Chongshan Wan

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Website: https://101sorel.github.io/

Research interests: Trajectory mining; Machine learning; Graph deep learning

EDUCATION

Master of Cartography and Geography Information System

Wuhan University, China ***Sept. 2022 – Jun. 2024(Expected)***

- **GPA**: 3.49/4.0
- **WAM**:88.3

Bachelor of Remote Sensing Science and Technology

Wuhan University, China ***Sept. 2018 – Jun. 2022***

- **GPA**: 3.75/4.0
- **WAM**:88.5

PUBLICATION

[1] **Wan, C.**, Yue, P., Yang, C., Cai, C., & Liu, X. (2024). Lane Extraction from Trajectories at Road Intersections Based on Graph Transformer Network. International Journal of Geographical Information Science. (Under Minor Revision)

[2] Yuan, M., Yue, P., Yang, C., Li, J., Yan, K., Cai, C., & **Wan, C.** (2024). Generating lane-level road networks from high-precision trajectory data with lane-changing behavior analysis. International Journal of Geographical Information Science, 38(2), 243-273.

[3] Cai, C., Li, J., Huang, J., He, W., **Wan, C.**, & Guo, Y. (2024). MapEval: Comprehensive Benchmark Suite for BEV-based Local Online Map Construction Model. 2024 IEEE International Conference on Robotics and Automation (ICRA). (Under review)

PATENTS

[1] Yue, P.(Advisor), **Wan, C.**, Yang, C., & Cai, C. (2024), "A Method, System, Device, and Medium for Intersection Lane-level Topology Detection Based on Trajectory Data", Invention patent. (Under Initial Examination)

[2] Yue, P.(Advisor), **Wan, C.**, Yuan, M., & Cai, C. (2024), "A Method, System, Device, and Medium for Intersection Detection and Precise Range Determination Based on Trajectory Data", Invention patent. (Under Initial Examination)

[3] Yue, P.(Advisor), Cai, C., & **Wan, C**. (2024), "Method, Device, Equipment, and Medium for Incremental Generation of Road Networks Based on Trajectory Data", Invention patent. (Under Initial Examination)

RESEARCH PROJECTS

Road Topology Information Extraction from Crowdsourced Trajectory Data
(University-Industry Collaboration Project)
Researcher | *Advisor: Professor Peng Yue* *Dec. 2021-Dec. 2023*

- Collaborated with Changan Automobile to extract road topology from large-scale crowdsourced trajectory data.
- Focused on road intersection detection, range determination, and topological information extraction.
- Proposed algorithms for precise intersection range determination and lane extraction using Graph Transformer Networks (GTN). Authored one paper and two patents.

Transportation mode recognition from cellular signaling data
(University-Industry Collaboration Project)
Researcher | *Advisor: Professor Peng Yue* *Jun. 2022-Dec. 2022*

- Collaborated with Huawei Technologies to develop transportation mode recognition algorithms.
- Focused on recognizing transportation mode based on cellular signaling data with low spatial accuracy and low sampling rate.
- Designed supervised transportation mode recognition algorithms using Random Forest and unsupervised algorithms using Gaussian Mixture Models (GMM).

HONORS

- **Discovering Historical Cultural Heritage with Eye in Space** *Jan. 2022*
  Organized by the Asia-Pacific Space Cooperation Organization (APSCO)
  First Prize (awarded to the only winning team)
- **Top Ten Remote Sensing Constellation** *May 2022*
  Awarded to the winning team of the International Space Historical and Cultural Heritage Remote Sensing Competition
- **China Software Cup** *Oct. 2021*
  Third Prize (Top 5% of teams)
- **National College Mathematics Competition** *Dec. 2020*
  Third Prize
- **Wuhan University Outstanding Student Scholarship** *Dec. 2021*
  Second class (1000 RMB)
- **Wuhan University Outstanding Graduate** *May 2022*

SKILLS

Programming Language: Python, C++
Python Package: PyTorch / SciPy / NumPy / sklearn