

Siyuan Liu

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Current Research Interests: MLLMs and Computer Vision

Education

Nanjing University , <i>Bachelor of Science in Computer Science and Technology</i>	Sept. 2022 – Present
• GPA: 4.58/5 (91.6/100) • Ranking: 6/191 (Top 3.2%) • Main Courses: Probability Theory and Mathematical Statistics (100), Advanced Programming (98), Numerical Method (98), Introduction to Computer Systems (96), Elements of Cryptography (95), Calculus (92), Principles and Techniques of Compilers (92), Introduction to Databases (92), Foundations of Computer Networks (91)	

Research Experiences

Reconciling Generalization with Specialization via Orthogonal Low-Rank Adaptation and Cross-Modal Attention	Jan. 2025 - Present
<i>Supervisor: Prof. Yinghuan Shi</i>	<i>Nanjing University</i>
• Designed and implemented a novel framework leveraging LoRA, orthogonal loss, and cross-modal attention to enhance generalization and specialization in video classification tasks. • Improved parameter efficiency and feature diversity, achieving state-of-the-art performance on benchmark datasets.	
Task Vector based Domain Generalization Research	Feb. 2024 - May 2024
<i>Supervisor: Prof. Yinghuan Shi</i>	<i>Nanjing University</i>
• Investigated the relationships between task vectors across diverse domains, datasets, and network architectures, focusing on their applications in domain generalization. • Proposed a novel paradigm for domain generalization by leveraging task vectors for direct model editing, reducing the need for traditional fine-tuning.	
Human Behavior Perception and Understanding in Complex Visual Scenes	Nov. 2023 - Nov. 2024
<i>Supervisor: Asst. Researcher Rui Yan</i>	<i>Nanjing University</i>
• Constructed a RAW format human behavior detection dataset using ρ-Vision technology, based on classic and popular video datasets.	

Projects

C-like Language Compiler	Sept. 2024 - Dec. 2024
• Developed a small-scale C-like language compiler that translates C-like source code into MIPS assembly code. • Implemented lexical analysis, syntax analysis, semantic analysis, intermediate code generation, and optimized target code generation using C. • Completed as part of the course <i>Principles and Techniques of Compilers</i>.	
Survivor-like Game	Mar. 2023 - June. 2023
• Designed and developed a survivor-like game from scratch using C++ and Qt. • Implemented game mechanics, user interfaces, and real-time interactions. • Completed as part of the course <i>Advanced Programming</i>.	

Honors and Awards (Selected)

• Guo Xie Birong Scholarship (<i>Top 60 undergraduates in Nanjing University, 10000 ¥</i>)	2024
• Mobile Light Digital Intelligence Innovation Scholarship	2024
• National Scholarship (<i>Top 0.2% national-wide, the highest honor in China, 8,000 ¥</i>)	2023

- **Outstanding Student Role Model of Nanjing University** 2024
- **Outstanding Student Leader of Nanjing University** 2024
- **Second Prize, China Undergraduate Mathematical Contest** 2023

Service

- Executive President of the Student Union, School of Computer Science Sept. 2024 - Present
- Member of Nanjing University Volunteer Teaching Team to Yunnan Province (*Twice*) July - Aug. in 2023&2024

Technical Skills

- Programming Languages: Python, C/C++ , SQL
- AI Frameworks: PyTorch
- Development Tools: Git, Bash, Markdown, LaTeX
- Language: English (CET-6: 608), Mandarin