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| **Haiyan Hao**  Longgang, Shenzhen, China, 518172  Telephone: +86 15212809370; Wechat: 819221885; Email: [haohaiyan@cuhk.edu.cn](mailto:haohaiyan@cuhk.edu.cn)  Research Interests: Urban Resilience; Crisis Informatics; Urban Analytics; Social Sensing [Google Scholar](https://scholar.google.com/citations?user=G2_Cs-cAAAAJ&hl=en); [ResearchGate](https://www.researchgate.net/profile/Haiyan-Hao-2) |

## WORKING EXPERIENCE

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| Chinese University of Hong Kong, Shenzhen | Shenzhen, China |
| Assistant Professor (Tenure-track) | August 2023 – present |

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| Virginia Tech Transportation Institute | Virginia, United States |
| Research Assistant | July 2017 – July 2019 |

## EDUCATION

**2019 – 2023.05:** Ph.D. Degree in Urban and Regional Planning, University of Florida, FL, USA.

* Advisor/Committee Chair: Dr. Yan Wang; Co-Chari: Dr. Chimay Anumba
* Dissertation Title: “*Deep Community Resilience Assessment Integrating Hazards, Human, and the Built Environment*”
* Committee Members: Dr. Zhong-ren Peng (Urban Planning); Dr. Corene Matyas (Geography); Dr. José AB Fortes (Electrical and Computer Engineering)

**2016 – 2018:** Master’s Degree in Civil Engineering, Virginia Polytechnic Institute and State University, VA, USA.

**2012 – 2016:** Bachelor’s Degree in Civil Engineering, Shandong University, Ji’nan, China.

## PEER-REVIEW JOURNAL PUBLICATION (\*: corresponding author)

1. **Hao, H.\***, Lin, J., Qiu, S., Liu, L., & Dai, J. (2025). Comparing public willingness-to-pay for different low-carbon measures: A case study of Shenzhen, China. *PloS ONE*, *20*(3), e0319687.
2. **Hao, H.\***, Wang, Y., & Chen, J. (2024). Empowering Scenario Planning with Artificial Intelligence: A Perspective on Building Smart and Resilient Cities. *Engineering*, *43*, 272-283.
3. **Hao, H.**, & Wang, Y.**\*** (2024). The emerging “evident” role of climatic risk on migration: a study of four US metropolitans. *Climatic Change*, *177*(3), 1-21.
4. **Hao, H.**, & Wang, Y.**\*** (2023). Modeling Dynamics of Community Resilience to Extreme Events with Explainable Deep Learning. *Natural Hazards Review*, *24*(2), 04023013.
5. **Hao, H.**, Wang, Y.**\***, Du, L., & Chen, S. (2023). Enabling smart curb management with spatiotemporal deep learning. *Computers, Environment and Urban Systems*, *99*, 101914.
6. **Hao, H.**, & Wang, Y.**\*** (2022). Disentangling relations between urban form and urban accessibility for resilience to extreme weather and climate events. *Landscape and Urban Planning*, *220*, 104352.
7. **Hao, H.**, Wang, Y.**\***, & Kang, S. (2022). Examining “digital” vulnerability to flooding among subsidized housing residents in Florida. *International Journal of Disaster Risk Reduction*, *82*, 103302.
8. **Hao, H.**, & Wang, Y.**\*** (2021). Assessing Disaster Impact in Real Time: Data-Driven System Integrating Humans, Hazards, and the Built Environment.  *Journal of Computing in Civil Engineering*, *35*(5), 04021010.
9. **Hao, H.**, & Wang, Y.**\*** (2020). Leveraging multimodal social media data for rapid disaster damage assessment.  *International Journal of Disaster Risk Reduction*, *51*, 101760
10. Wang, Y.**\***, **Hao, H**., & Platt, L. S. (2021). Examining risk and crisis communications of government agencies and stakeholders during early-stages of COVID-19 on Twitter.  *Computers in human behavior*, *114*, 106568.
11. Wang, Y.**\***, **Hao, H.,** Wang, C. (2022). Preparing Urban Curbside for Increasing Mobility-on-Demand using Data-Driven Agent-Based Simulation: Case Study of City of Gainesville, Florida. *Journal of Management in Engineering*.
12. **Hao, H.,** Li, Y. E.**\***, Medina, A., Gibbons, R.B., & Wang, L. (2020). Understanding crashes involving roadway objects with SHRP 2 naturalistic driving study data.  *Journal of safety research*, *73*, 199-209.
13. Li, Y.**\***, **Hao, H.,** Gibbons, R.B., & Medina, A. (2021). Understanding Gap Acceptance Behavior at Unsignalized Intersections using Naturalistic Driving Study Data.  *Transportation Research Record*, *2675*(9) 1345–1358.
14. Li, Y.**\***, **Hao, H.,** Gibbons, R.B., & Medina, A. (2020). Implications of crashes involving roadway objects for machine vision-based driving systems.  *Transportation research record*, *2674*(12), 291-302.

