

## Education

### SWUST(Southwest University of Science and Technology)

Mianyang, China

B.S. IN GEOGRAPHIC INFORMATION SYSTEM

Sep. 2017 - Jul. 2021

- GPA: 3.506/5
- Rank: top 10%
- Related courses: Probability Theory and Mathematical Statistics (97), GIS secondary development (90), Advanced Mathematics (85), Database Basics (86), Mobile GIS Development Technology (84), Advanced Mathematics B2 (85), Linear Algebra A (80)

### Jinan University

Guangzhou, China

M.S. IN COMPUTER SOFTWARE AND THEORY

Sep. 2022 - Jul. 2025 (expected)

- GPA: 86.1/100
- Rank: 6/30
- Related courses: Advanced Numerical Analysis (90), Embedding Systems (90), Methodologies and Practice of Software Design (90), Advanced Computer Networks (88), Advanced Software Engineering (88), Analysis and Design of Algorithms (87), Encryption and Information Security (86)

## Research Interests

Mobile computing; Information security and privacy; Large language model.

## Research Experience

### Project on the interaction between multiple large language models

Guangzhou, China

APPLICATION AND ORGANIZATION OF LLMs

Jan 2024 - Present

- Supervisors: Prof. Zhetao Li
- Researched the features of different large language models and how to organize calls to multiple large language models for optimal results.
- Analyzed the possibilities for model collaboration and facing challenges.
- Designed the multi-LLM collaborative method to mitigate instruction backdoor attack. (In progress)
- Analysed privacy issues in organising the collaboration of multiple LLMs.
- Designed privacy-preserving mechanisms to protect sensitive information in user inputs and prompts across multiple LLM collaborations. (To be continued)
- Key words: LLMs, collaborative reasoning, optimisation, Privacy

### National Natural Science Foundation of China

Guangzhou, China

DEEP DATA ACQUISITION AND SERVICE-ORIENTED COMPUTING IN NEW CROWDSENSING NETWORKS

Jan 2021 - Present

- Supervisors: Prof. Zhetao Li
- Proposed a pattern-sensitive local differential privacy mechanism for finite-range time-series data collection in mobile crowdsensing and wrote a paper accepted by IEEE Transactions on Mobile Computing [1].
- Designed a time dimension perturbation to meet time-series versatile analysis in mobile crowdsensing, and the resulting paper is currently in preparation and is to be submitted to INFOCOM 2025s [2].
- Participated in sparse mobile crowdsensing task allocation research and was responsible for the paper code implementation and design, and the resulting paper is currently in preparation.
- Designed an incentive mechanism for personalized privacy-preserving crowd intelligence based on the Stackelberg game. This work has applied for a patent [3] and is now in the substantive review stage.
- Key words: Mobile crowdsensing, Differential privacy, Time series, Task allocation, incentive mechanism

### Southwest University of Science and Technology, School of Environment and Resources

Mianyang, China

BUILDING DETECTION ON REMOTE SENSING IMAGES

Dec 2020 - Jul 2021

- Utilized the Mask R-CNN algorithm, we identified the building in high-resolution remote sensing images. We found that the appropriate image pre-processing and post-processing approach for high-resolution remote sensing images would benefit the building detection accuracy.
- Designed improved Mask R-CNN enabling to solve the problem of detecting a single building in a continuous region.
- Key words: Mask R-CNN, Building detection, Remote sensing images

## Publications

- [1] Z. Li, **Zeng, Xiyu**, Y. Xiao, C. Li, W. Wu, and H. Liu, "Pattern-sensitive local differential privacy for finite-range time-series data in mobile crowdsensing," *IEEE Transactions on Mobile Computing*, pp. 1–15, 2024. doi: 10.1109/TMC.2024.3445973.
- [2] **Xiyu Zeng** and Z. Li, "Should support versatile time-series service? local differential privacy for time-series data in mobile crowdsensing," *To Be Submitted to INFOCOM 2025*,

[3] Z. Li, **Zeng, Xiyu**, S. Long, and T. Pei, “An incentive mechanism based on stackelberg game for personalised privacy-protecting crowdsensing: 202311727206.x[p],” Dec. 14, 2025.

## Extracurricular Activities

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### The Sixth Mathematical Modelling Competition for Undergraduates of Numerical Dimension Cup

China

DELIVERY CRISIS FOR TAKEAWAY RIDERS

2021

- Designed a reasonable design scheme for rider delivery hours and corresponding rewards and penalties for completion quality.
- Awarded the national first prize

### The 19th China Postgraduate Mathematical Modeling Competition ‘Huawei Cup’

China

OPTIMISATION PROBLEMS FOR COMBINATIONS OF SQUARE PARTS

2022

- Designed cutting programs to maximise sheet utilisation
- Awarded the national third prize

### The 15th “Blue Bridge Cup” Software Provincial Competition

GuangZhou, China

C/C++ PROGRAMMING GRADUATE GROUP

2023

- Awarded the Provincial third prize

## Achievements

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2023 **Second Prize for Postgraduate Academic Scholarship,**

Guangzhou, China

2020 **Three Good Students of the College Scholarship,**

Mianyang, China

2019 **Faculty Science and Technology Innovation Scholarship,**

Mianyang, China

## Skills, Certificatisons & Others

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**Languages:** Chinese (Native) & English (IELTS: 6.5)

**Skills:** Python | C/C++ | C# | Matlab | Linux | LaTeX

**Activities:** working out, swimming, rock climbing and hiking

## Summary

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I am a self-motivated and hard-working student. The B.S. in Geographic Information System offers me a good command of basic computer knowledge and relevant skills, such as Python, C#, Git, etc. Thus, I believe that I can integrate my theoretical knowledge into actual projects well. In my free time, I have studied various courses online, such as Functional Analysis, Machine Learning, Statistical Reinforcement Learning, etc. I like challenges and enjoy exploring interesting problems; while facing a hardship, I tend to discuss with my schoolmates after thinking independently.