025 – Present

Professional Experience

Landscape Architect | GN INTERNATIONAL DESIGN LCC   Shanghai, China
- Qiong Lai Landscape Ecological Design Competition, Jiangxi Talent Park etc.   2020 - 2021

Intern Landscape Designer | SWA GROUP   Shanghai, China
- Shenzhen Bay Competition, Xi'an Huaqiao Commercial Project etc.   May 2020– Jun 2020

Intern Landscape and Urban Designer | HASSELL   Shanghai, China
- Shenzhen Blueway Competition, Tangshan Ape-man Cave Park Landscape Renewal etc.   Feb 2020– May 2020

Publications

Published **26 peer-reviewed journal articles** (including **17 first/corresponding** author papers) across four themes, 2 book chapters, and 21 conference papers/abstracts.
Google Scholar 281 citations, h-index of 8, and an i10-index of 7.
* Asterisks indicate publications led under my mentorship, where I served as the corresponding author.

Peer-reviewed Articles (Under Review)

2. *SCI:* **Chen, Mingze.,** Park, Keunhyun. Sensor- and vision-based monitoring of human behaviors in urban and natural environments: A scoping review *Sustainable Cities and Society* (Under Review)

1. *SSCI:* **Chen, Mingze.,** Wang, Xinyi., Wang, Xiao., Song, Yang. Green Equity Triangle: A comparative measurement to evaluate the green visibility, distribution, and accessibility *Habitat International* (Under Review)

Peer-reviewed Articles (Revise & Resubmit)

1. *SSCI:* **Chen, Mingze.,** Huang, Yongming., Cai, Yuxuan., Song, Yang., Park, Keunhyun. Reconceptualizing urban vitality: A multimodal framework integrating image, text, and mobility data *npj Urban Sustainability*

Peer-reviewed Articles (Published Selected)

Theme I: Vision-language Model for Urban and Nature Analytics

3. *SCI/SSCI:* **Chen, Mingze.,** Liu, Yuxuan., Liu, Fan., Chadha, Trishla., Park, Keunhyun. Measuring pedestrian-level street greenery visibility through space syntax and crowdsourced imagery: A case study in London, UK. *Urban Forestry & Urban Greening* 2025 | https://doi.org/10.1016/j.ufug.2025.128725

2. *SCI:* Zhang, Xiamengwei., **Chen, Mingze*.,** Huang, Yongming. Who gets to use the street? Evaluate the utilization and inclusiveness using crowdsourced videos and vision-language models. *Sustainable Cities and Society* 2025 | https://doi.org/10.1016/j.scs.2025.106906

1. *SSCI:* Huang, Yongming., Du Jiani., **Chen, Mingze*.,** Lin, Yuxuan., Huang, Shaopo., Cai, Yuxuan. Evaluating the spatial-temporal impact of urban nature on urban vitality in Vancouver: A social media and GPS data approach. *Land Use Policy* 2025 | https://doi.org/10.1016/j.landusepol.2025.107824

Theme II: Sensor-based and Geospatial Modeling of Human-nature Relationship

4. *SCI/SSCI:* **Chen, Mingze.,** Cai, Yuxuan., Guo, Shuying., Sun, Ruilin., Song, Yang., Shen, Xiwei. Evaluating implied urban nature vitality in San Francisco: An interdisciplinary approach combining census data, street view images, and social media analysis. *Urban Forestry & Urban Greening* 2024 | https://doi.org/10.1016/j.ufug.2024.128289

3. *SSCI:* Yang, Jiaxi., **Chen, Mingze*.** Assessing the impact of urban amenities on people with disabilities in London: A Multiscale Geographically Weighted Regression Analysis. *Habitat International* 2025 | https://doi.org/10.1016/j.habitatint.2025.103426

2. *SCI/SSCI:* Zhang, Kaiqi., **Chen, Mingze*.** Multi-method analysis of urban green space accessibility: Influences of land use, greenery types, and individual characteristics factors. *Urban Forestry & Urban Greening* | https://doi.org/10.1016/j.ufug.2024.128366

