

CE HOU (ALBERT)

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EDUCATION

Hong Kong University of Science and Technology	Hong Kong SAR, China
Doctor of Philosophy (PhD) in Civil Engineering	Feb 2023 – Now
• Research interest: Geospatial artificial intelligence (GeoAI); AI for SDG; urban sensing; sustainable urban development	
• Advisors: Prof. Fan Zhang and Prof. Sen Li	
University College London	London, United Kingdom
Master of Science	Sep 2021 – Sep 2022
• Major in Spatial Data Science and Visualization	
• Advisor: Prof. Chen Zhong	
Wuhan University	Wuhan, China
Bachelor of Engineering	Sep 2017 – Jun 2021
• Major in Geodesy and Geomatics Engineering	
• Advisors: Prof. Bao Zhang and Prof. Yibin Yao	

VISITING AND RESEARCH EXPERIENCE

University of California, Berkeley	CA, United States
Visiting PhD student	Mar 2025 (expected) – Sep 2025 (expected)
• Advisor: Prof. Lu Liang	
Peking University	Beijing, China
Visiting PhD student	Feb 2024 – Now
• Advisors: Prof. Fan Zhang, Prof. Lei Dong, and Prof. Yu Liu	
Tsinghua University	Beijing, China
Research Assistant	Jul 2022 – Dec 2022
• Advisor: Prof. Zhu Liu	
The Bartlett School of Sustainable Construction, UCL	London, United Kingdom
Research Assistant	May 2022 – May 2023
• Advisors: Prof. Zhifu Mi and Dr. Haoran Zhang	

PUBLICATIONS

Ongoing works:

1. Yidan Wang, Fan Zhang*, **Ce Hou**, Yingjing Huang, Bin Chen, Filip Biljecki, Limin Zhang. Uncovering historical city connection with satellite imagery (Submitted to *Nature*)
2. Entong Ke, **Ce Hou**, Tianshun Gu, Quan Qin, Qinyu Cui, Haochen Shi, Yan Zhang*, Tian Lan*. Half-life of urban nights: An intensity- and semantics- independent measure of nighttime activity decay (Under review in *Nature Cities*)

Journal articles:

1. Maoran Sun, **Ce Hou**, Qiaosi Li, Fan Zhang, Ronita Bardhan, Qunshan Zhao (2026). Deciphering Exterior: Building Energy Efficiency Prediction with Emerging Urban Big Data. *npj urban Sustainability*. <https://doi.org/10.1038/s42949-026-00348-7>
2. Qianbao Hou, **Ce Hou**, Fan Zhang, Qihao Weng (2025). Multi-source geo-localization in urban built environments for crowd-sourced images by contrastive learning. *ISPRS Journal of Photogrammetry and Remote Sensing*. <https://doi.org/10.1016/j.isprsjprs.2025.09.024>
3. Furong Jia, Lanxin Liu, **Ce Hou**, Fan Zhang*, Xinyan Liu, Yu Liu (2025). Towards Interpretable Geo-localization: a Concept-Aware Global Image-GPS Alignment Framework. *arXiv preprint arXiv:2509.01910*.
4. **Ce Hou**, Fan Zhang*, Yuhao Kang, Zhuangyuan Fan, Sen Li (2025). Transferring population group knowledge from multimodal large language model to small model: using urban safety

