Zhaoyang Yu

[Email] · [Github] · [Google Scholar] · [X] · [Homepage]

I am a Research Intern at DeepWisdom, where I work with Chenglin Wu, Jiayi Zhang and Yifan Wu. I am also fortunate to collaborate with Bang Liu and Yuyu Luo. I received my B.E. from Renmin University of China. As a Co-Founder of OpenManus and a member of Foundation Agents, I am committed to advancing open-source agent infrastructure and research. Currently, my research interest focuses on developing LLM-based agents that can operate effectively across diverse environments and tasks. Towards building Foundation Agents that generalize across environments, my recent work explores:

- **Agent learning**. Learning is key to cross-environment capabilities. Learning environment dynamics requires complex optimization approaches, signals, and targets beyond model parameters, like AFlow[3] optimizing decision workflows and SPO[4] exploring new reward signals for prompt optimization.
- **Decision-making**. Human decision-making naturally enables cross-environment learning and generalization. We explore agent decision structures that mirror human reasoning, potentially unlocking similar learning advantages. AoT[5] atomizes reasoning to address context limitations, while ReCode[1] unifies planning and action for more natural decision-making.
- **Environment scaling**. Agent environments are inevitably simplified versions of human environments, lacking complexity, dynamics, and rich reward signals that make agent learning inherently challenging. We aim to scale environments to provide richer dynamics, diverse distributions, and more abundant rewards for effective learning.

Education

B.E. in Artificial Intelligence *2020 – 2024*
Renmin University of China
Thesis "Multi-head Reflexion: A Memory Mechanism of Autonomous Agent"

Publications

[1] **"ReCode: Unify Plan and Action for Universal Granularity Control"**.
Zhaoyang Yu , Jiayi Zhang, Huixue Su, Yufan Zhao, Yifan Wu, Mingyi Deng, Jinyu Xiang, Yizhang Lin, Lingxiao Tang, Yingchao Li, Yuyu Luo, Bang Liu, Chenglin Wu.
ArXiv:2510.23564. [Under Review]

[2] **"InteractComp: Evaluating Search Agents With Ambiguous Queries"**.
Mingyi Deng, Lijun Huang, Yani Fan, Jiayi Zhang, . . . , **Zhaoyang Yu** , . . . , Tai Zhong, Xinyu Wang, Xiangru Tang, Nan Tang, Chenglin Wu, Yuyu Luo.
ArXiv:2510.24668. [Under Review]

[3] **"AFlow: Automating Agentic Workflow Generation"**.
Jiayi Zhang, Jinyu Xiang, **Zhaoyang Yu** , Fengwei Teng, Xionghui Chen, Jiaqi Chen, Mingchen Zhuge, Xin Cheng, Sirui Hong, Jinlin Wang, Bingnan Zheng, Bang Liu, Yuyu Luo, Chenglin Wu.
The International Conference on Learning Representations (ICLR), 2025. [**Oral**]

[4] **"Self-supervised Prompt Optimization"**.
Jinyu Xiang, Jiayi Zhang, **Zhaoyang Yu** , Xinbing Liang, Fengwei Teng, Jinhao Tu, Fashen Ren, Xiangru Tang, Sirui Hong, Chenglin Wu, Yuyu Luo.
The Conference on Empirical Methods in Natural Language Processing (EMNLP), 2025.

[5] **"Atom of Thoughts for Markov LLM Test-time Scaling"**.
Fengwei Teng, **Zhaoyang Yu** , Quan Shi, Jiayi Zhang, Chenglin Wu, Yuyu Luo.
The Thirty-Ninth Annual Conference on Neural Information Processing Systems (NeurIPS), 2025.

[6] **"Advances and Challenges in Foundation Agents: From Brain-inspired Intelligence to Evolutionary, Collaborative, and Safe Systems"**.
Bang Liu, Xinfeng Li, Jiayi Zhang, . . . , **Zhaoyang Yu** , . . . , Haohan Wang, Jiaxuan You, Chi Wang, Jian Pei, Qiang Yang, Xiaoliang Qi, Chenglin Wu.
ArXiv:2504.01990.

[7] **"VisJudge-Bench: Aesthetics and Quality Assessment of Visualizations"**.
Yupeng Xie, Zhiyang Zhang, Yifan Wu, Sirong Lu, Jiayi Zhang, **Zhaoyang Yu** , Jinlin Wang, Sirui Hong, Bang Liu, Chenglin Wu, Yuyu Luo.
ArXiv:2510.22373.

Selected Projects

OpenManus (Co-Founder) *Mar 2025*
https://github.com/FoundationAgents/OpenManus (**50k stars**, **8.8k forks**)
OpenManus is an open-source foundation agents project built on the principle of complete openness and accessibility, "no fortress, purely open ground". Our Python-based platform empowers the community to collaborate freely under the MIT License, making advanced AI agent technology available to everyone.

ReCode (Author) *Oct 2025*
https://github.com/FoundationAgents/ReCode (**350+ stars**)
Next paradigm for LLM Agent. Unify plan and action through recursive code generation for adaptive, human-like decision-making.

Awesome-Foundation-Agents (Contributor) *2025*
https://github.com/FoundationAgents/awesome-foundation-agents (**1.8k stars**)
We maintain a curated collection of papers exploring the path towards Foundation Agents, with a focus on formulating the core concepts and navigating the research landscape.

AFlow (Contributor) *2025*
https://github.com/FoundationAgents/AFlow (**300+ stars**)
ICLR 2025 Oral. Automating Agentic Workflow Generation.

Experience

Research Intern *Feb 2025 – Present*
DeepWisdom, Shenzhen

- Led paper ReCode[1], and was responsible for the idea, method design, paper writing, and most of the experiments, unifying multi-granularity planning and acting for LLM agents
- Co-founded OpenManus (50k+ stars), a concise and highly extensible agent framework, and promoted open-source collaboration and advance agent research as a member of Foundation Agents organization
- Co-authored multiple agent and LLM papers with the team at NeurIPS, ICLR, and EMNLP, contributing to method design, implementation, and experimental validation

Algorithm Engineer Intern *Jan 2024 – Apr 2024*
Xiaomi, Beijing

- Developed a tool-using agent based on CyberDog2 quadruped robot for language-guided robot control, implementing ReAct framework with vision, navigation, and perception tools
- Implemented vision tool interface integrating robot perception with agent reasoning through structured observation feedback
- Constructed domain-specific dataset and fine-tuned MiLM-6B to improve tool calling and sequential reasoning for robotic tasks

Research Assistant *June 2022 – Aug 2023*
GeWu Lab, Renmin University of China

- Deployed sensory substitution device for visually impaired users, developing instruction manual and conducting user studies on object manipulation and navigation tasks
- Built emotion-aware robot system on CyberDog based on Wenlan model with composite motion primitives, demonstrated at BAAI Conference 2022

- Trained audio-visual navigation policy with RL in SoundSpaces simulator and transferred to physical robot with sim-to-real deployment

Talks

"Advances and Challenges in Foundation Agents" *October 2025*
Invited talk at 2025 X-AGI & The 18th China-R Conference, Beijing

Service

- **Reviewer:** ICLR 2026, ICML 2025 Workshop MAS

Awards

Alibaba Global Mathematics Competition AI Challenge (Top 3) *2024*

Sa Shixuan Scholarship of Renmin Univ *2024*
Second Prize

The 15th National College Student Mathematics Competition *2023*
Second Prize

Tencent Youth Game Designer Challenge *2022*
Merit Award