## PEER-REVIEW CONFERENCE PUBLICATION (\*: corresponding author)

1. Chen, X., & **Hao, H.**\* (2025). A Self-Improving, RAG-Enhanced Framework for Automatic Knowledge Graph Construction from Climate Event News. In *Proceedings of the International ISCRAM Conference*. <https://doi.org/10.59297/wjmsp389>
2. Liu, Z., & **Hao, H.**\* (2025). Optimizing Shelter Site Locations in Residential Community: A GeoSimulation and Genetic Algorithm Approach. In *Proceedings of the International ISCRAM Conference*. <https://doi.org/10.59297/p7p13y73>
3. **Hao, H.**, & Wang, Y\*. (2022). Smart Curb Digital Twin: Inventorying Curb Environments using Computer Vision and Street Imagery. *2nd Annual International Conference on Digital Twins and Parallel Intelligence (IEEE DTPI 2022)*. Boston, U.S.
4. **Hao, H.**, Wang, Y.\*, & Wang, Q. (2022). Simulating Urban Population Activities under Extreme Events with Data-Driven Agent-Based Modeling. *2022 ASCE’s Construction Institute and Construction Research Council*. Arlington, VA; March 9-12, 2022.
5. **Hao, H.**, Wang, Y.\*. (2020). Hurricane Damage Assessment with Multi-, Crowd-Sourced Image Data: A Case Study of Hurricane Irma in the City of Miami. In *17th International Conference on Information Systems for Crisis Response and Management* (pp. 825–837). Blacksburg, VA (USA): Virginia Tech.
6. Xia, C., Hu, Y.\*, Chen, J., & **Hao, H** (2024). A Spatial-Temporal Community Vulnerability Assessment Framework Based on Human Mobility Trajectory Simulation. In *Computing in Civil Engineering 2023* (pp. 36-43).

## MANUSCRIPTS UNDER REVIEW/PREPARATION

1. **Hao, H.\*** et al. (202x) Uncovering Compound Urban Crises with Large Language Model-Assisted Knowledge Graph Construction (Under R&R).
2. **Hao, H.**\* et al. (202x) Resident-Centric Urban Village Renovation Assessment: Automated Plan Evaluation Using LLM Agents (In Preparation).

