

CE HOU (ALBERT)

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EDUCATION

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| Hong Kong University of Science and Technology Doctor of Philosophy (PhD) in Civil Engineering | Hong Kong SAR, China Feb 2023 – Now |
| <ul style="list-style-type: none">Research interest: Geospatial artificial intelligence (GeoAI); AI for SDG; urban sensing; sustainable urban developmentAdvisors: Prof. Fan Zhang and Prof. Sen Li | |
| University College London Master of Science | London, United Kingdom Sep 2021 – Sep 2022 |
| <ul style="list-style-type: none">Major in Spatial Data Science and VisualizationAdvisor: Prof. Chen Zhong | |
| Wuhan University Bachelor of Engineering | Wuhan, China Sep 2017 – Jun 2021 |
| <ul style="list-style-type: none">Major in Geodesy and Geomatics EngineeringAdvisors: Prof. Bao Zhang and Prof. Yibin Yao | |

VISITING AND RESEARCH EXPERIENCE

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| University of California, Berkeley Visiting PhD student | CA, United States Mar 2025 (expected) – Sep 2025 (expected) |
| <ul style="list-style-type: none">Advisor: Prof. Lu Liang | |
| Peking University Visiting PhD student | Beijing, China Feb 2024 – Now |
| <ul style="list-style-type: none">Advisors: Prof. Fan Zhang, Prof. Lei Dong, and Prof. Yu Liu | |
| Tsinghua University Research Assistant | Beijing, China Jul 2022 – Dec 2022 |
| <ul style="list-style-type: none">Advisor: Prof. Zhu Liu | |
| The Bartlett School of Sustainable Construction, UCL Research Assistant | London, United Kingdom May 2022 – May 2023 |
| <ul style="list-style-type: none">Advisors: Prof. Zhifu Mi and Dr. Haoran Zhang | |

PUBLICATIONS

Ongoing works:

- Yidan Wang, Fan Zhang*, **Ce Hou**, Yingjing Huang, Bin Chen, Filip Biljecki, Limin Zhang. Uncovering historical city connection with satellite imagery (Submitted to *Nature*)
- 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:

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

GRANTS

- **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

| | |
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| Geospatial Science & Technology for Smart City (CIVL4100U) | Hong Kong SAR, China |
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Teaching assistant

2023-24 Fall

Introduction to Smart City Economics (CIVL4640)

Teaching assistant

Hong Kong SAR, China

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