1. *SSCI:* Lakshmi, Priya Rajendran., Raúl Leal., **Chen, Mingze.,** Juan Carlos, Guerrero Andrade., Rakib, Akhtar., Lazaro, Eliyah Mngumi., Sheeba, Chander., Sudhan, Srinivas., Maria, Rinya Roy. The 'Peri-Urban Turn': A systems thinking approach for a paradigm shift in reconceptualising urban-rural futures in the global South. *Habitat International* 2024| https://doi.org/10.1016/j.habitatint.2024.103041

Theme III: Climate Resilience and Wellbeing in Urban Landscapes

3. *SCI/SSCI:* Yuan, Fan[1]., **Chen, Mingze[1]*.** A systematic review of measurement tools and senior engagement in urban nature: Health benefits and behavioral patterns analysis. *Health & Place* 2025 | https://doi.org/10.1016/j.healthplace.2024.103410

2. *SCI:* Luo, Tianze., **Chen, Mingze*.** Advancements in supervised machine learning for outdoor thermal comfort: A comprehensive systematic review of scales, applications, and data types. *Energy and Building* 2025 | https://doi.org/10.1016/j.enbuild.2024.115255

1. *SCI:* Shen, Xiwei., **Chen, Mingze.,** Li, Xiaowei., Yang, Qiuyi., Sun, Qingqing., Gao, Shu. Advancing climate resilience through a geo-design framework: strengthening urban and community forestry for sustainable environmental design. *Journal of Forestry Research* 2024|https://doi.org/10.1007/s11676-024-01772-0

Theme IV. Computational Design and Visualization Technologies

3. *SCI:* He, Wei., **Chen, Mingze*.** Advancing Urban Life: A Systematic Review of Emerging Technologies and AI in Urban Design and Planning. *Buildings* 2024 | https://doi.org/10.3390/buildings14030835

2. *SCI/SSCI:* Ge, Mengting., Kong, Jie., Yang, Qiuyi., **Chen, Mingze*.,** Wang, Wenji. Examine an Intelligence Education Framework of Landscape Architecture (EFLA) Based on Network Model of Technology in Landscape Architecture (NMTLA). *Sustainability* 2023 | https://doi.org/10.3390/su151411277

1. **Chen, Mingze.,** Zhang, Yang., Yang, Yubing., Fang, Zhiguo. Application of data visualization in urban design based on Grasshopper, *Landscape Architecture Academic Journal* 2022, 39(5), 44-51. (in Chinese) | https://doi.org/10.12193/j.laing.2022.05.0044.006

Book Chapter

2. Magical Foodscape: A Guidebook For Re-planning The Cities Base On The Culture, Food And The Built Environment. (pp. 010–055). *Advanced Books*, 1, e129204. | Section Editors | https://doi.org/10.3897/ab.e129204 (not peer-reviewed)

1. Agro-Matrix. In M.Arch. UD 2021-2022 (pp. 148–159). *Bartlett School of Architecture, UCL*. (not peer-reviewed)

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Presentations

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Peer-reviewed Conference (Selected)

Chen, Mingze., Park, Keunhyun. Urban Human-Nature Interaction: A Deep Learning Approach to Global Social Media Imagery | *2025 ACSP* (Association of Collegiate Schools of Planning) Oral Presentation (Minneapolis, MN)

Chen, Mingze., Park, Keunhyun. Understanding Human-Nature Interaction through AI and Crowdsourced Imagery: A Case Study of Vancouver | *2025 BCSLA* (British Columbia Society of Landscape Architects) Oral Presentation (Vancouver, BC)

Chen, Mingze., Park, Keunhyun. Usability of Low-cost Smart Sensors for Monitoring Visitor Volumes and Movements in Urban Parks | *2025 CELA* (Council of Educators in Landscape Architecture) Oral Presentation (Portland, OR)

Chen, Mingze., Huang, Yongming., Zheng, Yuqiao., Du, Jiani., Park, Keunhyun. Defining Urban Vitality Using Text-based, Image-based, and GPS Data | *2024 ACSP* (Association of Collegiate Schools of Planning) Oral Presentation (Seattle, WA)

