

Han Zhang

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EDUCATION

Guilin University of Technology	B.S. in Geographic Information Science	Sep. 2021 – Jun. 2025
<ul style="list-style-type: none">GPA: 3.74/5.0 (View Transcript) Rank: 3/96Coursework: GIS Spatial Analysis Practice (88), Technology and Application of Remote Sensing (87), Design of Python Programming (95), Principles and Applications of Spatial Database (91)Ranked 1st in major during junior year, with GPA 4.2/5.0; Scored ≥ 95 in 43 courses and ≥ 90 in 51 courses throughout the undergraduate program		
Guilin University of Technology	<i>Minor in Big Data Intelligent Mapping and Simulation</i>	Sep. 2023 – Jun. 2025
<ul style="list-style-type: none">GPA: 4.26/5.0Coursework: Internet of Things Technology and Application (86), Location-Based Service Network and Big Data Technology (95), Virtual Reality and Real 3D Modeling (95)		

RESEARCH EXPERIENCE

Undergraduate Thesis: Optimization of Tropical Cyclone Detection and Area Estimation Algorithm Based on DynamiCyclone-YOLO	Dec. 2024 – Present
<ul style="list-style-type: none">Responsible for leveraging the National Institute of Informatics' KITAMOTO Asanobu infrared typhoon dataset, performing image preprocessing and LabelMe polygon annotation.Responsible for constructing and prototyping DynamiCyclone-YOLO on a YOLOv8 backbone, enhancing cyclone detection precision and area estimation.	
Road Extraction from Remote Sensing Imagery Based on Deep Learning	Apr. 2023 – Apr. 2024
<ul style="list-style-type: none">Built a multi-scale CoTPANeXt road extraction model that delivered high precision, recall, and mIoU, with seamless continuity at intersections and curves.Configured an Anaconda environment in PyCharm, leveraged LabelMe for batch polygon annotation of 1,000 rural Guilin UAV images, and prepared and defended the project proposal.	
Inversion of Coastal Chlorophyll-a Concentration Using Mixture Density Network	Apr. 2022 – Apr. 2023
<ul style="list-style-type: none">Developed a Mixture Density Network (MDN) inversion pipeline that fused in situ chlorophyll-a measurements from the Hong Kong EPD with Himawari-8 imagery via spatiotemporal co-registration and atmospheric correction, which significantly enhanced coastal chlorophyll-a retrieval accuracy.Reviewed more than 30 ocean-colour and MDN publications to select the optimal model architecture, and authored a 20-page technical proposal detailing the methodology and plan.	

PUBLICATIONS

Xie, J., **Zhang, H.**, Wang, F., & Zhou, B. (2024). Analysis and evaluation of multi-scale spatial characteristics of rural residential areas. *Geomatics & Spatial Information Technology*, 47(6), 4–7.
DOI: [10.3969/j.issn.1672-5867.2024.06.003](https://doi.org/10.3969/j.issn.1672-5867.2024.06.003)

You, Y., Yang, Y., & **Zhang, H.** (2023). Priority options for the 17 UN Sustainable Development Strategies: Based on the model network perspective. *BCP Business & Management EMEHSS*, 49, 266–279.
DOI: <https://doi.org/10.54691/bcpbm.v49i.5432>

COMPETITIONS

National Level	
• 3rd Prize – National Market Survey & Analysis Competition	2024
• Excellence Award, 12th National College GIS Application Skills Competition	2023

Provincial Level

- 1st Prize, 14th National Undergraduate Market Research and Analysis Competition 2024
- Outstanding Project, Innovation Program on “Road Extraction using Deep Learning” 2024
- Special Prize, Paper Competition – Guangxi Geo-Science Innovation Contest 2023
- 3rd Prize, National Mathematical Modeling Competition 2023
- 2nd Prize, 1st Guangxi College Translation & Adaptation Contest 2023
- 1st Prize, 13th National Undergraduate Market Research and Analysis Competition 2023
- 3rd Prize, 3rd Guangxi College English Translation Contest 2023
- Excellence Award, National College English Competition 2023
- Special Prize, 2nd Guangxi College English Translation Contest 2022
- 3rd Prize, National College English Competition 2022
- 3rd Prize, 1st Guangxi College English Translation Contest 2021

SCHOLARSHIPS & HONORS

Scholarships

- National Scholarship 2024
- The Special Prize Scholarship 2024
- The First Prize Scholarship 2023
- The First Prize Scholarship 2022

Honors & Titles

- Outstanding Graduate 2025
- Excellent League Member 2024
- Merit Student 2024
- Merit Student 2023
- Merit Student 2022

WORK EXPERIENCE

Hangzhou SensingX Technology Co., Ltd. *Data Processing & Analysis Engineer* Feb. 2024 – Apr. 2024

- Annotated urban underground pipeline defects using proprietary software and technical manuals, classifying 10,000+ images into corrosion, leakage, displacement, and other categories.
- Maintained strict annotation quality and consistency, enabling downstream defect detection models to achieve high precision.

Zaozhuang Public Security Bureau, Shizhong Branch Traffic Police Unit Dec. 2022 – Feb. 2023

- Classified and labelled 5,000+ traffic-accident images per official severity/type protocols (e.g., collision, rear-end, rollover).
- Honed visual-detail acuity and maintained high annotation accuracy under real-world, time-constrained conditions.

On-campus Internships

- Surveying Practice Total Station, Level Instrument
- Fundamental GIS Practice SuperMap, ArcGIS, Handheld GPS
- GIS Spatial Analysis Practice ArcMap, ArcScene, Excel
- Photogrammetry and Remote Sensing VirtuoZo, ENVI
- Spatial Database Practice PostgreSQL, PostGIS, pgAdmin, ArcMap, CAD, GeoServer
- LBS Development and Application Practice HTML, CSS, JavaScript, PostgreSQL, Baidu Map API

CAMPUS ACTIVITIES

Leaderships

- Secretary of the Youth League Branch & Class President Sep. 2024 – Jun. 2025
- Lecturer, Peer Teaching Program “Zhihui” May 2024 – Jun. 2025
- Deputy Director, Student Department, University Youth League Committee Oct. 2023 – Oct. 2024
- Study Secretary Sep. 2023 – Sep. 2024
- Deputy Head of Archives Department, Party Affairs Center Sep. 2022 – Sep. 2023
- Deputy Head, Secretariat, Math Modeling Association Jun. 2022 – Jun. 2023
- Secretary of the Youth League Branch Sep. 2021 – Sep. 2022

Social Practice

- “Three Going to the Countryside” Summer Social Practice 2023
- “Two Bombs, One Satellite” Spirit Volunteer Lecture Series 2023
- “Colorful Holiday” Rural Children Education Program 2023
- “Dream Fulfillment Project” for Underprivileged Students 2023
- 2023 Green Long March Scientific Expedition 2023
- “Three Going to the Countryside” Summer Social Practice 2022

CERTIFICATES & QUALIFICATION

Skills

- Development Tools: Visual Studio, VS Code, PyCharm, PgAdmin
- Programming and Web: C#, Python, HTML/CSS/JavaScript, SQL
- GIS & Remote Sensing Tools: ArcGIS, ENVI, SuperMap, MapGIS, CAD, CASS
- Modeling & Visualization: 3ds Max, Unity, SketchUp, Pix4D

Certifications

- National Certificate of Informatization Engineer – Geographic Information System Application Proficiency Examination (Level 2: GIS Application Practice)
- National Certificate of Informatization Engineer – Geographic Information System Application Proficiency Examination (Level 1: GIS Fundamental Theory)
- UAV Safety Theory Certificate
- Market Research Analyst Certificate