Xie Guohuan

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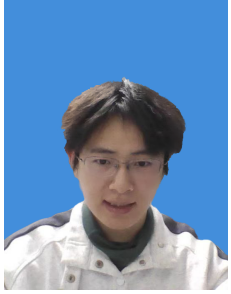
Gender: Male · Age: 19 · Hometown: Anhui



Education Background

Nankai University, School of Software, Software Engineering

Sep. 2022 –Jun. 2026

- **GPA**: 93.46 **Rank**: 1/127
- **Core Courses**: Advanced Mathematics (Type A) I (97), Advanced Mathematics (Type A) II (97), Probability Theory and Mathematical Statistics (97), Data Structures (97), Principles of Database Systems (97), Operating Systems (98), Computer Organization (98), Compiler Principles (99)

Research Interests

Multimodal Understanding: I am particularly interested in how to integrate multimodal information such as vision and language to build a perceptual feedback loop, enabling deeper understanding and reasoning about the real world to support perception and decision-making in complex tasks.

Generation Model-driven Visual Understanding and Content Creation: I focus on the applications of generative models (e.g., diffusion models, VAEs) in visual understanding and content generation, exploring their modeling capabilities in tasks such as semantic segmentation and image editing, with an emphasis on fine-detail reconstruction, cross-modal generalization, and efficient training mechanisms, aiming to enhance their practicality and generalizability in visual perception tasks.

Academic Experience

Project Research, Generative Approaches for Generalized Few-Shot Semantic Segmentation

Apr. 2025 – Present

- Explored the introduction of generation models into general few-shot semantic segmentation tasks, aiming to mitigate generalization challenges caused by inter-class distributional differences and improve adaptability to novel classes.

Project Research, A Survey on Video Semantic Segmentation (Under Review)

Sep. 2024 –Apr. 2025

- Under the guidance of Prof. Liu Yun, conducted in-depth research in the field of video scene understanding, systematically collected and organized high-quality literature, categorized and comparatively analyzed existing works, and authored a comprehensive survey paper.

National Mathematical Modeling Contest, Dynamic Study of the “Bench Dragon” Movement Model Based on Simulation and Optimization Algorithms

Sep. 2024

- Applied numerical simulation, velocity decomposition, particle swarm optimization, and differential equations to solve problems such as trajectory prediction, collision detection, and path optimization for the “Bench Dragon” movement model.

Course Project, Nankai University Intelligent Assistant

Jul. 2024 –Aug. 2024

- Collected over 10,000 pieces of information from various campus WeChat public accounts; performed data cleaning and processing; constructed an information retrieval and generation system based on RAG and knowledge graphs, successfully deployed for efficient information querying and intelligent generation.

Innovation Practice

National Innovation and Entrepreneurship Project, Vibration Measurement and Analysis Device for Rail Inspection Car

Mar. 2024 –Present

- Proposed a fault detection scheme based on tri-axial acceleration data from a rail inspection car to address the challenge of rapid railway fault detection in China, enabling accurate identification of fault locations and types through in-depth data analysis.

Awards Honors

- **National Level:** National Scholarship (Oct. 2024), Second Prize in the Higher Education Press Cup National Undergraduate Mathematical Modeling Contest (Nov. 2024), Meritorious Winner in MCM/ICM (May 2025)
- **Provincial Level:** Second Prize in Tianjin Mathematics Competition (Jul. 2023)
- **University Level:** Gongneng Scholarship, Nankai University (Oct. 2023); Nankai University "Three-Good" Student ×2 (Oct. 2023 Oct. 2024)

English Additional Information

- **English Proficiency:** CET-6: 548; CET-4: 603; strong literature reading and comprehension skills.
- **Other:** Solid programming skills; familiar with CUDA architecture and parallel computing; proficient in PyTorch; experienced with Linux kernel; skilled in LaTeX writing; excellent at literature collection, organization, and synthesis.