Chen, Mingze., Huang, Yongming., Zheng, Yuqiao., Du, Jiani. Evaluating Urban Vitality with Big Data across 10 Global Cities | *2024 IFLA* (International Federation of Landscape Architects) Conference Abstract (Accepted)

Chen, Mingze., Huang, Yongming., Zheng, Yuqiao., Du, Jiani. Evaluating Urban Vitality with Big Data: Insights from Social Media and GPS Data across 10 Global Cities | *2024 EDRA* (Environmental Design Research Association) Conference Abstract (Accepted)

Chen, Mingze., Park, Keunhyun. Sensor-based and vision-based technologies in monitoring human behaviours in natural areas: A scoping review | *2024 CELA* (Council of Educators in Landscape Architecture) Oral Presentation (St. Louis, MI)

Chen, Mingze., Liu, Yuxuan., Chadha, Trishla. A Comprehensive Model for Pedestrian-Scale Evaluation of Linear Greenery Visibility | *2023 IFLA* (International Federation of Landscape Architects) Conference Abstract (Accepted)

Chen, Mingze. Using big data and machine learning to quantify urban green space equality by ethnicity, gender, income, and age | *2022 IFLA* (International Federation of Landscape Architects) Conference Abstract (Accepted)

Guest Lecture and Invited Presentation

MASSACHUSETTS INSTITUTE OF TECHNOLOGY   Boston, USA
Presentation: "A Global Atlas of Human-Nature Interaction and Cultural Ecosystem Services"   April 2025
Presentation: "Automated visitor monitoring tools for better management of urban nature"   Jan 2024
Senseable City Lab, Department of Urban Studies and Planning (in-person)

UNIVERSITY OF BRITISH COLUMBIA   Vancouver, Canada
UFOR 444 Green Network Planning (in-person)

Guest Lecture: "Data-driven Urban Nature Analytics: Big Data and Machine Learning"	Nov 2024
UFOR 100 101 Greening the City (in-person)	
Guest Lecture: "What role can AI play in urban forestry planning, research and management?"	Oct 2023
UFOR 522 Urban Forest Resources and Benefits Assessment	
Guest Lecture: Technologies in Urban Forestry Research (online)	Mar 2023

UNIVERSITY OF NEVADA, LAS VEGAS — Las Vegas, USA

LAND 467 Geographic Information Systems for Landscape Architecture (online, co-Instructor) — 2023 – 2024

Guest Lecture: Delivered weekly modules and instructional sessions on ArcGIS Pro (12 weeks)

SHANGHAI JIAO TONG UNIVERSITY — Vancouver, Canada

Guest Lecture: "Quantitative Method for Landscape and Urban Planning" (online) — Nov 2024

CLEMSON UNIVERSITY — Clemson, USA

Guest Lecture: "Mixed methods in planning and design" (online) — Mar 2022

SICHUAN AGRICULTURAL UNIVERSITY — Chengdu, China

Guest Lecture: "From planning to quantitative research" (online) — Mar 2022

Teaching and Mentoring

UNIVERSITY OF BRITISH COLUMBIA — Vancouver, Canada

Graduate Teaching Assistant (1321h)

LARC 504 Landscape Architecture Design Studio IV (20h) | Graduate	Aug 2025 – Sep 2025
UFOR 444 Green Network Planning (96h) | Undergraduate and Graduate	Sep 2025 – Dec 2025
UFOR 531 Master of Urban Forestry Leadership Capstone Course (160h) | Graduate	Jul 2025 – Aug 2025
UFOR 420 Ecology of Urban Green Infrastructure (192h) | Undergraduate	Jan 2025 – Apr 2025
UFOR 444 Green Network Planning (160h) | Undergraduate and Graduate	Sep 2024 – Dec 2024
UFOR 500 921 Developing Green and Resilient Cities (45h) | Graduate	Jul 2024 – Aug 2024
PLAN 341 Smart City: Smart Cities: Concepts, Methods, and Design (192h) | Undergraduate	Jan 2024 – Apr 2024
UFOR 100 101 Greening the City (96h) | Undergraduate	Sep 2023 – Dec 2023
LARC 444/553 Green Network Planning (82h) | Undergraduate and Graduate	Sep 2023 – Dec 2023
UFOR 500 921 Developing Green and Resilient Cities (96h) | Graduate	Jul 2023 – Aug 2023
UDES 509A Urban Design Methods (54h) | Graduate	May 2023 – Jun 2023
UFOR522 Urban Forest Resources and Benefits Assessment (128h) | Graduate	Jan 2023 – Apr 2023

