

Yibin (Leon) Liu

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Education

Northeastern University, Shenyang, China ↗

Sept 2022 – June 2026

Bachelor of Artificial Intelligence, College of Information Science and Engineering

- **Achievements:** 88/100 (Overall), 92/100 (Major)
- **Programs:** 985, 211, Double First Class University

Global Innovation Exchange - UW Seattle & Tsinghua ↗

Jul 2024 – Oct 2024

Access Computing Summer Program, AI & HCI

A collaboration between the University of Washington, Tsinghua University, and Microsoft, focused on AI and HCI innovation. Full scholarship awarded.

Selected Courses & GPA:

Machine Learning (99), Reinforcement Learning (96), Digital Signal Processing (96), Computing Theory (95), Discrete Mathematics (91), Computer Vision (93), Control Engineering (93), Speech Recognition (99), Autonomous Unmanned Systems (93), Neuromorphic Computing (93), Knowledge Representation&Reasoning (94)

Research Interests

My research interests include:

- Grounding language in spatial understanding and robotic manipulation
- Egocentric embodied self-perception of MLLMs
- Reasoning and planning in multi-modality and embodied AI systems
- Human-Robot Collaborative Interaction in Real-Simulation Hybrid Environments

Publications

RoboTwin 2.0: A Scalable Data Generator and Benchmark with Strong Domain Randomization for Robust Bimanual Robotic Manipulation ↗

Co-first author

Neurips 2025 (under review 1.4k+ GitHub Stars)

Tianxing Chen*, Zanxin Chen*, Baijun Chen*, Zijian Cai*, **Yibin Liu***, ... Ping Luo†, Yao Mu†

Widely adopted bimanual manipulation benchmark with 5 embodiments, 50 dual-arm tasks, and 700+ assets.

The Homework Wars: Exploring Emotions, Behaviours, and Conflicts in Parent-Child Homework Interactions ↗

ACM IMWUT/UbiComp 2025, Advisor First-Author

Nan Gao*, **Yibin Liu**, Xin Tang, Yanyan Liu, Chun Yu, Yun Huang, Xuhai Xu, Jun Wei, Yuanchun Shi

First work to leverage LLM-human collaboration for qualitative analysis to infer human behavioural states.

HyCodePolicy: Hybrid Language Controllers for Multimodal Monitoring and Decision in Embodied Agents

ICCV 2025 Workshop on Multi-Modal Reasoning for Agentic Intelligence

Yibin Liu*, Zhixuan Liang*, Zanxing Chen*, Tianxing Chen, ... , Yuseng Qing, Yao Mu

Self-Guide: A LLM Reasoning Enhancement Method Based on Self-Guided Planning. ↗

Journal of Chinese Information Processing (2024)

Yibin Liu, Zhenghao Liu, Yukun Yan, Shi Yu, Shuo Wang, Liner Yang, Yu Gu, Ge Yu, Huimin Chen

Revealed that enhancing LLM agent reasoning relies on injecting useful information rather than debate/reflection.

Research Experience

University of North Carolina at Chapel Hill – Research Intern

Jun 2025 – Present, Remote

Advisor: Prof. Mingyu Ding ↗

- Enhancing MLLMs with spatial understanding and action-level reasoning for robotic manipulation via human language instructions and AR-guided interactions.

Shanghai Jiao Tong University – Research Assistant
Advisor: Prof. Yao Mu

Mar 2025 – Present, Shanghai, China

- Core contributor to RoboTwin 2.0, leading robot policy code generation for scalable bimanual manipulation.

Pervasive HCI Lab, Tsinghua University – Research Assistant
Advisor: Prof. Nan Gao, Prof. Chun Yu

Jun 2024 – Jan 2025

- Conducted research in using LLM and HCI to infer human behaviors and mental states. Our research represents a application of LLMs to encode and analyze human behavior through dialogue data directly.

Industry Experiences

Horizon Robotics – Cloud Platform Intern
Mentor: Yusen Qin (VP of Technology, D-Robotics)

Jun 2025 – Present, Beijing, China · Hybrid

- Developing the RDK-agent, building an LLM-powered Copilot for robotics development.

Academic Activities

- **Community:** Co-Founder of VapourX, an open community for embodied AI beginners, and researchers.
- **Workshop Service:** Student Committee of TriFusion Workshop @ SIGGRAPH Asia 2025
- **Open-Source Contribution:** Contributor of Embodied-AI-Guide (7.3k+ GitHub Stars).
- **Academic Service:** Reviewer for Chinese CHI 2024.
- **Talks:** 2024.08, “Retrieval-Augmented Generation Modeling” for Mingtong Weilai (Beijing) Digital Health Science & Technology Research Institute.

Awards

- 2025.07 Outstanding Poster at ChinaSI 2025 (**Ranking 1st among 61 posters**, RoboTwin 2.0).
- 2024.11 Outstanding Individual in Technological Innovation of Northeastern University.
- 2024.05 **Finalist** in Mathematical Contest in Modeling (MCM/ICM 2024, **Top 1.69% of 10,387 teams**).
- 2023.10 National Level Third Prize in **RoboCup** China Competition, Simulation 3D League.
- 2023.10 National Level Second Prize in **FIRA SimuroSot** China Competition.
- 2023.11 Future Technology Taihu Scholarship & Excellent Student Scholarship at Northeastern University.

Projects

RDK Copilot: LLM-powered Development Copilot for Robotics at Horizon Robotics (Horizon Robotics)

Mar – May 2025

- Developed and deployed a VSCode plugin that assists robotic system development using LLMs. Supported features include automatic coding, environment setup, code completion, and manipulation data acquisition.

MinRL: Minimal, Clean Code for Reinforcement Learning (100 Stars)

GitHub Repository

- Recognized and pinned by MathFoundationRL, the most popular RL course on Chinese platforms Developed a RL framework featuring clean implementations of fundamental algorithms.

Bencao RAG Medical Intelligent Assistant

GitHub Repository

- Developed a medical knowledge question-answering system that integrates context awareness, internet access, knowledge graphs, and RAG method to provide accurate and personalized medical information.

Technologies

Languages: Python, C++, C, HTML/CSS, JavaScript, SQL, MATLAB/Simulink, LaTeX

Technologies: PyTorch, Hugging Face, scikit-learn, ROS, OpenCV, MCP, Git, RAG, Linux, SLAM