## RESEARCH PROJECT

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| Principal Investigator  2025.01 – 2027.12 | Project: NSFC Youth Scholar Program: Investigations on the patterns and spatial resilience of compound urban crises based on social sensing data (Award Number: 72404236, CNY 300,000) |
| Principal Investigator  for the Shenzhen campus  2025.06 – 2027.6 | Project: 1+1+1 CUHK-CUHK(SZ)-GDST Joint Collaboration Fund - Urban Intelligence and Analytics Young Scholar Project  (Award Number: 4760449, HKD$ 131,000; RMB$ 180,000) |
| Principal Investigator  2024.04 – 2027.03 | University Development Fund (a.k.a start-up fund) of the Chinese University of Hong Kong (Shenzhen) (Award Number: UDF03003228, CNY 1,039,999) |
| Principal Investigator  2023.09 – 2024.05 | Project: Surveying Shenzhen residents’ willingness-to-pay for low-carbon strategies funded by the World Resource Institute (CNY 200,000) |
| Team member  2025.06 – 2028.05 | Project: 1+1+1 CUHK-CUHK(SZ)-GDST Joint Collaboration Fund – Laboratory of Geospatial Intelligence (CNY 6,000,000) |
| Lead Researcher  2021.10-2023.05 | Project: NSF SCC-PG: SmartCurb: Building Smart Urban Curb Environment (Award Number: 2124858, Fund: USD 149,999) |
| Lead Researcher  2021.08-2022.08 | Project: Examining Digital Vulnerability to Flooding Among Subsidized Housing Residents in Florida Funded by National Hurricane Center (USD 2,500). |
| Lead Researcher  2020.07-2022.06 | Project: NSF SCC-PG: Coordinated Safety Management Across Smart Communities (Award Number: 1951816, USD 150,000) |
| Lead Researcher  2020.06-2021.05 | Project: NSF RAPID: Dynamic Interactions between Human and Information in Complex Online Environments Responding to SARS-COV-2 (Award Number: 2028012, Fund: USD 82,041). |

## ACADEMIC ACTIVITIES & PRESENTATION

2025

* 07/03 – 07/06: Attending and presenting at the 19th International Association for China Planning (IACP) conference, Xiamen, China.
* 06/23 – 06/27: Attending and presenting at the 19th International Conference on Computational Urban Planning and Urban Management (CUPUM); Chair the session “*Smart Cities - 2*”, London, the U.K.
* 05/18 – 05/21: Attending and presenting at the 22nd Information Systems for Crisis Response and Management Conference (ISCRAM), Halifax, Canada

2024

* 07/05 – 07/08: Attending and presenting at the 18th IACP Annual Conference; Chair the session “*Urban Carbon Emissions and Sustainability*”, Hangzhou, China.
* 01/11: Attending and presenting at Urban System Institute’s Inangular meeting held at the University of Hong Kong, Hong Kong, China.

2023

* 11/19: Attending and presenting at the 5th Chinese National Forum on Computational Social Science, Shenzhen, China.
* 07/26: Invited job talk at the University of Hong Kong, Hong Kong, China.
* 07/01-07/02: Attending the 17th IACP Annual Conference, Tianjin, China
* 04/27: Invited job talk at the Chinese University of Hong Kong, Shenzhen.
* 03/17: Attending and presenting in the Sub-Forum on Architecture, Urban and Rural Planning, and Landscape Architecture of the 8th Tongji University International Youth Scholars Forum.
* 02/25: Attending and presenting at the Youth Forum of Urban and Rural Planning Frontier held by Chongqing University.
* 02/06: Attending and presenting in the Sub-Forum on College of Architecture and Art of Xinghai Forum held by Dalian University of Technology.

2022

* 12/21-22: Attending the 1st IACP Planning Research & Career Development Symposium and presenting research poster, Gainesville, FL, USA
* 12/15: Attending NSF-funded AI in Transportation workshop and presenting research posters, Gainesville, FL, USA
* 11/30: Holding a training webinar: “Collecting Disaster Debris Data with Social Media and Crowdsourcing” for the SUMMEER community.
* 09/15 – 09/16: Attending NSF-funded SUMMEER workshop, San Luis Obispo, CA, USA.
* 03/09 – 03/12: Attending and presenting at the Construction Research Congress (CRC) 2022 Conference, Washington, DC.

2021

* 07/10 – 08/10: Attending and presenting at the 61st Associate of Collegiate Schools of Planning (ACSP) conference (virtual).
* 06/09 – 06/11: Attending and presenting at the 17th International Conference on Computational Urban Planning and Urban Management (CUPUM) (virtual).
* 05/23 – 05/26: Attending and presenting at the 17th Information Systems for Crisis Response And Management Conference (ISCRAM) (virtual).