NATURE AI LAB | natureailab.com — Nov 2021 – Present

Founder & Coordinator (Student-led Research Collective)

Mentored over 20 interdisciplinary student teams, whose projects received peer-reviewed publications or awards

Urban Soundscape Planning and Design Project	Feb 2023 – May 2023
| Urban EchoRing: Soundscapes & Circular Connectivity for Urban Vibrancy	
Python and Computer Vision Workshop	Mar 2022 – May 2022
| Street View and Satellite Imagery Segmentation based on Python and ArcGIS	
Data Visualization Workshop	Feb 2022 – Jun 2022
| Workshop of data visualization in urban design based on Grasshopper	
Food and Environment Planning and Design Project	Feb 2022 – Jun 2022
| Reinventing the High-density Spanish Neighborhoods in Naples, Italy Based on Food and Built Environment	

MAPILLARY, META — London, UK

Co-host

| Urban Mobility Workshop	Feb 2023

DESIGN WORKSHOP TEACHING

Teaching Assistant

Parametric Design Workshop - Led by Prof. Enriqueta Llabres-Valls, UCL	Jul 2021 – Aug 2021
Water Infrastructure(s) Workshop - Led by Prof. Andrea Oldani, PoliMi	Jun 2021 – Jul 2021
"Future City & Smart Density" Workshop. - Led by Prof. Aksel Ersoy, TU Delft	Sep 2020 – Oct 2021
Summer School - Led by -Prof. Xiwei Shen & Yang Zhang, Shanghai Jiao Tong University	Jan 2020 – Jun 2021

Research Grants and Experience

Research Grants

International Collaborator, (Role: Contributed to methodological design and data processing in collaboration with Sichuan Agricultural University.) "Spatiotemporal Analysis of Visitor Behaviors in Huanglong World Natural Heritage Site Using Computer Vision: Toward Data-Driven Management Decisions," Sichuan Provincial Department of Science and Technology International Cooperation Project (¥300,000 CNY; 2025; Under Review)

Research Assistant, (PI: Prof. Keunhyun Park) "Developing automated visitor monitoring tools for better management of urban nature," Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Grant ($147,500 CAD; 2022-2027)

Research Assistant, (PI: Prof. Lakshmi Priya Rajendran) "COPS: A Complex Systems approach to peri-urban development for climate resilience and just futures in the Global South," Environment Domain and UCL Grand Challenges (£9,967; 2021-2022)

Research Assistant, (PI: Prof. Lakshmi Priya Rajendran) "Emergent spatialities and micro-resilience in the informal public realm of Global South urban peripheries," ARCHITECTURE RESEARCH FUND (£3,000; 2021-2022)

Research Experience

UNIVERSITY OF BRITISH COLUMBIA   Vancouver, Canada
Graduate Academic Assistant (20h)   Aug 2023 – Sep 2023
LARC 444/553 Green Network Planning
- Led by Dr. Keunhyun Park

UNIVERSITY COLLEGE LONDON   London, UK
Research Associate (380h)   Mar 2022 – Jul 2022
Research Project| Emergent spatialities and micro-resilience in the informal public realm of Global South urban peripheries.
- Led by Dr. Lakshmi Priya Rajendran
Research Project| COPS: A Complex Systems approach to peri-urban development for climate resilience and just futures in the Global South
- Led by Dr. Lakshmi Priya Rajendran, Prof. Raúl Leal

Awards

Design Awards as Supervisor

2023 Architecture Master Prize | **Best of Best** in Public Landscape, Winner in Urban Design, Winner in Urban Planning| Supervisor | Urban EchoRing: Soundscapes & Circular Connectivity for Urban Vibrancy
Student Team: Yixuan Jiang, Xiao Wang, Hongji Zhang, Yiyi Liu, Yilin Wang
https://architectureprize.com/winners/winner.php?id=6979

