Qixin Xu

Email ◇ Google Scholar ◇ Github

EDUCATION

Tsinghua University 2023 - 2027(expected)

B.S. in Computer Science; GPA: 3.87/4.00 (Top 15 %)

- **Selected A^+/A Courses**: Linear Algebra, Probability and Statistics, Deep Learning, Multi-Modal Machine Learning, Programming and Training, Data Mining, Writing and Communication, English for Academic Purposes: Research Paper Writing etc.
- **Academic Interests**: Multi-modal, Reinforcement Learning

RESEARCH EXPERIENCE

Exploring Trusted Learning Patterns of High Depression Risk College Students with Large Language Models through Reinforcement Learning November 2023 - March 2024

Student Reasearch Program, worked with Zeqing Li(Yao Class, Tsinghua University)

· Develop a structured experimental pipeline, informed by the Trust Game paradigm in economics and the foundational concepts of game theory

· Aim to provide targeted support for college students at high risk of depression, enhancing their mental well-being

Multi-modal Alignment through AI feedback July 2024 - November 2024

Research Intern at Tsinghua NLP Lab, advised by Prof. Zhiyuan Liu.

· Explore the potential of feedback from open-source model in reducing hallucination of vision language model

· Adopt the model trained with DPO Algorithm as reward model to further conduct inference-time scaling

Adopt implicit reward model to enhance the reasoning ability of LLM September 2024 - January 2025

Research Intern at Tsinghua NLP Lab, advised by Prof. Zhiyuan Liu, worked with Dr. Ganqu Cui

· Propose PRIME (**P**rocess **R**einforcement through **IM**plicit r**E**wards), which enables online PRM updates using only policy rollouts and outcome labels through implict process rewards

· Explore the role of dense rewards in Reinforcement Learning process

Enhance the reasoning ability of multi-modal language model January 2025 - Present

Research Intern at Tsinghua NLP Lab, worked with Dr. Tianyu Yu

· Applied preference optimization algorithms on vision language model to enhance multi-modal reasoning abilities such as reading complex table or solving geometrical question

PROJECT EXPERIENCE

Contribute to the development of MiniCPM-V 2.6 and MiniCPM-o 2.6 July 2024 - January 2025

Proudly worked with OpenBMB Team

· Develop a simple yet effective pipeline to reduce MiniCPM-V 2.6 and MiniCPM-o 2.6's hallucination

· Design particular format of pre-training data to enable the training of streaming ability of MiniCPM-o 2.6

RESEARCH PUBLICATION

(1) Tianyu Yu, Haoye Zhang, Qiming Li, **Qixin Xu**, Yuan Yao, Da Chen, Xiaoman Lu, Ganqu Cui, Yunkai Dang, Taiwen He, Xiaocheng Feng, Jun Song, Bo Zheng, Zhiyuan Liu, Tat-Seng Chua, Maosong Sun. **RLAIF-V: Open-Source AI Feedback Leads to Super GPT-4V Trustworthiness**, *CVPR 2025 (Highlight)*

(2) Ganqu Cui*, Lifan Yuan*, Zefan Wang*, Hanbin Wang*, Wendi Li*, Bingxiang He*, Yuchen Fan*, **Qixin Xu***, Tianyu Yu*, Weize Chen, Jiarui Yuan, Huayu Chen, Kaiyan Zhang, Xingtai Lv, Shuo Wang, Yuan Yao, Xu Han, Hao Peng, Yu Cheng, Zhiyuan Liu, Maosong Sun, Bowen Zhou, Ning Ding. **Process reinforcement through implicit**

rewards, *Under peer review*, 2025.

SKILLS

Languages: English(CET-6: 651/710 (Listening: 249/249)), Chinese.
Programming: Python, C/C++, System Verilog, LATEX, etc.
Tools: Pytorch, DeepSpeed, Git, Shell, Vim, Django, ReAct, Flask, ssh, gdb/pdb, etc.

MISC

Hobbies: Basketball, Bridge, Traveling

Groups: Team member of CST basketball team and Tsinghua Bridge team

In high school, I was quite into Mathematics and Physics, and participated in Olympiad in Mathematics and Olympiad in Physics.