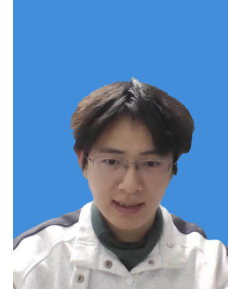# Guohuan Xie

15556086882 · 2212906@mail.nankai.edu.cn

Gender: Male · Age: 20 · Hometown: Anhui

Education Background

Nankai University, School of Software, Software Engineering

Sept. 2022 – Jun. 2026

- **GPA:** 93.46   **Rank:** 1/127
- **Major 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); Principles of Computer Organization (98); Principles of Compilers (99)

Research Experience

Media Computing Lab

Nankai University   Aug. 2024 – Present

Supervisors: Prof. Ming-Ming Cheng, Prof. Yun Liu

Engaged in computer vision research, focusing on video scene understanding and generalized few-shot semantic segmentation.

Academic Projects

Project: Generalized Few-Shot Semantic Segmentation Based on Generative Models

Apr. 2025 – Present

- Synthesized novel-class images using generative models, generated initial semantic masks via the GFSS model, and optimized mask quality to construct high-quality pseudo-samples for improving generalization in GFSS tasks.

Project: A Comprehensive Survey on Video Scene Parsing

Sept. 2024 – Apr. 2025

Submitted to TPAMI 2025

- Under the guidance of Prof. Yun Liu, systematically reviewed research progress in Video Scene Parsing (VSP), covering tasks such as VSS, VIS, VPS, VTS, and OVVS. Provided comparative analysis on methods, architectures, evaluation metrics, and datasets, and proposed a unified technical roadmap and future directions.

Mathematical Modeling Contest: Dynamic Study of "Bench Dragon" Motion Model Based on Simulation and Optimization

Sept. 2024

- Solved trajectory prediction, collision detection, and turnaround path optimization using numerical simulation, velocity decomposition, particle swarm optimization, and differential equations.

Course Project: Nankai University Smart Assistant

Jul. 2024 – Aug. 2024

- Collected and cleaned over ten thousand news items from university public accounts; built a RAG-based information retrieval and generation model using knowledge graph techniques, and successfully deployed it online for efficient intelligent services.

Innovation and Practice

National Innovation and Entrepreneurship Program: Vibration Analysis Device for Rail Inspection Vehicle

Mar. 2024 – Present

- Proposed a fault detection solution for rapid railway inspection in China, based on triaxial acceleration analysis from the rail inspection vehicle, enabling accurate fault localization and classification.

Awards and Honors

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

English and Other Skills

- **English Proficiency:** CET-6: 548, CET-4: 603; proficient in reading and understanding academic literature.