

Siyuan LIU


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Education

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|---|-------------------------------------|
| The Hong Kong Polytechnic University (PolyU) , Hong Kong | Sep. 2023 – Jun. 2027 (Expected) |
| • BSc in Computing and AI GPA: 3.61 / 4.3 | |
| Stanford University , Palo Alto, US | Jun. – Aug. 2025 |
| • Summer School Program in Computer Science | |
| University of Waterloo , Waterloo, Canada | Sep. – Dec. 2025 |
| • Exchange Program in Math | |

Publications

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| BreakBeat: AI-Powered Dance Movement Segmentation & Choreography Insight Platform  , CVPR 2025 Demo Track | Jun. 2025 |
| • Siyuan Liu , Jingwen Yang, Jiawen Duan | |
| Infi-Med: Low-Resource Medical LLMs with Robust Reasoning Evaluation , <i>arXiv preprint</i> | May 2025 |
| • Zeyu Liu, Zhitian Hou, Yining Di, Kejing Yang, Zhijie Sang, Congkai Xie, Jingwen Yang, Siyuan Liu , Jialu Wang, Chunming Li, Ming Li, Hongxia Yang, <i>arXiv:2505.23867</i> , May 2025. | |
| Enhancing Suicide Risk Detection with MDF-FOF , <i>IEEE Big Data 2024</i> | Jun. 2024 |
| • Zheng Shouwen, Zhou Taiqi, Tao Yingzhi, Chen Junru, Wang Ruofei, Liu Siyuan , in <i>Proc. of the IEEE Int'l Conf. on Big Data</i> , pp. 8581–8590, Jun. 2024. | |

Research

Tsinghua NLP Lab , **Department of Computer Science, THU** Jun. 2024 – Aug. 2024
Research Intern — Prof. Han Xu (w/ ModelBest Inc.)

Project: Development of Xiaoda  — **An AI-powered Student Growth Assistant based on LLMs**

- Built and curated a multilingual knowledge base to support LLM-driven personalized dialogue and student growth assistance.
- Drove product iteration through user feedback analysis and cross-functional collaboration with design and engineering teams.

Dec. 2026 – Present

Project: Long-Text Embedding and Hybrid Attention for Memory-Efficient LLMs

- Designed long-text embedding pipelines with a focus on efficient representation under extended context lengths.
- Investigated hybrid attention architectures to reduce memory usage while maintaining embedding accuracy in long-context settings.

RAIDS Lab , **Department of Industrial and Systems Engineering, PolyU**

Jul. 2024 – Present

Undergraduate Researcher — Prof. Zheng Pai

Project: Integrating Vision and Tactile Sensing Algorithms for Multimodal Robot Hand Teleoperation in Smart Manufacturing


- Built **LEGOBench**, a novel multimodal benchmark for evaluating VLMs in LEGO assembly tasks (part identification, pose estimation, connection reasoning).
- Designed structured prompts and standardized outputs to align model generation with robotic execution requirements.
- Implemented an end-to-end evaluation pipeline compatible with HuggingFace models, including Qwen2.5-VL, with automated CSV-based benchmarking.
- Reproduced baselines from PhysBench and verified cross-benchmark generalization to instruction understanding tasks.

ReaLLM-Labs , **Department of Computing, PolyU**

Jan. 2025 – Jun. 2025

Research Assistant — Prof. Hongxia Yang

Project: ReaLLM-Med-Eval  — **A Robust Evaluation Framework for Medical LLMs**

- Ran large-scale experiments evaluating instruction-followed SFT models on multimodal medical tasks using MMMU, MedBench, and PMC-VQA.
- Cleaned and organized medical instruction datasets to support SFT and reproducible benchmark creation.
- Contributed to arXiv publication *arXiv:2505.23867* , assisting in writing and visualizations.

Awards

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| IEEE BigData 2024 Cup - Team ranked 1st out of 47 teams with cash prize | 2024 |
| Talent Development Scholarship - HKSAR Government Scholarship Fund (HK\$10,000 US\$1,280) | 2025 |
| Most Outstanding Academic Achievement Award - Recognised for top academic performance | 2024, 2025 |
| Dean's Honours List - Recognised for outstanding academic performance | 2024/25 |

Technical Skill

Languages: C++, Python, R, Java

Software: cursor, Pycharm, VS Code, IntelliJ IDEA