Xiao Liang

Email | Github | Website | Linkedin |

Education

University of California, Los Angeles (UCLA) | *Incoming* — *Sept. 2025 - June. 2030 (expected)*
Ph.D | *Statistics and Data Science.* Advisor: **Ying Nian Wu** — *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

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. [Paper] [Code]
- [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 Effcient 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, Jiaxin 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 - Aug. 2025*

Mentor:Dr. Yeyun Gong, Dr. Weizhu Chen, *Beijing, China*

- Pre-training and continual learning for large language models (LLMs).
- Reinforcement learning to enhance reasoning in LLMs.

Tencent Artificial Intelligence Lab (AI Lab, NLP) *Mar. 2023 - Sep. 2023*

Mentor: Dr.Pengyu Cheng, Dr.Nan Du *Shenzhen, China*

- Utilizing reinforcement learning for long sequence modeling in Transformers.
- Dialog generation and task-specific instruction data generation.

Awards and Honors

- Graduate Dean's Scholar Award (GDSA) of UCLA, Amount: $14,500 *Sep. 2025*
- Outstanding Master Graduate Thesis of Tsinghua University. *May. 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

English Skills: Toefl 102

Academic Services

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}