Zicong Zhang

Shanghai, China | zhangzico@sjtu.edu.cn | +(86) 188 9181 2036

https://zhangzicong518.github.io

Education

Shanghai Jiao Tong University, B.S. in Computer Science   Sept 2023 – Present

- John Hopcroft Class, Zhiyuan College (Honor Program)
- GPA: 89.5/100
- **Coursework:**
  Math: Mathematical Logic(97), Information Theory(97), Linear Algebra(94)
  CS: Foundations of Data Science(100), Machine Learning Theory(98), Computer System Design(98), Program Design and Data Structure(96), Machine Learning(95), Algorithm(94)

Research Experience

Multimodal Reasoning and Generic Agent, Microsoft Research Asia, intern   July 2025 – Jan 2026

- Proposed and implemented a tool-integrated RL paradigm that unifies long-chain-of-thought reasoning and tool-calling into a single hybrid thinking mode, enabling vision–language models to "think with images" more effectively
- Built and modified a large-scale, high-fidelity simulation environment that generates diverse, realistic agent–tool interaction trajectories, providing the massive training data required for robust tool-calling agents.

Continual Learning with Model Fusion, SJTU MIFA Lab, intern   July 2024 – April 2025

- Co-led development of a novel continual learning framework for VLMs by introducing model fusion
- Proposed aggregating the results of multiple decoupled task-specific models for prediction in zero-shot scenarios.
- Conducted extensive experiments on multiple benchmarks, demonstrate that outperforming the original pre-trained VLM and other state-of-the-art continual learning methods.

Awards

- Zhiyuan Honor Awards (Top 10% in SJTU) 2023,2024, 2025
- The Third Prize of Academic Scholarship (Top 30% in major) 2024, 2025

Publications

Enhanced Continual Learning of Vision-Language Models with Model Fusion

Haoyuan Gao*, Zicong Zhang*, Yuqi Wei, Linglan Zhao, Guilin Li, Yexin Li, Linghe Kong, Weiran Huang

The Fouteenth International Conference on Learning Representations

Tracing the Dance of Embeddings: Visualizing High-Dimensional Sample-wise Trajectory for Training Analysis

Yiming Liu*, Zicong Zhang*, Yun Lin, Ruofan Liu, Yuhuan Huang, Weiyu Kong, Jinsong Dong

[Under Review]

Projects

Environment Scaling for General Agentic Model – *Microsoft Research Asia*   Jul 2025 – Jan 2026

- Collected 150k real-world APIs from RapidAPI, MCP-Server and ToolBench; embedded api info to build a similarity-weighted dependency tool graph.
- Applied Louvain community detection to partition the graph into hundreds functional domains, and automatically derived a unified database schema per domain following read-write paradigm.
- Materialised each API as deterministic read/write operators on the domain-specific schema, enabling fully verifiable environment states
- Sampled long-horizon, logically coherent tool sequences on dependency graph, and generate diverse, high-fidelity agent–environment interaction trajectories for training

Scaling Active Perception for Multimodal Reasoning – *Microsoft Research Asia*   Jul 2025 – Jan 2026

- Unified long-chain reasoning and tool-calling into a single hybrid thinking mode through SFT and RL, enabling vision-language models to autonomously switch thinking modes while "thinking with images"
- Curated high-quality long-CoT trajectories via teacher distillation and iterative rejection sampling and relieve tool-use hallucinations and inefficiencies
- Designed mode-aware process rewards that encourage the model to leverage both internal reasoning and external tools in a complementary manner
- Evaluated on MathVision, MathVista, HRBench, V* and other math or perception-oriented benchmarks, surpassing the original VLM baseline across various datasets

Continual Learning Framework for VLMs   July 2024 - Jan 2025

Results in papers Enhanced Continual Learning of Vision-Language Models with Model Fusion

- Designed a continual learning framework for VLMs by introducing model fusion
- Deployed a pipeline and conducted extensive experiments on multiple benchmarks, achieving up to 2% improvement over other state-of-the-art continual learning methods.

Technologies

Language: Mandarin (native), English (CET-6 600, TOEFL under preparation)

Programming: C/C++, Python, Rust

Technologies: Git, Pytorch, Latex, vLLM, VeRL, LLaMA-Factory, Deepspeed