# Jiayi Zhu

Zhejiang University | Mathematics and Applied Mathematics
Email: zhujiayimath@zju.edu.cn | Phone: 17370567246

## EDUCATION

**Zhejiang University** Sep. 2024 – Jun. 2028 (expected)

B.S. in Mathematics and Applied Mathematics

**GPA:** 4.79/5.00 | **Rank:** 1/60

**Selected Coursework:** Abstract Algebra; Complex Analysis; Elementary Number Theory; University Physics; Numerical Linear Algebra; Artificial Neural Network Models and Algorithms; Python Programming

**Research Interests:** Multi-agent collaboration; model compression and inference efficiency; multimodal learning; world models.

## RESEARCH EXPERIENCE

**Discussion Group on Inference Optimization** Sep. 2026 – Present

Participant | Prof. Zhiyu Zhang

College of Control Science and Engineering, Zhejiang University

- Served as note-taker for one session and shared follow-up notes with personal interpretations, supplementary resources, and explanations of the presentation slides.
- Preparing a presentation for an upcoming discussion group session.

**Multimodal Large Language Model Hallucination Analysis and Mitigation**

Collaborative Research Jul. 2026 – Aug. 2026

- Built a causal analysis pipeline to identify attention heads associated with modality misalignment and hallucination in multimodal large language models (LLMs).
- Implemented gating interventions on candidate attention pathways identified through causal head analysis.
- Found limited effects from simple gating in the tested setup, indicating a gap between causal attribution and effective intervention.

## SELECTED PROJECT

**nanoGPT Reproduction and Dropout Experiment**

Independent Project Summer 2026

- Reproduced a GPT-style Transformer training pipeline in PyTorch.
- Compared dropout rates of 0.2 and 0.3; observed slower early convergence and a later optimum in the tested setup.
- Observed more stable late-stage loss in the tested setup.

## HONORS AND AWARDS

**National Scholarship — Two-time recipient** 2025, 2026

Ministry of Education of China

**Provincial Second Prize** 2025

Chinese Mathematics Competitions for College Students

## TECHNICAL SKILLS

**Programming:** Python; C (currently learning); Shell/Bash (currently learning)

**Frameworks and Tools:** PyTorch, Transformers; Linux (currently learning)

**Languages:** English (academic reading)