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

EDUCATION

University of Chinese Academy of Science Beijing, China
M.A., Geographic Information Science 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

Yunnan University Kunming, China
B.S., Geographic Information Science 2017-2021
Advisor: Assoc Prof. Fei Zhao

AWARDS AND HONORS

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 Chinese National Scholarship
2020 Excellent Student Cadre of Yunnan Province

PUBLICATIONS

2023 **Chen Chu**, Hengcai Zhang, Feng Lu. Simulating Human Mobility with a Generative Trajectory Generation Model. Submitting to International Journal of Geographical Information Science, Jul 2023.

2023 **Chen Chu**, Hengcai Zhang, Feng Lu. DeepIndoorCrowd: Predicting Crowd Flow in Indoor Shopping Malls with an Interpretable Transformer Network. Accepted by Transactions in GIS, Jul 2023.

2023 **Chen Chu**, Hengcai Zhang, Feng Lu. Impacts of the Russia-Ukraine Conflict on Global Air Transportation: from the View of Mass Flight Trajectories. Submitting to Journal of Air Transport Management, Mar 2023.

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, 2022.

2021 **Chen Chu**, Fei Zhao (Supervisor), 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, 2021.

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

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, 2023.

RESEARCH INTERESTS

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

PRESENTATIONS

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

2021 **Chen Chu**. Inferring Consumption Behavior of Customers in Shopping Malls from Indoor Trajectories. Annual Conference on Geographic Information Theory and Methods. 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. Developing 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. Developing feature extraction and generation methods based on artificial intelligent algorithms.

Intelligent Indoor Positioning and GIS

2017.10-2021.10

Funded by National Key Research and Development Program of China. Developed an indoor trajectories clustering algorithm. Proposed an indoor human mobility modeling framework.

ACM SIGSPATIAL GISCUP 2021

2021.5-2021.8

Designed a multi-modal fusion 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, R, JavaScript, C#, C/C++
Geospatial software: ArcGIS Pro, QGIS