2018

* 08/28 – 08/29: Attending and presenting at the International Symposium on Future Active Safety Technology Toward Zero Traffic Accidents (FAST-zero’18) conference. Blacksburg, VA, USA.

## TEACHING

**The Chinese University of HongKong, Shenzhen**

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| CSS 5220 Computational Thinking in Social Science Application | 2024 Aut (CTE: 6.0) | Instructor |
| URM 2040 Principles and Application of Geographic Information System (GIS) | 2024 Aut (CTE: 5.8) | Instructor |
| GEC 3202 Urban Resilience, Navigating Challenges in Modern City | 2024 Sum (CTE: 5.9) | Instructor |
| URB 5430 Urban Spatial Analysis and Planning | 2025 Spr  2024 Spr (CTE: 6.0) | Instructor |
| URB 5420 Digitalizing Urban Environment for Sustainable and Resilient Cities | 2025 Spr  2023 Aut (CTE: 6.0) | Instructor |

**University of Florida**

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| URP 6223 Introduction to Urban Analytics | 2023 Spr | Co-developer |
| URP 6270 Introduction to Planning Information Systems | 2023 Spr | Co-Instructor |
| URP 6270 Introduction to Planning Information Systems | 2022 Aut | Co-Instructor  Teaching Assistant |
| EDG6931 Teach Adult Learners | 2022 Spr | Student |

**Virginia Polytechnic Institute and State University**

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| CEE4664 Pavement Design | 2017 Aut | Teaching Assistant |
| GTA Training Workshop | 2017 Aut | Workshop Attendee |

## AWARDS AND HONOR

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| 2023 | **Paul and Malea Zwick Graduate Student Award** awarded by the Department of Urband and Regional Planning at the University of Florida ($1,000) |
| 2022 | **Certificate of Outstanding Merit** awarded by the International Center of the University of Florida. |
| 2019-23 | **Graduate School Funding Award** awarded by the Graduate School of the University of Florida ($34,000/year) |
| 2021 | **Research Promotion Initiative** awarded by the University of Florida’s Office of Strategic Communications and Marketing ($2,000). |
| 2020-22 | **Travel Funds** awarded by the Department of Construction and Planning, the University of Florida (for registering and participating in conferences). |
| 2017 | **Teaching Assistantship** awarded by the Charles Edward Via, Jr. Department of Civil and Environmental Engineering, Virginia Tech. |

## ACADEMIC SERVICE

University/School/College services:

* HSS faculty search committee member for:
  + Computational Social Science division (2024.08 – 2025.07)
  + Digital Translation division (2024.08 – 2025.07)
* University Institutional Review Board (IRB) member (2024.07 – 2025.06)
* Interviewing graduate students for
  + Urban Studies Master program (~20 per year)
  + Computational Social Science Master & Ph.D. program (~40 per year)
* HSS Research and Innovation Committee (2023.11 – 2024.10)

Journal ad-hoc reviewer for:

* International Journal of Disaster Risk Reduction (4);
* Computers, Environment, and Urban System (2);
* Nature Communication (1);
* Advanced Engineering Informatics (1);
* Cities (1);
* Journal of Management in Engineering (1);
* Urban Climate (1);
* Scientific Report (1);
* Disasters (1);
* Architectural Engineering and Design Management (1);
* IEEE Transactions on Computational Social Systems (1);
* International Journal of Disaster Risk Science (1);
* Journal of Computing in Civil Engineering (1);
* World Development Sustainability (1);
* Journal of Aging & Social Policy (1);
* Travel Behavior & Society (1);
* International Conference on Computer Science and Application Engineering (ICCSAE conference) (1).

Professional members at:

* + Information Systems in Crisis Response and Management (ISCRAM) Community
  + International Association for China Planning (IACP)
  + American Society of Civil Engineers (ASCE)

## TECHNICAL SKILL

* **Programming**: Python, MATLAB, PyTorch, Apache Kafka & Spark
* **Software**: ArcGIS suites, SAS, CityEngine, AutoCAD, Microsoft suites
* **Language**: English, Mandarin