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EDUCATION

The Hong Kong University of Science and Technology

Hong Kong, China

Ph.D in *Computer Science*

Feb 2020 - now

Supervised by Prof. James T. Kwok

The Chinese University of Hong Kong

Hong Kong, China

M.Sc. in *Computer Science*

Sep 2018 - Jul 2019

Supervised by Prof. Bei Yu

GPA: 3.39/4.0

Tongji University

Shanghai, China

B.Eng. in *Software Engineering*

Sep 2014 - Jul 2018

GPA: 91.2/100

Ranking: 6/182 (overall) 1/32 (Multimedia Science)

EXPERIENCE

Huawei Noah's Ark Lab

Hong Kong, China

Intern @ *AI theory Lab*, supervised by Prof. Zhenguo Li

Jun 2019 - Now

The Chinese University of Hong Kong

Hong Kong, China

Research Assistant, supervised by Prof. Bei Yu

Sep 2018 - May 2019

Microsoft Research Asia

Beijing, China

Intern @ *Intelligent Multimedia Group*, supervised by Dr. Chong Luo

Jan 2018 - Jul 2018

CCi Intelligence Co., Ltd

Shanghai, China

Research Intern

Jul 2017 - Jan 2018

SELECTED PUBLICATIONS

Full publication list on my [Google Scholar](https://scholar.google.com/citations?user=zhili.liu). (* denotes equal contribution)

I. Multi-modal Foundation Models

- [1] **EMOVA: Empowering Language Models to See, Hear and Speak with Vivid Emotions** CVPR 2025

Kai Chen*, Yunhao Gou*, Runhui Huang*, **Zhili Liu***, Daxin Tan*, and other 26 authors

- [2] **Corrupted but Not Broken: Understanding and Mitigating the Negative Impacts of Corrupted Data in Visual Instruction Tuning** EMNLP 2025 **Oral**

Yunhao Gou, Hansi Yang, **Zhili Liu**, Kai Chen, Yihan Zeng, Lanqing Hong, Zhenguo Li, Qun Liu, Bo Han, James Kwok, Yu Zhang

II. Multi-modal Foundation Models - Mixture of Cluster-conditional Experts

- [3] **Mixture of Cluster-conditional LoRA Experts for Vision-language Instruction Tuning** TIP 2025

Yunhao Gou*, **Zhili Liu***, Kai Chen*, Lanqing Hong, Hang Xu, Aoxue Li, Dit-Yan Yeung, James T. Kwok, Yu Zhang

- [4] **Task-customized Masked Autoencoder via Mixture of Cluster-conditional Experts** ICLR 2023 **Spotlight**
Zhili Liu, Kai Chen, Jianhua Han, Lanqing Hong, Hang Xu, Zhenguo Li, James Kwok
- [5] **Task-Customized Self-Supervised Pre-training with Scalable Dynamic Routing** AAAI 2022
Zhili Liu, Jianhua Han, Kai Chen, Lanqing Hong, Hang Xu, Chunjing Xu, Zhenguo Li

III. Multi-modal Foundation Models - Model Safety & Reasoning

- [6] **Mixture of insighTful Experts (MoTE): The Synergy of Thought Chains and Expert Mixtures in Self-Alignment** ACL 2025
Zhili Liu*, Yunhao Gou*, Kai Chen*, Lanqing Hong, Jiahui Gao, Fei Mi, Yu Zhang, Zhenguo Li, Xin Jiang, Qun Liu, James T. Kwok
- [7] **AtomThink: Multimodal Slow Thinking with Atomic Step Reasoning** TPAMI 2025
Kun Xiang*, **Zhili Liu***, Terry Jingchen Zhang, Yinya Huang, Yunshuang Nie, Kaixin Cai, Yiyang Yin, Runhui Huang, Hanhui Li, Yihan Zeng, Yu-Jie Yuan, Jianhua Han, Lanqing Hong, Hang Xu, Xiaodan Liang
- [8] **Perceptual Decoupling for Scalable Multi-modal Reasoning via Reward-Optimized Captioning** ArXiv 2025
Yunhao Gou*, Kai Chen*, **Zhili Liu***, Lanqing Hong, Xin Jin, Zhenguo Li, James T. Kwok, Yu Zhang
- [9] **Implicit Concept Removal of Diffusion Models** ECCV 2024
Zhili Liu, Kai Chen, Yifan Zhang, Jianhua Han, Lanqing Hong, Hang Xu, Zhenguo Li, Dit-Yan Yeung, James Kwok
- [10] **Eyes Closed, Safety On: Protecting Multimodal LLMs via Image-to-Text Transformation** ECCV 2024
Yunhao Gou*, Kai Chen*, **Zhili Liu***, Lanqing Hong, Hang Xu, Zhenguo Li, Dit-Yan Yeung, James Kwok, Yu Zhang

IV. Model Efficiency

- [11] **MoPE-CLIP: Structured Pruning for Efficient Vision-Language Models with Module-wise Pruning Error Metric** CVPR 2024
Haokun Lin, Haoli Bai, **Zhili Liu**, Lu Hou, Mui Sun, Linqi Song, Ying Wei, Zhenan Sun
- [12] **DiffFit: Unlocking Transferability of Large Diffusion Models via Simple Parameter-Efficient Fine-Tuning** ICCV 2023 **Oral**
Enze Xie, Lewei Yao, Han Shi, **Zhili Liu**, Daquan Zhou, Zhaoqiang Liu, Jiawei Li, Zhenguo Li

PATENT

[CN112633385A] **Zhili Liu**, Qijun Luo, Lanqing Hong, Chongxuan Li, Jun Zhu, Zhenguo Li. *Relaxed conditional image transfer for semi-supervised domain adaptation*, Published at Apr 8th, 2025

[CN111291809A] Hang Xu, **Zhili Liu**, Fengwei Zhou, Jiawei Li, Xiaodan Liang, Zhenguo Li, Li Qian *EHSOD: CAM-Guided End-to-end Hybrid-Supervised Object Detection with Cascade Refinement*, Published at Apr 12th, 2024

SELECTED HONOURS

CUHK Entrance Scholarship & Distinguished Academic Performance Scholarship (top 3%)	2019/2018
Shanghai Outstanding Graduates, Shanghai (Top 5%)	2018
Scholarship for Outstanding Student, Tongji University (Top 5%)	2017/2016/2015

ACADEMIC SERVICES

Conference Reviewer

ICLR, ICML, NeurIPS, CVPR, ICCV, ECCV, AAAI, IJCAI

Journal Reviewer

TPAMI, TIP, TNNLS, AIJ