CHEN CHU

State Key Laboratory of Resources and Environmental Information System
Institute of Geographic Sciences and Natural Resources Research
Chinese Academy of Sciences
chuchen0411@igsnrr.ac.cn
https://chuchen2017.github.io/

EDUCATION

University of Chinese Academy of Sciences *Beijing, China*
M.S., Cartography and Geographic Information System *2021-2024*
Advisor: Prof. **Feng Lu** and Assoc. Prof. **Hengcai Zhang**
State Key Laboratory of Resources and Environmental Information System
Institute of Geographic Sciences and Natural Resources Research, CAS
GPA: 3.70

Yunnan University *Kunming, China*
B.S., Geographic Information Science *2017-2021*
Advisor: Assoc. Prof. **Fei Zhao**
School of Earth Sciences
GPA: 3.57, Ranking: 1 / 33

AWARDS AND HONORS

2023 Second place at ACM SIGSPATIAL2023 Student Research Competition
2023 ACM SIGSPATIAL 2023 Student Travel Grant
2023 First Class Director's Scholarship of IGSNRR, CAS (top 15%)
2023 First Class Academic Scholarship of IGSNRR, CAS
2023 Merit Student of University of Chinese Academy of Science
2022 Academic Scholarship of IGSNRR, CAS
2022 Merit Student of University of Chinese Academy of Science
2022 Outstanding Student Award of University of Chinese Academy of Science
2021 Principal's Scholarship of Yunnan University (10 out of all 4000+)
2021 Outstanding Bachelor's Thesis Award of Yunnan Province
2020 National Scholarship (Top 0.5%)
2020 Excellent Student Cadre of Yunnan Province

PUBLICATIONS

2023 **Chen Chu**, Hengcai Zhang, Feng Lu. TrajGDM: A New Trajectory Foundation Model for Simulating Human Mobility. ACM SIGSPATIAL 2023 Student Research Competition.

2023 **Chen Chu**, Hengcai Zhang, Feng Lu. Simulating Human Mobility with A Trajectory Generation Framework Based on Diffusion Model. International Journal of Geographical Information Science (Under review, 2nd round), Nov 2023.

2023 **Chen Chu**, Hengcai Zhang, Peixiao Wang, Feng Lu. DeepIndoorCrowd: Predicting Crowd Flow in Indoor Shopping Malls with an Interpretable Transformer Network. Transactions in GIS, 27, 1699–1723.

2023 **Chen Chu**, Hengcai Zhang, Jiayin Zhang, Lin Cong, Feng Lu. Assessing Impacts of the Russia-Ukraine Conflict on Global Air Transportation: from the View of Mass Flight Trajectories. Journal of Air Transport Management, 115, 102522, 2024.

2022 **Chen Chu**, Hengcai Zhang, Feng Lu. Inferring Consumption Behavior of Customers in Shopping Malls from Indoor Trajectories. Journal of Geo-Information Science, 24(6): 1034-1046.

2021 Fei Zhao (Supervisor), **Chen Chu**, Rui Liu, et al. Assessing Light Pollution Using POI and Luojia1-01 Night-Time Imagery from a Quantitative Perspective at City Scale. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 14, 7544-7556.

2022 Zhengbao Sun, Lizhen Wang, **Chen Chu**. Outlier Reconstruction of NDVI for Vegetation-Cover Dynamic Analyses. Applied Sciences, 12(9), 4412.

2023 Fei Zhao, Zhiyan Peng, Qian Jiangkang, **Chen Chu**. Detection of geothermal potential based on land surface temperature derived from remotely sensed and in-situ data. Geo-spatial Information Science, 1-17.

PRESENTATIONS

2023 **ACM SIGSPATIAL 2023 Student Research Competition.** TrajGDM: A New Trajectory Foundation Model for Simulating Human Mobility. Nov 13, 2023, Hamburg, Germany.

2023 **The 18th Annual Conference on Geographic Information Theory and Methods.** A Generative Trajectory Generation Model. May 20, 2023, Guilin, China.

2021 **The 17th Annual Conference on Geographic Information Theory and Methods.** Inferring Consumption Behavior of Customers in Shopping Malls from Indoor Trajectories. Sep 8, 2021, Hangzhou, China.

RESEARCH EXPERIENCE

Digital Mapping and Integrated Network Managing Technologies for Large Underground Space *2021.10-2025.10*

- Funded by National Key Research and Development Program of China.
- Designed the data collecting method and formed standardized underground 3D datasets.
- Developed a unified spatial encoding method for 3D space.

Intelligent Features Extraction and Spatial-Temporal Information Fusion for Digital Twin *2022.10-2026.10*

- Funded by National Key Research and Development Program of China.
- Designed feature extraction and generation methods based on artificial intelligence algorithms.

Intelligent Indoor Positioning and GIS *2020.10-2021.10*

- Funded by National Key Research and Development Program of China.
- Developed an indoor pedestrian stay points detection algorithm based on ST-DBSCAN algorithm.
- Proposed an indoor human mobility modeling and analyzing framework.

ACM SIGSPATIAL GISCUP 2021 *2021.5-2021.8*

- Designed a multi-modal fusion neural network to predict taxis' estimated time of arrival.
- The prediction accuracy ranked 39 among all 1172 teams.

An Intelligent Transportation Managing System Based on Video GIS (host) *2019.7-2021.6*

- Funded by National College Student Innovation and Entrepreneurship Training Program.
- Developed a vehicle identifying and tracing system with YOLO and DeepSORT.
- Developed a server-based intelligent transportation managing system based on GeoServer and Flask.

Lancaster University, Environmental Science Summer School *Lancaster, UK* *2019.7-2019.8*

- Researched and modeled the effect of pollution on a location river with spatial analysis.
- Delivered a speech at the closing ceremony of the summer school as the student representative.

TECHNICAL SKILLS

Programming languages: Python (PyTorch), R, JavaScript, C#, C
Geospatial software: ArcGIS Pro, QGIS
TOEFL:104 (Speaking:24, Writing:26, Reading:28, Listening:26)

RESEARCH INTERESTS

- Human Mobility Modeling
- GeoAI
- Machine Learning / Deep Learning
- Spatial Data Mining
- Cross-city Learning
- Interpretable Spatiotemporal Prediction
- Spatial Statistic
- Location Encoding