

# Xiao Liang

 Email |  Github |  Website |  LinkedIn |

## Education

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University of California, Los Angeles (UCLA) | Incoming Sept. 2025 - June. 2030 (expected)  
Ph.D | Statistics and Data Science California, USA

Tsinghua University (THU) | GPA: 3.98/4.0 Sept. 2022 - June. 2025  
M.Sc. | Data Science and Information Technology Beijing, China

Sun Yat-sen University (SYSU) | GPA: 4.11/5.0 Sept. 2018 - June. 2022  
B.Sc. | Electronic Information Science and Technology Guangzhou, China

## Publications

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### Language Modeling

- [1] **Xiao Liang\***, Zhong-Zhi Li\*, Yeyun Gong, Yelong Shen, Ying Nian Wu, Zhijiang Guo, Weizhu Chen. *Beyond Pass@1: Self-Play With Variational Problem Synthesis Sustains RLVR*. **Preprint 2025**.
- [2] **Xiao Liang\***, Zhong-Zhi Li\*, Yeyun Gong, Yang Wang, Hengyuan Zhang, Yelong Shen, Ying Nian Wu, Weizhu Chen. *SwS: Self-aware Weakness-driven Problem Synthesis in Reinforcement Learning for LLM Reasoning*. **Preprint 2025**. [\[Paper\]](#) [\[Code\]](#)
- [3] Zhong-Zhi Li\*, **Xiao Liang\***, Zihao Tang, Lei Ji, Peijie Wang, Haotian Xu, Xing W, Haizhen Huang, Weiwei Deng, Yeyun Gong, Ying Nian Wu, Zhijiang Guo, Xiao Liu, Fei Yin, Cheng-Lin Liu. *TL; DR: Too Long, Do Re-weighting for Efficient LLM Reasoning Compression*. **Preprint 2025**. [\[Paper\]](#) [\[Code\]](#)
- [4] Hengyuan Zhang, Xinrong Chen, Yingmin Qiu, **Xiao Liang**, Ziyue Li, Guanyu Wang, Weiping Li, Tong Mo, Wenyue Li, Hayden Kwok-Hay So, Ngai Wong. *GuiLoMo: Allocating Expert Number and Rank for LoRA-MoE via Bilevel Optimization with GuidedSelection Vectors*. **Preprint 2025**. [\[Paper\]](#) [\[Code\]](#)
- [5] Xumeng Wen, Zihan Liu, Shun Zheng, Zhijian Xu, Shengyu Ye, Zhirong Wu, **Xiao Liang**, Yang Wang, Junjie Li, Ziming Miao, Jiang Bian, Mao Yang. *Reinforcement Learning with Verifiable Rewards Implicitly Incentivizes Correct Reasoning in Base LLMs*. **Preprint 2025**. [\[Paper\]](#)
- [6] **Xiao Liang**, Xinyu Hu, Simiao Zuo, Jimi He, Yu Wang, Victor Ye Dong, Yeyun Gong, Kushal S. Dave, Yi Liu, Qiang Lou, Shao-Lun Huang, Jian Jiao. *What You See Is What You Get: Entity-Aware Summarization for Reliable Sponsored Search*. In **NeurIPS SafeGenAI 2024**. [\[Paper\]](#)
- [7] Yi Cheng, **Xiao Liang**, Yeyun Gong, Wen Xiao, Song Wang, Yuji Zhang, Wenjun Hou, Kaishuai Xu, Wenge Liu, Wenjie Li, Jian Jiao, Qi Chen, Peng Cheng, Wayne Xiong. *Integrative Decoding: Improve Factuality via Implicit Self-consistency*. in **ICLR 2025**. [\[Paper\]](#) [\[Code\]](#)
- [8] **Xiao Liang\***, Xinyu Hu\*, Simiao Zuo, Yeyun Gong, Qiang Lou, Yi Liu, Shao-Lun Huang, Jian Jiao. *Task Oriented In-Domain Data Augmentation*. In **EMNLP Main 2024**. [\[Paper\]](#)
- [9] Jiawen Xie, Pengyu Cheng, **Xiao Liang**, Yong Dai, Nan Du. *Chunk, Align, Select: A Simple Long-sequence Processing Method for Transformers*. In **ACL 2024**. [\[Paper\]](#) [\[Code\]](#)
- [10] Tao Shi\*, **Xiao Liang\***, Yaoyuan Liang, Xinyi Tong, Shao-Lun Huang. *SSLCL: An Efficient Model-Agnostic Supervised Contrastive Learning Framework for Emotion Recognition in Conversations*. Preprint 2023. [\[Paper\]](#) [\[Code\]](#)

