

# Mingze Chen

[www.mingzechen.com](http://www.mingzechen.com)

2435-2424 Main Mall . Vancouver . BC . Canada. V6T 1Z4 . [mingze.chen@ubc.ca](mailto:mingze.chen@ubc.ca) . (+1) 236 965 2346

## 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, Fan<sup>1</sup>.**, **Chen, Mingze<sup>1\*</sup>**. 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) | <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

**Presentation:** "A Global Atlas of Human-Nature Interaction and Cultural Ecosystem Services"

Boston, USA

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](https://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
<b>MAPILLARY, META</b> <b>Co-host</b>   Urban Mobility Workshop	London, UK  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

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

<b>UNIVERSITY COLLEGE LONDON</b> <b>Research Associate (380h)</b> 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	London, UK Mar 2022 – Jul 2022
---	-----------------------------------

## 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