

Yiding Wang

Beijing, China | Blancokdb@gmail | 136 8316 9535 | yiding-w.github.io

Education

Peking University, Tong Class, Yuanpei College Sept 2022 – Present

- **Major:** Artificial Intelligence (AI)
- **GPA:** 3.795/4.0 | 89.2/100
- **Core Courses:** *Machine Learning (93.5), Mathematical Foundation for AI (93), Multi-agent System (91), Data Structure and Algorithm (91), Probability Theory and Statistics (91)*

Research Experience

LLM-based Agents: Desire-driven Autonomy, Peking University, Beijing Institute for General Artificial Intelligence (BIGAI) Mar 2024 – Sept 2024

- Designed and developed Desire-driven Autonomy (D2A) to simulate human-like daily activities
- Demonstrated that the Desire-driven autonomous agent significantly outperforms baseline agents in generating realistic activity sequences, as evaluated by GPT-4o and human annotators
- Authored a paper based on this work, which is currently under submission with strong acceptance prospects

Parameter-Efficient Fine-Tuning(PEFT), Peking University Oct 2024 – Present

- Designed a distributed LLMs fine-tuning framework, where model parameters along different directions are fine-tuned across multiple GPUs
- Developed a synchronization mechanism to ensure consistency of aggregated model parameters across GPUs

Large Language Models Reasoning, Peking University Apr 2024 – Sept 2024

- Explored using LLMs to automatically label known information and prior reasoning steps, dynamically selecting useful information for the next inference step by modifying the attention mask
- Achieved acceleration in inference stage but observed no significant improvement in reasoning accuracy

Large Language Models Reasoning, Peking University Sept 2023 – Feb 2024

- Contributed to the Chain of Images (CoI) approach, leveraging generated images to assist models in reasoning through complex textual problems
- Constructed datasets across multiple domains, generated reasoning-supportive images, and fine-tuned models to improve performance on CoI evaluation tasks

Research Outputs

Simulating Human-like Daily Activities with Desire-driven Autonomy Sept 2024
(In Submission)

Yiding Wang*, Yuxuan Chen*, Fangwei Zhong, Long Ma, Yizhou Wang
arxiv.org/abs/2412.06435

Enhancing Efficiency in LLM Fine-Tuning via Distributed Parameter Directions In Preparation
(In Preparation)

Chain of Images for Intuitively Reasoning Nov 2023

Fanxu Meng, Haotong Yang, Yiding Wang, Muhan Zhang
arxiv.org/abs/2311.09241

Contest

Neurips 2024 Concordia Contest, Team Member of BIGAINLCo (Rank #9/25) Oct 2024 – Nov 2024

- Proposed the high-level design of the cooperative agent, organizing its functionality into three core modules: perception, thinking, and acting/persuasion
- Implemented and tested specific modules and scenarios to ensure the agent's effective performance in cooperative environments

Teaching

Machine Learning (Prof. Muhan Zhang), Teaching Assistant 2024 Fall

Projects

Desire-driven Autonomous Agent & Simulation Environment D2A/repo

- Codes corresponding to our paper: *Simulating Human-like Daily Activities with Desire-driven Autonomy*.
- Supports dynamic design of agents by customizing desire dimensions. Compatible with diverse textual environments and provides robust evaluation methods for human-like activity simulation.

The Beer Game with Deep Reinforcement Learning Beer-Game-DQN/repo

- Designed and implemented a Deep Q-Learning (DQN) algorithm to optimize decision-making in a simulated supply chain environment.
- Developed single-agent learning with predefined strategies for other agents and extended to multi-agent training with parallel, asymptotic, and hybrid frameworks.

Selected Awards

Peking University Scholarship (¥4000 RMB)	2024
Peking University Practice and Public Welfare Award	2024
Yanchuang Capital Scholarship (¥8000 RMB)	2023
Peking University Excellent Student Award	2023

Languages

Programming Languages: C++, C, CUDA, Python

Natural Languages: Chinese (Native), English (Proficient)