- [11] Yiyao Yu, Yuxiang Zhang, Dongdong Zhang, **Xiao Liang**, Hengyuan Zhang, Xingxing Zhang, Ziyi Yang, Mahmoud Khademi, Hany Awadalla, Junjie Wang, Yujiu Yang, Furu Wei *Chain-of-Reasoning: Towards Unified Mathematical Reasoning in Large Language Models via a Multi-Paradigm Perspective*. **ACL 2025**. [\[Paper\]](#)
- [12] Microsoft Sigma Team. *SIGMA: Differential Rescaling Of Query, Key And Value For Efficient Language Models* Microsoft Research Asia Artificial Intelligence Reasoning Group. Preprint 2025. [\[Paper\]](#)
- [13] Zhong-Zhi Li, Duzhen Zhang, Ming-Liang Zhang, Jiabin Zhang, Zengyan Liu, Yuxuan Yao, Haotian Xu, Junhao Zheng, Pei-Jie Wang, Xiuyi Chen, Yingying Zhang, Fei Yin, Jiahua Dong, Zhiwei Li, Bao-Long Bi, Ling-Rui Mei, Junfeng Fang, **Xiao Liang**, Zhijiang Guo, Le Song, Cheng-Lin Liu. *From System 1 to System 2: A Survey of Reasoning Large Language Models*. **Preprint 2025**. [\[Paper\]](#) [\[Code\]](#)

Multimodal Learning

- [14] **Xiao Liang\***, Tao Shi\*, Yaoyuan Liang, Te Tao, Shao-Lun Huang. *Exploring Iterative Refinement with Diffusion Models for Video Grounding*. In **ICME 2024**. [\[Paper\]](#) [\[Code\]](#)
- [15] Yaoyuan Liang\*, **Xiao Liang\***, Yansong Tang, Zhao Yang, Ziran Li, Jingang Wang, Wenbo Ding, Shao-Lun Huang. *CoSTA: End-to-End Comprehensive Space-Time Entanglement for Spatio-Temporal Video Grounding*. In **AAAI 2024**. [\[Paper\]](#)
- [16] Yaoyuan Liang, Zhuojun Cai, Jian Xu, Guanbo Huang, Yiran Wang, **Xiao Liang**, Jiahao Liu, Ziran Li, Jingang Wang, Shao-Lun Huang. *Unleash Region Understanding in Intermediate Layers for MLLM-based Referring Expression Generation*. In **NeurIPS 2024**. [\[Paper\]](#) [\[Code\]](#)

(\* indicates equal contribution)

Professional Experience

Microsoft Research Asia (MSR Asia)	Nov. 2023 - Present
Mentor: <a href="#">Dr.Yeyun Gong</a> , <a href="#">Dr.Weizhu Chen</a> ,	Beijing, China
<ul style="list-style-type: none"><li>• Pre-training and continual learning for large language models (LLMs).</li><li>• Reinforcement learning to enhance reasoning in LLMs.</li></ul>	
Tencent Artificial Intelligence Lab (AI Lab, NLP)	Mar. 2023 - Sep. 2023
Mentor: <a href="#">Dr.Pengyu Cheng</a> , <a href="#">Dr.Nan Du</a>	Shenzhen, China
<ul style="list-style-type: none"><li>• Utilizing reinforcement learning for long sequence modeling in Transformers.</li><li>• Dialog generation and task-specific instruction data generation.</li></ul>	

Awards and Honors

- Outstanding Master Graduate Thesis of Tsinghua University. 2022 - 2025
- Second Prize Scholarship of Tsinghua University (top 10%). 2023 - 2024
- Outstanding Graduate Thesis of Sun Yat-sen University (top 5%). Jun. 2022
- Outstanding Graduate Student of Sun Yat-sen University (top 10%). Jun. 2022
- Second Prize Scholarship of Sun Yat-sen University (top 15%) for 3 times. 2019 - 2022

Skills

Programming Languages: Python | MATLAB | Shell | LATEX | C++/C | HTML

Programming Tools: Git | PyTorch | Docker | Linux Ops | Vim

## Academic Services

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### Reviewer of :

- The Forty-Second International Conference on Machine Learning (ICML) {25}
- The Thirty-Ninth Annual Conference on Neural Information Processing Systems (NIPS) {25}
- The Conference on Empirical Methods in Natural Language Processing (EMNLP) {24}
- The IEEE International Conference on Multimedia and Expo (ICME) {24}
- The IEEE International Conference on Automatic Face and Gesture Recognition (FG) {23, 24}