- perception evaluation as case study, 07 May 2025, PREPRINT (Version 1) available at Research Square [<https://doi.org/10.21203/rs.3.rs-6351052/v1>]
5. **Ce Hou**, Fan Zhang*, Yong Li, Haifeng Li, Gengchen Mai, Yuhao Kang, Ling Yao, Wenhao Yu, Yao Yao, Song Gao, Min Chen, Yu Liu (2025). Urban Sensing in the Era of Large Language Models. *The innovation*. 6(1). DOI: <https://doi.org/10.1016/j.xinn.2024.100749>
 6. **Ce Hou**, Yuhao Kang, Fan Zhang*, Song Gao, Yong Li, Fabio Duarte, Sen Li (2024). “Transferred bias” uncovers the balance between the development of physical and socio-economic environments of cities. *Annals of the American Association of Geographers*. <https://doi.org/10.1080/24694452.2024.2412173>
 7. Lei Wang, **Ce Hou**, Yecheng Zhang, Jie He* (2024). Measuring solar radiation and spatio-temporal distribution in different street network direction through solar trajectories and street view images. *International Journal of Applied Earth Observation and Geoinformation*. <https://doi.org/10.1016/j.jag.2024.104058>
 8. Piyu Ke, Xiaofan Gui, Wei Cao, Dezhi Wang, **Ce Hou**, Lixing Wang, Xuanren Song, Yun Li, Biqing Zhu, Jiang Bian, Stephen Sitch, Philippe Ciais, Pierre Friedlingstein, and Zhu Liu* (2023). Near-real-time monitoring of global ocean carbon sink. arXiv preprint arXiv:2312.01637, 2023.
 9. Yikang Wang, Yuhao Kang, Haokun Liu, **Ce Hou**, Bing Zhou, Shan Ye, Yuyan Liu, Jinmeng Rao, Zhenghao Pei, Xiang Ye, Song Gao (2023). Choosing GIS graduate programs from afar: Chinese students’ perspectives. *Transactions in GIS*. DOI: <https://doi.org/10.1111/tgis.13037>

Book chapter:

1. **Ce Hou**, Yong Li, Fan Zhang* (2024). Sensing Urban Physical Environment with GeoAI and Street-Level Imagery. *Handbook of Geospatial Approaches to Sustainable Cities*.

HONORS

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| • Overseas Research Award | 2025 |
| • Best Poster Award, the 2nd Research Summit of Urban Science and Human Dynamics | 2024 |
| • Creativity Award, Research Summit of Urban Science and Human Dynamics | 2023 |
| • Bezos/Musk Prize for Entrepreneurial Potential in Knight Frank Dubai Housing Data Hackathon | 2022 |
| • Excellent undergraduate graduation design, Wuhan University | 2021 |
| • Distinct Graduate Student, Wuhan University | 2021 |
| • Distinct Student, Wuhan University | 2021 |
| • Li Qinghai Scholarship for Outstanding Students in Geomatics | 2021 |
| • First Class Scholarship, Wuhan University | 2021 |
| • Distinct Student, Wuhan University | 2020 |
| • Outstanding student leaders | 2020 |
| • Second Class Scholarship, Wuhan University | 2020 |
| • Social activist Student, Wuhan University | 2020 |
| • Merit Student, Wuhan University | 2019 |

INVITED TALKS

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| Invited talk | Wuhan, China |
| Invited talk at the School of Public Administration, China University of Geosciences (Wuhan) | Mar 2025 |

GRANTS

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- **Co-Investigator**, Research on the Modernization Path of Street Ecological Governance from a Human-Computer Collaboration Perspective, funded by the *Youth Fund Project of Humanities and Social Sciences, Ministry of Education*, ¥80,000 Jun 2025 – Jun 2028

TEACHING EXPERIENCE

Geospatial Science & Technology for Smart City (CIVL4100U)

Hong Kong SAR, China

Teaching assistant 2023-24 Fall

Introduction to Smart City Economics (CIVL4640) Hong Kong SAR, China
Teaching assistant 2024-25 Spring

COMMUNITY SERVICES

The Chinese Professional in Geographic Information Systems Online
BOD student member Jan 2026 – Now
Fulfilling board responsibilities and participate in CPGIS's management and development.

GISphere Online
Co-chair Mar 2022 – Mar 2024
Participate in organizing online seminars (GISalon) and people interview section (GIStory), assisting in managing the official WeChat account and publishing tweets.

The Chinese Professional in Geographic Information Systems Online
Volunteer Dec 2021 – Now
Assist in managing the official WeChat account and publishing tweets.

Journal reviews:

Computer, Environment and Urban System; International journal of Geographical Information Science; Scientific Data; Humanity and Social Science Communications; Information Geography; Scientific Reports; Journal of Urban Technology; Journal of Asian Architecture and Building Engineering; Computational Urban Science