Pengyu Chen

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About Me

Master's student in Geography at the University of South Carolina with a strong foundation in GIScience, remote sensing, and deep learning. My research focuses on integrating feature learning, geospatial computing, computer vision, and statistical analysis to investigate spatial behavior.

Education

M.S.	**University of South Carolina**, Geography	Sept 2024 – May 2026
	• GPA: 3.8+/4.0 ‖ TA scholarship (Lab Instructor)	
B.S.	**Wuhan University of Technology**, Geographic Information Science	Sept 2020 – June 2024
	• GPA: 3.5/4.0 ‖ Chair of GIS Association of Wuhan University of Technology	

Publications

A GAN-Enhanced Deep Learning Framework for Rooftop Detection from Historical Aerial Imagery   Mar 2025
Pengyu Chen, Sicheng Wang, Chengyang Wang, Senrong Wang. etc
https://doi.org/10.48550/arXiv.2503.23200 ↗

Intelligent Bear Prevention System Based on Computer Vision-An Approach to Reduce Human-Bear Conflicts in the Tibetan Plateau Area, China   Mar 2025
Pengyu Chen, Fei Teng, Yunyan Du, Jiawei Yi, Yi Li, John A. Kupfer
https://doi.org/10.48550/arXiv.2503.23178 ↗

Socio-demographic inequalities in the impacts of extreme temperatures on population mobility   June 2023
Xinyue Gu, **Pengyu Chen**, Chao Fan
10.1016/j.jtrangeo.2023.103755 ↗

Multi-Agent Path Optimization Based on STA* Algorithm   Nov 2022
Ruixiang Cheng, Xinyu Wang, **Pengyu Chen**, Jiaxin Liu

Impacts of Ethiopia Dam on Vegetation and Water and Ecological Countermeasures   Nov 2022
Pengyu Chen, Tengyuan Liang, Zibin Wu
10.1088/1755-1315/1011/1/012044 ↗

Ongoing Projects

Sound, Space, and Sentiment——Understanding the Association of Urban Soundscapes and Perceptions
First author | Abstract submitted to AAG conference

Spatial Modeling of Fatal Traffic Accidents in South Carolina Using Poisson Point Process
co-first author

Research Experience

Wuhan University, Visiting Student & Research Assistant   Wuhan, China
                                                                                                July 2023 – July 2024
• Trained YOLO-based object detection algorithm and deployed model compression to the K210 microcontroller.

- Application: Detecting Tibetan brown bears and using K210 to drive water pumps and bear spray.
- Supervisor: Prof. Teng Fei

Harvard University Spatial Data Lab, Research Intern — remote, May 2024 – Oct 2024
- Spatial Data Laboratory (SDL) Internship Program
- Geographic Big Data Analytics, Spatio-Temporal Data Mining
- Supervisor: Dr. Yuhang Pan, Peking University

Clemson University, Research Intern — Remote, Sept 2022 – Jan 2023
- Data processing, data cleaning, and curve generation using MATLAB and Python.
- Published paper in the Journal of Transport Geography.
- Supervisor: Dr. Chao Fan

Teaching Experience

Landform Geography (GEOG 201), Lab Instructor — Columbia, SC, USA, Aug 2024 – present
- supervised by Dr. John A. Kupfer, Dr. Jean Taylor Ellis
- Instruct lab sessions, provide guidance, and grade assignments.

Professional Experience

Xuzhou Construction Machinery Group (XCMG) - Road Machinery Division, Algorithm Intern — Xuzhou, China, Jan 2022 – Mar 2022
- Developed digital roads using Leica software and presented results with ArcGIS.
- Implemented and modified curve fitting algorithms for practical applications.
- Supervisor: Bowen Wu

Leading Experience

GISinfo (Subprojects under GISphere), Development Team Leader,Members of the Council — Wuhan, China, Feb 2022 – present
- Developed backend using Django framework with Django REST Framework APIs, connected to MySQL database.
- Built front-end with Vue, managed user demand pool, and led backend development.
- website: https://gisphere.info/

Scholarship & Awards

Graduate Teaching Assistant Scholarship (start from 2024 fall)

AAG Graduate student Travel grant ($250)

MathorCup Modeling Competition, Third Prize

2022 Huazhong Cup Mathematical Modeling Competition, Second Prize

Technologies

Programming Languages: Python, C#, Java, C

Software: MySQL, Unity, Unreal Engine, ArcGIS, QGIS, MATLAB

Languages: English (TOEFL iBT 102), Chinese(First language)