JIAZHEN LIU

jliugj@connect.ust.hk · +86 15805487199 · Homepage

EDUCATION

Ph.D. Candidate at HKUST Hong Kong, China — Sep 2024 ▸ Now
In CSE department, supervised by Prof. CHEN, Long; **GPA: 3.9 / 4.3**

Master at Renmin University of China Beijing, China — Sep 2021 ▸ Jun 2024
Major in Computer Application Technology; **GPA: 3.59 / 4**

B.S. at Shandong University Shandong, China — Sep 2017 ▸ Jun 2021
Major in Computer Science; **GPA: 4.68 / 5**

SELECTED PUBLICATIONS

1. **Jiazhen Liu**, Mingkuan Feng, Long Chen. **Better, Stronger, Faster: Tackling the Trilemma in MLLM-based Segmentation with Simultaneous Textual Mask Prediction. CVPR**, 2026.
   - Proposes a novel parallel mask decoding paradigm to address the trilemma in MLLM segmentation.
   - Achieves SOTA results in dialogue, inference speed, and segmentation performance simultaneously.

   Preprint: https://arxiv.org/abs/2512.00395.

2. **Jiazhen Liu**, Yuchuan Deng, Long Chen. **Empowering Small VLMs to Think with Dynamic Memorization and Exploration. ICLR**, 2026.
   - Designs a hybrid SFT and RL training strategy to activate the reasoning abilities of small VLMs.
   - Demonstrates significantly improved performance over standard SFT or SFT-GRPO hybrid methods.

   Preprint: https://arxiv.org/abs/2506.23061.

3. **Jiazhen Liu**, Yuhan Fu, Ruobing Xie, Runquan Xie, Xingwu Sun, Fengzong Lian, Zhanhui Kang, Xirong Li. **PhD: A ChatGPT-Prompted Visual Hallucination Evaluation Dataset. CVPR**, Highlight, 2025
   - A comprehensive study on the sources of visual hallucinations in MLLMs and targeted benchmark design.
   - 3 types of visual hallucination data: visual confusions, language biases, and knowledge contradictions.

   Code: https://github.com/jiazhen-code/PhD.

4. **Jiazhen Liu**, Long Chen. **Segmentation as A Plug-and-Play Capability for Frozen Multimodal LLMs. Under Review**, 2025.
   - Introduces a plug-and-play segmentation module that integrates with frozen MLLMs.
   - Preserves the MLLM's original dialogue capabilities by requiring no weight adjustments.

   Preprint: https://arxiv.org/abs/2510.16785.

5. **Jiazhen Liu**, X. Li. **Geometrized Transformer for Self-Supervised Homography Estimation. ICCV**, 2023
   - GeoFormer, a new detector-free feature matching method for homography estimation.
   - Using the classical RANSAC geometry for attentive region search.

   Code: https://github.com/ruc-aimc-lab/GeoFormer.

6. **Jiazhen Liu**, Xirong Li, Qijie Wei, Jie Xu, Dayong Ding. **Semi-Supervised Keypoint Detector and Descriptor for Retinal Image Matching. ECCV**, 2022
   - SuperRetina, the first end-to-end method for RIM with jointly trainable keypoint detector and descriptor.
   - Enhance the keypoint labels during each training epoch, mitigating the limitations of manual labeling.

   Code: https://github.com/ruc-aimc-lab/SuperRetina.

Internships

Tencent · **Beijing** Jul 2025 ▸ Jan 2026
Vision Foundation Model Algorithm Center, **Qingyun Intern Project**:

- Enabling the seamless integration of diverse visual grounding tasks into the MLLM.
- Advanced the MLLM's capabilities in reasoning for complex visual grounding scenarios.

Highlights: Novel MLLM grounding paradigm, Enhanced spatial understanding.

Tencent · **Beijing** Feb 2023 ▸ Mar 2024
Hunyuan Large Model Pre-training Team:

- End-to-end development of Tencent's **Hunyuan** MLLM, including large-scale cluster training and comprehensive benchmark evaluation.
- Focused on mitigating **hallucination** and engineered robust data pipelines for large-scale training.

Highlights: MLLM pipeline contribution, Hallucination and data engineering research, CVPR 2025 Highlight.

ByteDance · **Beijing** Sep 2022 ▸ Jan 2023
Platform Governance Team (Computer Vision):

- Designed and implemented a matching model to detect image infringements on e-commerce platforms.
- Authored a research paper on the novel image matching method, accepted at ICCV.

Highlights: Authored an ICCV paper on image matching.

Awards and Honors

Excellent Master Thesis Award, Chinese Institute of Electronics Mar 2025
National Scholarship (Graduate Students) Sep 2023
National Scholarship (Undergraduate Students) for **three** consecutive years. Dec 2018 ▸ Dec 2020