2023 Architecture Master Prize | Honorable Mention in Public Landscape | Supervisor | Fishing for Bikes: Architecture Solutions for Homelessness, Managed Parking, and Street Culture in Amsterdam
Student Team: Wanqi Zhou, Jiayu Tao, Xinting Ye, Kangshu Wen, Mingze Chen, Yizhuo Zhang
https://architectureprize.com/winners/winner.php?id=7684&mode=hm&compID=12802

2022 "Yuanye Awards" International Competition | Honor Award | Supervisor | Reinventing the High-density Spanish Neighborhoods in Naples, Italy Based on Food and Built Environment
Student Team: Quanchujun, Junyan Zhang, Chuwen Zhong, Jiayu Huang, Yuyang Jin

Design Awards as Student

2024 IDA Design Awards | Bronze in Urban Planning / Infrastructure / Sustainable Urban Architecture | First Author | Team Project | Urban Heat Island Effects in Desert Cities
https://www.idesignawards.com/winners/zoom.php?eid=9-58262-24

2022 Landscape Institute Student Award | Finalists, Innovation and Research Award | Team Leader | Magical Foodscape: A Guide- book for Replanning the Cities Base on the Culture, Food, and the Built environment.
https://awards.landscapeinstitute.org/awards-finalists-2022/

2022 Architecture Master Prize | Honorable Mention in Landscape Architecture / Educational Landscape | Team Project | Campus Flight! A Guidebook for Campus Transformation
https://architectureprize.com/winners/winner.php?id=6109&mode=hm&compID=12798

2021 National ASLA Student Award | Honor Award | Team Leader | Magical Foodscape: A Guide- book for Replanning the Cities Base on the Culture, Food, and the Built environment.
https://www.asla.org/2021studentawards/3468.html

2020 "Yuanye Awards" International Competition | Second Prize | Team Project

Professional Design Awards

"Qionglai Biodiversity Expo" International Competition | Top6 | GN
Jun 2021 | Role: Contributed to concept design, perspective rendering and master plan

Shenzhen Bay International Urban Design Competition | Shortlisted | SWA
Jun 2020 | Role: Contributed to parametric modeling and perspective rendering

"Shenzhen Blueway" International Urban Design Competition | **First Prize** | Hassell
May 2020 | Role: Contributed to the concept design and node modeling

"Henan Talents Innovation Industry Park" Urban Design Competition | Top3 | Hassell
Apr 2020 | Role: Contributed to the modeling and master plan

Service

Reviewer of Journal Manuscripts
Landscape and Urban Planning | Sustainable Cities and Societies | npj Urban Sustainability | Habitat International | Land Use Policy | Urban Forestry & Urban Greening | GIScience & Remote Sensing | Landscape Ecology | Scientific Reports | Science of the Total Environment | Humanities and Social Sciences Communications | Scientific Data | Frontiers of Architectural Research | Restoration Ecology | Journal of Asian Architecture and Building Engineering | Land | Sustainability | Heliyon | Buildings | Earth | The Design Journal

Reviewer of Conferences
Council of Educators in Landscape Architecture (CELA)

Professional Affiliations
Student Member | Association of Collegiate Schools of Planning (ACSP)
Student Member | Council of Educators in Landscape Architecture (CELA)
Student Member | International Federation of Landscape Architects (IFLA)
Student Member | American Society of Landscape Architects (ASLA)

Skills

Computational Design and Landscape Architecture Rhinoceros 3D | Grasshopper | SketchUp | Lumion | CAD

Spatial Data Analytics ArcGIS Pro | ArcPy | ArcGIS Map | QGIS | Mapbox GL JS | GeoPandas

Data Statistics and Visualization Python | R Studio | SPSS | JavaScript| HTML/CSS

Algorithms Python | NumPy |OpenCV | Scikit Learn

Adobe Photoshop | InDesign | Illustrator | After Effects | Premiere