Xing Xie

Contact Information

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Research Interests

I am generally interested in computer vision and machine learning. My recent focus is on **Multimodal Large Language Model** and **Generative AI**.

I enjoy exploring the unknown and excel in the practical application of technical skills. Beyond academia, I have a deep appreciation for open-source software and the collaborative spirit it fosters.

Education

Southeast University, School of Artificial Intelligence, Nanjing, China
Bachelor of Artificial Intelligence, June, 2026(expected)

- Advisor : Prof. Guilin Qi and Prof. Hui Xue
- CCF Student Member

Publications

Rihui Jin, Zheyu Xin, **Xing Xie**, Zuoyi Li, Guilin Qi, Yongrui Chen, Xinbang Dai, Tongtong Wu, Gholamreza Haffari. *Table-r1* : Self-supervised and Reinforcement Learning for Program-based Table Reasoning in Small Language Models. *arXiv*, 2025.

Xing Xie, Yu Wang, Hao Liang, Chenyang Lou, Bingtuan Gao. An Efficient Bird Detection Method for Substation Inspection via Improved YOLOv5. In *Proceedings of IEEE International Conference on Cyber Technology in Automation, Control, and Intelligent Systems* (CYBER), 2024. (**Finalist of Best Poster Award**)

Research experience

***Table-r1* : Self-supervised and Reinforcement Learning for Program-based Table Reasoning in Small Language Models** **February, 2025 — May, 2025**

- Pioneered GRPO adaptation for Table Reasoning, designing mix-paradigm rewards and achieving SOTA on four benchmarks (surpassing SLMs, competitive with LLMs).
- Developed self-supervised layout understanding method eliminating manual annotation needs through innovative pretraining tasks.
- Proposed two-stage training unifying table transformation and semantic comprehension, handling diverse structures robustly.

Leveraging Graph Neural Retrieval-Augmented Generationfor OpenTable-Text Hybrid QA **October, 2024 - Present**

- This project is advised by Prof. Dr. Guilin Qi.
- The project aims to enhance the performance of open table-text hybrid QA by utilizing graph neural networks ;
- Expected outcomes include the publication of one research paper, the acceptance of one patent, and the development of a TableRAG system.

Intelligent Bird Detection Technology for Substations Based on Enhanced YOLOv5 April 2024–April 2025

- Developed an innovative deep learning solution for avian detection in electrical substations using enhanced YOLOv5 architecture
- Published research findings in *IEEE-CYBER 2024* (Finalist for Best Poster Award)
- Integrated audio-visual deterrent system demonstrating substantial reduction in bird intrusions during field deployment
- Recognized with **Excellent** rating in final project evaluation by industry review panel

Selected Open-Source Projects

- **GitHub :** kaicheng001 (24 followers)
- **nanoMoE** (A minimal, educational implementation of a Mixture-of-Experts (MoE) Transformer language model in pure PyTorch) GitHub

Honors and Awards

- *First Prize* in The 27th China Robotics and Artificial Intelligence Competition in Jiangsu 2025
- *Outstanding Paper Award*, Southeast University 2025
- *Meritorious Winner Award*, International Mathematical Contest in Modeling 2025
- Provincial Third Prize in 6th Global Campus Intelligent Algorithm Elite Competition 2024
- *Merit Student*, Southeast University 2024
- *Finalist of Best Poster Award IEEE-CYBER 2024* in Copenhagen, Danmark 2024
- First Prize (Top 1%) in 15th National College Students Mathematics Competition 2024
- Outstanding Communist Youth League Member of Southeast University 2023
- First Prize (Top 1%) in 20th Jiangsu Provincial College Student Mathematics Competition 2023

Scholarships And Grants

- Jiangsu Provincial University Student Innovation Training Program (project leader), ¥8,000; 2024-2025
- Southeast University Competition Scholarship for Two Consecutive Years, ¥800; 2023-2024

Services

- Participated in three social practice projects, rated as **excellent** 2022 - 2024
- Member of Southeast University Student Science and Technology Association 2022 - 2023

Skills

Programming : Python, C/C++, Matlab, JavaScript
Misc : PyTorch, Tensorflow, LaTeX, Typst, Markdown
OS : Linux, macOS, Windows