ANDREW ZHAO | Curriculum Vitae

Department of Automation, Tsinghua University – Citizenship: **Canada**
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Seeking Research Scientist positions in AI/ML with targeted start date: 2026

Research Statement

My research focuses on **reinforcement learning for LLMs**, **reasoning**, **LLM-based agents**, and the **safety** challenges associated with generative AI, with an emphasis on diversity, robustness, generalization, and self-evolving systems requiring minimal human intervention. Recently, I have become interested in the reasoning capabilities of large language models. I aim to advance the development of innovative, reliable, and autonomous AI systems capable of adapting to diverse and dynamic environments.

Education

Tsinghua University — **Beijing**
PhD, Pattern Recognition and Machine Learning, *China* — *2021–present*
Reinforcement Learning, Agents, Natural Language Processing, Deep Learning
Advisor :: Professor Gao Huang, Department of Automation

University of Southern California — **Los Angeles**
Master of Science, *USA* — *2019–2020*

University of British Columbia — **Vancouver**
Bachelor of Applied Science, *Canada* — *2012–2017*

Selected Publications

2025

Andrew Zhao, Erle Zhu, Rui Lu, Matthieu Lin, Yong-Jin Liu, and Gao Huang. Self-Referencing Agents for Unsupervised Reinforcement Learning. *Neural Networks*, page 107448, 2025.

Andrew Zhao, Quentin Xu, Matthieu Lin, Shenzhi Wang, Yong jin Liu, Zilong Zheng, and Gao Huang. DiveR-CT: Diversity-enhanced Red Teaming Large Language Model Assistants with Relaxing Constraints. In *Proceedings of the AAAI Conference on Artificial Intelligence (**ORAL**)*, 2025.

Andrew Zhao, Yiran Wu, Yang Yue, Tong Wu, Quentin Xu, Yang Yue, Matthieu Lin, Shenzhi Wang, Qingyun Wu, Zilong Zheng, and Gao Huang. Absolute Zero: Reinforced Self-play Reasoning with Zero Data ⋆ **1.7k**. *Advances in Neural Information Processing Systems (**SPOTLIGHT**)*, 2025.

Andrew Zhao, Reshmi Ghosh, Vitor Carvalho, Emily Lawton, Keegan Hines, Gao Huang, and Jack W. Stokes. Are My Optimized Prompts Compromised? Exploring Vulnerabilities of LLM-based Optimizers. *arXiv preprint arXiv:2510.14381*, 2025.

Haojun Jiang, **Andrew Zhao***, Qian Yang*, Xiangjie Yan, Teng Wang, Yulin Wang, Ning Jia, Jiangshan Wang, Guokun Wu, Yang Yue, Shaqi Luo, Huanqian Wang, Ling Ren, Siming Chen, Pan Liu, Guocai Yao, Wenming Yang, Shiji Song, Xiang Li, Kunlun He, and Gao Huang. Towards Expert-level Autonomous Carotid Ultrasonography with Large-scale Learning-based Robotic System. *Nature Communications*. Nature Publishing Group UK London, 2025.

2024

Andrew Zhao, Daniel Huang, Quentin Xu, Matthieu Lin, Y. Liu, and Gao Huang. ExpeL: LLM Agents Are Experiential Learners ⋆ 170. In *Proceedings of the AAAI Conference on Artificial Intelligence (**ORAL**)*, 2024.

2022

Andrew Zhao*, Matthieu Lin*, Yangguang Li, Yong-Jin Liu, and Gao Huang. A Mixture of Surprises for Unsupervised Reinforcement Learning. *Advances in Neural Information Processing Systems*, 2022.

Research Experience

Microsoft Research, Redmond

Research Intern @ AI Interaction and Learning Group *June,2025 – August,2025*
Worked on AI Safety of Self-improving LLM Systems.
Advisor :: **Dr. Jack Stokes**, *Principal RSDE @ MSR Redmond*

Microsoft Research, Redmond

Research Intern @ Augmented Learning and Reasoning Group *June,2024 – August,2024*
Worked on LLM-based agent applications for cybersecurity investigations.
Advisor :: **Dr. Jack Stokes**, *Principal RSDE @ MSR Redmond*

Beijing Institute for General Artificial Intelligence (BIGAI)

Research Intern @ Natural Language and Conversational AI Lab *Jan,2024 – May,2024*
Worked on red teaming LLMs to increase sample diversity using constrained on-policy reinforcement learning and reward shaping.
Advisor :: **Dr. Zilong Zheng**, *Research Scientist @ BIGAI*

Academic Talks

May-August, 2025: **10 Invited Talks** at *Nvidia/Hugging Face/Amazon/Microsoft/ByteDance/BAAI/Gaoling School/ERIC Lab/The Network School/Ploutos* for **Absolute Zero Reasoner**
February, 2025: **AAAI 2025 Oral Presentation** DiveR-CT
January, 2025: **AI TIME Youth PhD Talk** - DiveR-CT
August, 2024: **IJCAI 2024** *AI4Research Workshop* Invited Paper Talk for ExpeL
February, 2024: **AAAI 2024 Oral Presentation** of ExpeL: LLM Agents are Experiential Learners
January, 2024: **AI TIME Youth PhD Talk** - ExpeL: LLM Agents are Experiential Learners
February, 2023: **AI TIME Youth PhD Talk** - A Mixture of Surprises for Unsupervised Reinforcement Learning

Academic Services/Awards

2025 Oct.: **Top Reviewer** in NeurIPS 2025
2023–present: **Academic Reviewer** in NeurIPS 2023/2024/2025, ICLR 2024/2025, AAAI 2025/2026, ICML 2024/2025, AISTATS 2025

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Complete publication list and project pages available at
andrewzh112.github.io