

# Zihan Huang

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## EDUCATION

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### Shanghai Jiao Tong University

Sep. 2022 – Jun. 2026 (expected)

*B.S. Engineering*

*Shanghai, China*

- **Core Coursework:** C++ Programming (93), Data Structure and Algorithm (93), Advanced Mathematics (84), Linear Algebra (88), Theory and Application of AI (87), Practice of AI Algorithms (90)

## RESEARCH INTERESTS

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**Spatial Understanding of Large Language Model**

**Unified Multimodal Understanding and Generation Models**

**Multimodal Agentic Reinforcement Learning**

## RESEARCH EXPERIENCE

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### Actively Constructing Spatial Beliefs in Foundation Models

June. 2025 – Sep. 2025

*Northwestern-MLL-Lab (Advised by Prof. Manling Li)*

*Evanston, IL*

- Proposed the **Theory of Space (ToS)**, a novel framework to evaluate an agent's ability to build a genuine spatial understanding of an environment through active, curiosity-driven exploration.
- Developed a comprehensive benchmark with both text-based and visual environments, and introduced an innovative protocol to **directly probe an agent's internal cognitive map** at each step.
- Systematically evaluated state-of-the-art foundation models, **disentangling exploration strategy from reasoning ability** and identifying key failure modes in spatial belief management.
- Submitted to ICLR 2026 (Co-first author)

### InternLM3 Post-training

Nov. 2024 – Feb. 2025

*Shanghai AI Laboratory*

*Shanghai, China*

- Enhanced proprietary InternLM3 model's subjective, Math, and Code capabilities via multi-machine, multi-GPU fine-tuning and **extensive data ratio experiments**, achieving a 3-5% performance increase on renowned benchmarks.
- Developed an asynchronous AutoIF-based data construction pipeline, significantly boosting instruction following performance and automating data labeling/classification to ensure training data quality; improved data quality and security review code for data integrity and compliance.

## WORK EXPERIENCE

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### TikTok Platform Governance

Mar. 2025 – May. 2025

*Bytedance Inc.*

*Shanghai, China*

- Enhanced model performance by curating high-quality, multi-modal datasets (using CLIP, rejection sampling) and executing advanced training methodologies including SFT and RL (GRPO, DAPO).
- Built a tailored domain-specific benchmark from the refined dataset for robust evaluation of model performance on ecommerce tasks.

## SKILLS

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**Technical Skills:** C/C++, Python, JavaScript, Go, PyTorch, DeepSpeed and vLLM.

**Language:** English: TOEFL 101, Chinese: Native.

## EXTRACURRICULAR EXPERIENCES

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### Wilderness Survival Club

Oct. 2023 – Oct. 2024

*Expedition Leader*

- Led multiple challenging multi-day, heavy-pack trekking expeditions for members in Zhejiang province.
- Designed and delivered numerous outdoor skills workshops and educational lectures, imparting essential wilderness knowledge and safety protocols.
- Contributed to club management, including member recruitment, event planning, and equipment management.