Minghao (Mark) Liu

The Hong Kong University of Science and Technology, Hong Kong SAR, China
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EDUCATION

BEng in Computer Science HKUST, Hong Kong SAR 2022–2026 (expected)
CGA: 3.901/4.3 (top 2%)

Exchange Student McKelvey School of Engineering, Washington University in St. Louis Fall 2024
GPA: 3.94/4.00

PUBLICATIONS

- **A Benchmark for Evaluating Purchase Intention Comprehension Abilities of Large Language Models in E-commerce**
  Wenxuan Ding*, Weiqi Wang*, Sze Heng Douglas Kwok, **Minghao Liu**, Tianqing Fang, Jiaxin Bai, Xin Liu, Changlong Yu, Zheng Li, Chen Luo, Qingyu Yin, Bing Yin, Junxian He, Yangqiu Song.
  Findings of EMNLP 2024
- **MedEBench: Revisiting Text-instructed Image Editing on Medical Domain**
  Minghao Liu, Zhitao He, Zhiyuan Fan, Qingyun Wang, Yi R. Fung
  Submitted to EMNLP 2025

PROJECTS & RESEARCH EXPERIENCE

UROP, HKUST Advisor: Dan Xu Jun–Aug 2023

- Worked on **depth estimation** using diffusion models.
- Implemented a UNet-based architecture inspired by *DepthGen*.
- Designed an interpolation algorithm to reduce distribution shift on the NYU-Depth V2 dataset.
- Developed a diffusion-based transformer model for robust scene understanding.

UROP, HKUST Advisor: Yu Hu Sep–Dec 2023

- Studied the **Firing Rate Network Model** to understand brain-wide neural dynamics in zebrafish.
- Analyzed neural activity data using statistical and machine learning methods.
- Simulated recurrent neural circuits and trained connectivity using **Physics-Informed Neural Networks (PINNs)**.

KnowComp Group, HKUST Advisor: Yangqiu Song Feb 2024 – Sep 2024

- **BrainASER (Led by Shi Haochen)**: Explored the relationship between neural activity and **knowledge graph** structures.
  - Investigated structural similarities between the brain and knowledge graphs.
  - Aligned fMRI data (Narratives dataset) with story-based stimuli to study brain-language interactions.
  - Contributed to developing brain-inspired representations for downstream NLP tasks.

- **IntentionQA (Led by Ding Wenxuan)**: A benchmark to evaluate language models' understanding of purchase intentions in E-commerce.
  - Designed to test LMs on inferring user intent and predicting future purchases.
  - Contributed to data preprocessing, product-intention alignment via ASER, and negative distractor sampling.
  - Helped evaluate 19 LMs, revealing limitations in reasoning over real-world E-commerce scenarios.

RenLab, HKUST Advisor: Yi R. (May) Fung Feb 2025 – Present

- Researching medical image editing and developing automatic evaluation methods for assessing multimodal model performance in clinical and research contexts.
- Developing **agent-based simulation** systems grounded in real-world legislation and bills to assess and predict the impact of social policies. (Ongoing)

STANDARDIZED TESTS

- IELTS: 7.0

AWARDS & SCHOLARSHIPS

- First Prize – 37th Chinese Physics Olympiad (Provincial Level) 2020
- First Prize – 38th Chinese Physics Olympiad (Provincial Level) 2021
- First Prize – Chinese Mathematical Olympiad in Senior (Provincial Level) 2021
- Talent Development Scholarship – HKSAR Government Scholarship Fund 2023
- Scholarship for Continuing Undergraduate Students 2023–24
- Dean's List

EXTRACURRICULAR ACTIVITIES

- Mechanical Engineer – HKUST RoboMaster Team ENTERPRIZE Sep 2022 – Feb 2023