Chengao Li

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Education

University of Chinese Academy of Sciences Beijing, CN

Ph.D. Candidate of Computer Software and Theory | *GPA: 3.71 / 4.0* 09/2022 - Present

Courses: Algorithms, Pattern Recognition, Advanced Artificial Intelligence, Natural Language Processing

University of Science and Technology of China Hefei, CN

Bachelor of Data Science and Big Data Technology | *GPA: 3.63 / 4.3* 09/2018 - 07/2022

Courses: Data Structures (Course Assistant), Algorithms, Machine Learning, Probability, Stochastic Processes

Publications

Gradient-Adaptive Policy Optimization: Towards Multi-Objective Alignment of Large Language Models. ACL 2025

Chengao Li, Hanyu Zhang, Yunkun Xu, Hongyan Xue, Xiang Ao, Qing He

- Proposed a novel framework for safe and robust alignment of large language models, integrating multi-objective reinforcement learning with human feedback to balance helpfulness and harmlessness.
- Experimental results demonstrate that the method integrates different user-specific preferences across multiple objectives, significantly improves alignment stability and performance across diverse tasks.

Controlling Large Language Models Through Concept Activation Vectors. AAAI 2025

Hanyu Zhang, Xiting Wang, Chengao Li, Xiang Ao, Qing He

- Introduced a lightweight framework for controllable text generation for large language models, which enables fine-grained customization of concepts such as sentiment, style, and topic without resource-intensive fine-tuning.
- The framework achieves flexible and efficient controllable text generation for large language models with adjustments tailored to individual samples, by leveraging concept activation vectors to steer LLM outputs during inference.

Professional Experience

Huawei Cloud Beijing, CN

Research Intern, Pangu Reinforcement Learning Group 07/2024 - Present

- **Safety Alignment:** Conducted multi-objective RLHF on the financial capabilities and security of the Pangu 7B large language model based on the OpenRLHF framework. Maintained the model's general financial capabilities while enhancing its security, achieving improvements in financial compliance abilities.
- **Latent Reasoning:** Developed a token-level routing strategy for large and small language models under latent reasoning mode based on the SGLang framework, which reduces the generation length and improves the generation speed.
- **Reasoning RL:** Developing a novel RL method for large language models based on model fusion decoding and self-sampling, in order to alleviate the entropy collapse phenomenon of large language models in math and coding reasoning tasks, enhance model exploration, and improve model reasoning ability.

Zhejiang Yingyang Asset Management Co., Ltd. Hefei, CN

Research Intern 10/2021 - 03/2022

- **Stock Factors Mining:** Developed a deep learning-based low-frequency stock selection model using Pytorch for data processing and factors mining. Tests on historical market transaction data show a compound return of 1.7%.

University of Chinese Academy of Sciences Beijing, CN

Teaching Assistant, Cognitive Computing Course 02/2025 - 06/2025

University of Science and Technology of China Hefei, CN

Teaching Assistant, Data Structures, Data Structures and Database 09/2020 - 01/2022

Skills

- **Technical:** C/C++, SQL, Python, Distributed training & inference for LLM, Pytorch, OpenRLHF, SGLang, Deepspeed
- **Awards:** USTC Top Talent Program Scholarship, USTC Outstanding Student Scholarship, Di Ao Scholarship, Zeng Xianzi Scholarship, 2nd Prize of Hefei Province in Chinese Mathematics Competition, UCAS Merit Student
- **Patents:** Granted Patent. "A Data Flywheel Fine-Tuning Method and Device" (Patent No. CN120234408A, 2025). Lead Inventor.
- **Interests:** Swimming, Football, Tennis