Haoyuan Jiang

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RESEARCH INTERESTS

My research interests lie in **Reinforcement Learning (RL), LLM Reasoning, and Agentic AI**, with a strong motivation to contribute to the development of Artificial General Intelligence (AGI). I have extensive experience in both academic research and industrial applications, particularly in combining reinforcement learning with foundation models to build intelligent decision-making agents.

EDUCATION

Zhejiang University, Hangzhou, China — Sep.2017 — Jun.2019
Master of Software Engineering — Cumulative GPA: 3.61/4.00

Jiangsu University of Science and Technology, Zhenjiang, China — Sep.2013 — Jun.2017
Bachelor of Naval Architecture and Ocean Engineering
Postgraduate entrance examination: Computer Science 127/150; Mathematics 129/150.

SELECTED RESEARCH & WORK EXPERIENCE

Baidu — Shenzhen, China
Senior Algorithm Engineer — Sep.2023 — Present
Foundation model part

- Advanced the capabilities of ERNIE Bot (Baidu's Foundation model) in *LLM reasoning and audio comprehension.*
- Carried out extensive work in *data collection, model training(SFT and Post-training) and analysis.*
- Achieved state-of-the-art (SOTA) results on benchmarks such as GSM8K, MATH, MMAU, MMSU, etc.

Autonomous driving part

- Focus on designing and improving a data-driven end-to-end autonomous driving algorithm.
- The innovative techniques used include *imitation learning, reinforcement learning, multi-agent self-play, dataset aggregation(DAgger) and reward model* to improve the algorithm performance.
- We are the first to use reinforcement learning models to conduct road tests in the real world and the first end-to-end model to be successfully put on the road in China.
- Explored *Vision-Language Models (VLMs)* to describe driving environments and make high-level decisions.

Sensetime — Shenzhen, China
Researcher — Jul.2019 — Sep.2023

- Led the team(5 members) in using RL to enhance traffic signal control methods from three perspectives: the algorithm's generalization, collaboration among multiple agents, and industry meetings. *4 top-tier papers* are published.
- Led the team using RL and MARL to participate in competitions: video games and power scheduling. Bronze tier in IJCAI competition and Top 10 in China Southern Power Grid dispatching competition.
- LLM Agent: Use LLM to automatically generate SQL(Text-to-SQL).
- Design and develop a machine learning platform.

PUBLICATIONS

Accepted papers

1. **Haoyuan Jiang**, Ziyue Li, Zhishuai Li, Lei Bai, Hangyu Mao, Wolfgang Ketter, Rui Zhao. A General Scenario-Agnostic Reinforcement Learning for Traffic Signal Control, in IEEE Transactions on Intelligent Transportation Systems (**IEEE TITS, 2024, CCF B**).
2. **Haoyuan Jiang**, Ziyue Li, Hua Wei, Xuantang Xiong, Jingqing Ruan, Jiaming Lu, Hangyu Mao, Rui Zhao. X-Light: Cross-City Traffic Signal Control Using Transformer on Transformer as Meta Multi-Agent Reinforcement Learner, in 33rd International Joint Conference on Artificial Intelligence (**IJCAI 2024, CCF A**).
3. Jiaming Lu, Jingqing Ruan, **Haoyuan Jiang**, Ziyue Li, Hangyu Mao, Rui Zhao. DuaLight: Enhancing Traffic Signal Control by Leveraging Scenario-Specific and Scenario-Shared Knowledge, in 23rd of International Conference on Autonomous Agents and Multiagent Systems (**AAMAS 2024, Oral, CCF B**).
4. Jingqing Ruan, Ziyue Li, Hua Wei, **Haoyuan Jiang**, Jiaming Lu, Xuantang Xiong, Hangyu Mao, Rui Zhao. CoSLight: Co-optimizing Collaborator Selection and Decision-making to Enhance Traffic Signal Control, in ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD 2024, CCF A**).

Preprint paper

1. **Haoyuan Jiang**, Xuantang Xiong, Ziyue Li, Hangyu Mao, Guanghu Sui, Jingqing Ruan, Yuheng Cheng, Hua Wei, Wolfgang Ketter, Rui Zhao. GuideLight: "Industrial Solutions" Guidance for More Practical Traffic Signal Control Agents.

ACADEMIC SERVICES

Program Committee Member/ Reviewer:

- Conference on Neural Information Processing Systems (**NeurIPS 2025**)
- International Joint Conference on Artificial Intelligence (**IJCAI 2025**)
- International Conference on Autonomous Agents and Multiagent Systems (**AAMAS 2025, 2026**)
- ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (**KDD 2023**)

SELECTED HONORS & AWARDS

- **14th National Graduate Mathematical Modeling Competition, Second Prize.** 2017
- **11th China College Students' Entrepreneurship Competition, Bronze Award in Zhejiang Province.** 2018
- **IJCAI 2022 - NEURAL MMO CHALLENGE, Bronze Tier Award.** 2022
- **Outstanding Employee** in Sensetime SCG Group 2022
- **Outstanding AIT Project** in Baidu Inc. 2024
- **Baidu Q3 Xiaozan**. 2024