

Zhaoyang Yu

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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 like [AutoEnv](#)[2], 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

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- [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] **“AutoEnv: Automated Environments for Measuring Cross-Environment Agent Learning”**.
Jiayi Zhang, Yiran Peng, Fanqi Kong, Yang Cheng, Yifan Wu, [Zhaoyang Yu](#) , Jinyu Xiang, Jianhao Ruan, Jinlin Wang, Maojia Song, HongZhang Liu, Xiangru Tang, Bang Liu, Chenglin Wu, Yuyu Luo.
ArXiv:2511.19304. [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.
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- [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] “Reasoning via Video: The First Evaluation of Video Models’ Reasoning Abilities through Maze-Solving Tasks”.
Cheng Yang, Haiyuan Wan, Yiran Peng, Xin Cheng, [Zhaoyang Yu](#), Jiayi Zhang, Junchi Yu, Xinlei Yu, Xiawu Zheng, Dongzhan Zhou, Chenglin Wu
ArXiv:2511.15065. [Under Review]
- [8] “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]
- [9] “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. [Under Review]

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> (400+ 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

Shanghai Open Source Innovation Elite Award *2025*

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