Chenglong Wang

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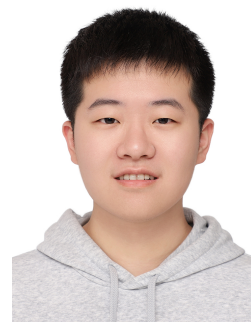
EDUCATION

Peking University   Shenzhen, CN
M.S. in Geography (Smart City and Big Data)   2023/09–2026/06 (Expected)

- − Thesis: TBD.

Wuhan University   Wuhan, CN
B.S. in Geographic Information Science, GPA: 3.98/4.00 (ranked 1st/60 in the dept.)   2019/09–2023/06

- − Thesis: Urban Land-use Recognition and Monitoring Based on Multi-source Heterogeneous Spatial Big Data: a Multimodal Deep Learning Framework.

EXPERIENCE

Microsoft Research Asia   Beijing, CN
AI Research Intern at Social Computing Group (SCG)   2024/07 (Expected)

- − Mentor: Prof. Fangzhao Wu, Xing Xie
- − Topics: Societal AI.

Peking University   Shenzhen, CN
Team Member at SUPD-GeoAI Lab   2022/09–2026/06 (Expected)

- − Supervisor: Prof. Zhaoya Gong
- − Topics: GeoAI, Spatiotemporal Data Mining, AI for Cartography, and Spatial Interaction.

SenseTime Research   Shanghai, CN
AI Research Intern at Foundamental Vision Group (FVG)   2022/05–2022/09

- − Mentor: Prof. Lewei Lu, Jifeng Dai
- − Topics: Multi-modal Large Language Model.

Wuhan University   Wuhan, CN
Undergraduate Research Intern at Intelligent Information Processing Lab (IIP)   2022/01–2022/09

- − Supervisor: Prof. Zhenzhong Chen
- − Topics: Image and Video Understanding.

Wuhan University   Wuhan, CN
Undergraduate Research Intern at Urbanisation Research Group (WURG)   2021/01–2021/12

- − Supervisor: Prof. Mengjun Kang
- − Topics: Information Theory of Cartography, Image Quality Assessment, and 3D WebGIS.

PUBLICATIONS

Peer-reviewed Journal Articles ([1]co-first author, [*]corresponding author)

1. **Chenglong Wang**, Tianjiao Chen, Yuqian Liu, Mengjun Kang[*], Shiliang Su, Binbo Li. TransMI: a Transfer-learning method for generalized Map Information evaluation. *Cartography and Geographic Information Science*, 2024. (JCR Q1, Top Journal in Cartography)

2. Binbo Li, Donghai Xie[*], Yu Wu[*], Lijuan Zheng, Chongbin Xu, Ying Zhou, Yibo Fu, **Chenglong Wang**, Bin Liu, Xin Zuo. Synthesis and Detection Algorithms for Oblique Stripe Noise of Space-borne Remote Sensing Images. *IEEE Transactions on Geoscience and Remote Sensing*, 2024. (JCR Q1, Top Journal in Remote Sensing)

3. Junfeng Xie, Xing Lv[*], Cun Chu, Ren Liu, Fan Mo, Binbo Li, **Chenglong Wang**. An Improved Image Registration Algorithm for Thermal Infrared and Panchromatic Image Based on Geometric Structural Properties. *ISPRS Annals of the Photogrammetry Remote Sensing and Spatial Information Sciences (ISPRS Annals), 2023.*

Peer-reviewed Conference Papers ([1]co-first author, [*]corresponding author)

1. **Chenglong Wang**[1*], Zhicheng Deng[1]. Multi-perspective Spatiotemporal Context-aware Neural Networks for Human Mobility Prediction. *Proceedings of the International Conference on Advances in Geographic Information Systems (SIGSPATIAL) Workshops, 2023.*

2. Guanchen Ding[1], Wenwei Han[1], **Chenglong Wang**[1], Mingpeng Cui, Lin Zhou, Dianbo Pan, Jiayi Wang, Junxi Zhang, Zhenzhong Chen[*]. A Coarse-to-Fine Boundary Localization method for Naturalistic Driving Action Recognition. *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, 2022.

Submitted Journal Articles ([1]co-first author, [*]corresponding author)

1. **Chenglong Wang**, Yuhao Kang, Zhaoya Gong[*], Pengjun Zhao, Yu Feng, Wenjia Zhang, Ge Li. CartoAgent: a multi-modal large language model empowered multi-agent mapping framework and its application in map style transfer and evaluation. *International Journal of Geographical Information Science*, submitted in 2024/01/31.

2. Zhaoya Gong[1], Binbo Li[1], **Chenglong Wang**, Jun Chen, Pengjun Zhao[*]. BF-SAM: a multi-modal urban foundation model for building function identification. *International Journal of Geographical Information Science*, submitted in 2024/01/31.

3. Zhaoya Gong[1], **Chenglong Wang**[1], Bin Liu, Binbo Li, Wei Tu, Jun Chen, Pengjun Zhao[*]. Multi-spatial urban function modeling: A multimodal deep network approach for transfer and multi-task learning. *International Journal of Applied Earth Observation and Geoinformation*, submitted in 2023/12/24.

4. Zhaoya Gong[1], Yuting Chen[1], **Chenglong Wang**[1], Bin Liu, Pengjun Zhao[*], Zhengzi Zhou. Learning spatial interaction representation with Heterogeneous Graph Convolution Networks for urban land-use inference. *International Journal of Geographical Information Science*, submitted in 2022/11/17.

