

Mingze Chen

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Education

UNIVERSITY OF BRITISH COLUMBIA

Ph.D. Candidate, Urban Nature Design Research (UNDER) Lab
Supervisor: Prof. Keunhyun Park
Dissertation: [Monitoring and analyzing human-nature interaction through sensor and vision technologies](#)

Vancouver, Canada

2022 - Present

June 2026 (expected)

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Exchange Ph.D. Student, Senseable City Lab
Supervisor: Prof. Fábio Duarte, Prof. Carlo Ratti

Boston, USA

2025 - Present

UNIVERSITY COLLEGE LONDON

Master of Architecture Urban Design (MArch), The Bartlett Faculty of the Built Environment
Supervisor: Prof. Roberto Bottazzi ([Research Cluster 14: Machine Learning Urbanism](#))

London, UK

2021 - 2022

SICHUAN AGRICULTURAL UNIVERSITY

Bachelor of Landscape Architecture (BLA)
Bachelor of Landscape Gardening

Chengdu, China

2016 - 2020

Academic Positions

Sessional Lecturer | University of British Columbia

Course 'AI and big data for sustainable development' ([On-site, Sole Instructor](#))

Vancouver, Canada

2025 Summer

Instructor | Department of Landscape Architecture, University of Nevada, Las Vegas

LAND 467 Geographic Information Systems for Landscape Architecture ([Online, Co-Instructor](#))

Las Vegas, USA

2023 – 2024

Graduate Teaching Assistant | University of British Columbia

1321 instructional hours across 13 graduate and undergraduate courses

Vancouver, Canada

2023 – Present

Professional Experience

Landscape Architect | GN INTERNATIONAL DESIGN LCC

- Qiong Lai Landscape Ecological Design Competition, Jiangxi Talent Park etc.

Shanghai, China

2020 - 2021

Intern Landscape Designer | SWA GROUP

- Shenzhen Bay Competition, Xi'an Huaqiao Commercial Project etc.

Shanghai, China

May 2020- Jun 2020

Intern Landscape and Urban Designer | HASSELL

- Shenzhen Blueway Competition, Tangshan Ape-man Cave Park Landscape Renewal etc.

Shanghai, China

Feb 2020- May 2020

Publications

Published **30** peer-reviewed journal articles (including **19** first/corresponding author papers) across four themes, 2 book chapters, and 21 conference papers/abstracts.

Google Scholar 331 citations, h-index of 9, and an i10-index of 9.

* Asterisks indicate publications led under my mentorship, where I served as the corresponding author.

Peer-reviewed Articles (Under Review)

3. **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)
2. **SCI/SSCI:** Chen, Mingze., Yu, Jingyao., Yan, Hongming., Mao, Qian., Cai, Yuxuan., Ma, Conglin., Yang, Jiaxi. Understanding how park and non-park urban nature shape urban vitality: Multi-scale and temporal evidence from big mobility data. *Landscape and Urban Planning* (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, Fan¹., 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)

Presentations

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 Reinventing the High-density Spanish Neighborhoods in Naples, Italy Based on Food and Built Environment	Feb 2022 – Jun 2022
MAPILLARY, META	London, UK
Co-host	
Urban Mobility Workshop	Feb 2023
DESIGN WORKSHOP TEACHING	
Instructor	
2025 Digital Future (Tongji), Designing with AI Agents: Landscape Architecture Action	Jul 2025 – Aug 2025
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

Others Awards

Mary and David Macaree Fellowship (4848) | CAD \$3,360.00 | University of British Columbia
Graduate Student Travel Award | University of British Columbia

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

University Services

SICHUAN AGRICULTURAL UNIVERSITY

Class Assistant (First year undergraduate student advisor)

Chengdu, China

2018 - 2020

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