Zijian Zhang

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Research Interests

My research interests include the application of optimization methods, including preference optimization and alignment, and relevant preference optimization data.

Education

East China University of Science and Technology, Shanghai, China 2021.09 - present

Computer Science

GPA: 88/100 [transcript]

Main courses: Advanced mathematics (98), Linear algebra (100), Principles of computer composition(99), Object-oriented programming (99), Fundamentals of compiling (90), Operating system (96)

Publications

1. **GRAPE: Generalizing Robot Policy via Preference Alignment**
   Zijian Zhang, Kaiyuan Zheng, Zhaorun Chen, Joel Jang, Yi Li, Chaoqi Wang, Mingyu Ding, Dieter Fox, Huaxiu Yao
   (Under review) ICML, 2025
2. **AnyPrefer: An Automatic Framework for Preference Data Synthesis**
   Yiyang Zhou, ..., Zijian Zhang, ..., Huaxiu Yao
   ICLR, 2025

Research Experience

Research Assistant, Huaxiu Yao's Lab @ University of North Carolina at Chapel Hill 2024.05 - 2024.12

- Introduced Anyprefer, a new method to improve VLA through direct preference optimization and iterative framework, enhanced the VLA's optimization preformance.
- Introduced GRAPE, a trajectory-wise direct preference optimization method, which enhances the efficiency, and success rate of the VLA.
- Authored 1**ICLR'25*, 1**ICML'25*.

Advisor: Prof. Huaxiu Yao

Research Intern, Machine Learning Group @ Microsoft Research Asia 2024.10 - present

- Worked on efficiently optimize LLM from mixing NLP datasets by dynamic sampling.
- Worked on analyzing dynamic parameters (such as loss) during the optimization to better control the optimization process.

Advisor: Prof. Zhong Li

Research Intern, AIR-DREAM Lab @ Tsinghua University 2024.6 - 2024.9

- Worked on leveraging the self-critic ability of LLMs to enhance the mathematical reasoning capabilities of the model.
- Worked on enable the LLMs to have decision-making capabilities by direct preference optimization.

Advisor: Prof. Xianyuan Zhan

Research Intern, InternLM2 Team @ Shanghai AI Lab 2023.11 - 2024.5

- Proposed an efficient selection method to extract high-quality optimization samples from the original SFT dataset of InternLM2. By fine-tuning InternLM2 on the top 10% of the highest-scoring examples, the model achieved superior performance compared to using the entire instruction dataset.

Advisor: Prof. Yining Li

Services

- Reviewer for ICLR 2025 2025
- Reviewer for Neurips 2024 2024

Skills

- Programming Skills: C/C++, Python, PyTorch, LaTeX, Git
- Language Skills: Mandarin (native), English (TOFEL 100: R 27, L 24, S 22, W 27)

Awards

- Scholarship for Outstanding Students, First Prize East China University of Science and Technology
- Outstanding student leaders East China University of Science and Technology
- National Mathematics Competition for college students, First Prize Chinese Mathematical Society