Journal Articles in Preparation

1. Supervised by Prof. Zhaoya Gong and collaborated with Bin Liu, Yutong Zhong. The structures and semantics of multi-scale intercity human dynamics: an analysis using poincaré embedding.

2. Supervised by Prof. Zhaoya Gong and collaborated with Binbo Li, Zhicheng Deng. Intercity human mobility prediction algorithm based on fusion of spatiotemporal representation: MVST-GRU.

PRESENTATIONS

Oral Presentations

1. Oral Presentation (2023): Multi-perspective Spatiotemporal Context-aware Neural Networks for Human Mobility Prediction. In *ACM SIGSPATIAL HuMob Challenge*, Nov. 13, 2023, Hamburg, Germany.

2. Oral Presentation (2023): Uncovering the global and local structures of urban networks via Poincare Embedding. In *City+2023@Perth*, Sep. 8-10, 2023, Perth, Australia.

3. Oral Presentation (2023): Uncovering the global and local structures of urban networks via Poincare Embedding. In *International Symposium on Location-Based Big Data and GeoAI*, Aug. 12, 2023, Cape Town, South Africa.

4. Oral Presentation (2023): TransMI: a Transfer-learning method for generalized Map Information evaluation. In *Annual Conference on GIS Theory and Methods*, May 20, 2023, Guilin, China.

5. Thesis Defense (2023): Urban land-use recognition and monitoring based on multi-source heterogeneous spatial big data: a multimodal deep learning framework. In *Wuhan University*, May 14, 2023, Wuhan, China.

6. Oral Presentation (2022): A Coarse-to-Fine Boundary Localization method for Naturalistic Driving Action Recognition. In *IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops*, Jun. 20, 2022, New Orleans, USA.

SCHOLARSHIPS

1. Xia Jianbai Outstanding Student Scholarship, Wuhan University. (RMB: 6,000)	2022
2. First-class Undergraduate Scholarship, Wuhan University. (RMB: 3,000)	2022
3. Yu Gang & Song Xiao Scholarship, Wuhan University. (RMB: 20,000, Top-0.1%)	2021
4. First-class Undergraduate Scholarship, Wuhan University. (RMB: 3,000)	2021
5. China National Scholarship, Ministry of Education of People's Republic of China. (RMB: 8,000)	2020
6. First-class Undergraduate Scholarship, Wuhan University. (RMB: 3,000)	2020
7. Haibin Scholarship, Municipal Government of Kunshan. (RMB: 20,000, Top-0.1%)	2019

HONORS

1. Outstanding Graduate, Wuhan University.	2023
2. Luojia Role Model, Wuhan University. (Top-10/ 40,000)	2023
3. Pacemaker to Merit Student, Wuhan University. (Top-0.1%)	2022
4. Merit Student, Wuhan University.	2022
5. Pacemaker in Learning and Scientific Research, Wuhan University.	2022
6. Finalist in Top 10 Luojia Fengyun Student, Wuhan University. (Top-0.1%)	2022
7. Merit Student, Wuhan University.	2021
8. Social Activist, Wuhan University.	2021
9. Pacemaker in Learning and Scientific Research, Wuhan University.	2021
10. Merit Student, Wuhan University.	2020
11. Excellent Team Leader of Summer Social Practice, Hubei Committee of the Communist Youth League.	2020
12. Advanced Individual in Summer Social Practice, Wuhan University.	2020

AWARDS

1. Top-10, HuMob Challenge, International Conference on Advances in Geographic Information Systems.	2023
2. Excellent Bachelor's Dissertation in Wuhan University.	2023
3. Finalist, International Mathematical Contest in Modeling.	2022
4. Top-10, AICity Challenge, IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshops.	2022
5. Meritorious Winner, International Mathematical Contest in Modeling.	2021

6. First Prize, KQ Cup GIScience Competition (Software Development). 2021
7. First Prize, SuperMap Cup GIScience Competition (Software Development, Hubei). 2021
8. Second Prize, Challenge Cup Technological Innovation Competition (Hubei). 2021
9. Second Prize, National Mathematical Contest in Modeling (Hubei). 2021
10. Third Prize, SuperMap Cup GIScience Competition (Cartography, Hubei). 2021
11. First Prize, Chinese Mathematics Competition. 2020
12. First Prize, Hubei Mathematics Competition. 2020
13. Second Prize, National English Competition for College Students. 2020
14. Second Prize, Translation and Interpreting Contest (Hubei). 2020
15. First Prize, Mathematical Olympiad (Jiangsu). 2018
16. Second Prize, Chemical Olympiad (Jiangsu). 2018
17. Second Prize, Physics Olympiad (Jiangsu). 2018
18. Third Prize, Biological Olympiad (Jiangsu). 2018
19. Second Prize, Chemical Olympiad (Jiangsu). 2017

SERVICES

Service to the University

1. Undersecretary, Department of Sci-tech Practice, SRES, Wuhan University. 2019–2021
2. Undersecretary, Young Volunteers Association, SRES, Wuhan University. 2019–2021

Service to the Community

1. Member, GIS-info Group, GISphere. 2024–now

SKILLS

- **Programming:** Python, C/C++, Java, Matlab, C#, R, HTML, CSS, JavaScript.
- **Cartography & GIScience:** CorelDraw, Illustrator, Photoshop, ArcGIS, QGIS, ENVI, GEE.
- **Others:** SPSS, Blender, Unity, LaTeX, Git, SQL.

LANGUAGES

- **Chinese:** Mother tongue, native speaker.
- **English:** Fluent, CET-6:591, CET-4:621.

HOBBIES

- **Game of Go:** Yon-dan.
- **Ruan:** Grade III.