Wenzhuo Liu

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Education

Institute of Automation, Chinese Academy of Sciences 2020.09–present
Ph.D. Computer Application Technology, School of Artificial Intelligence

Beijing Institute of Technology 2016.09–2020.06
B.S. Computer Science and Technology, School of Computer Science
Selected Coursework: Natural Language Processing, Computer Vision Processing, Machine Learning

Research Interests

My research focuses on advancing multimodal foundation models (e.g., CLIP, LLaVA) to enhance their scalability, adaptability, and efficiency in real-world scenarios. Specifically, I am exploring:

- **Continual VLM learning algorithms**: Enable multimodal models to evolve incrementally, integrating new knowledge without forgetting.
- **Flexible VLM architectures**: Build models that adaptively adjust parameters and resolution based on real-world tasks.

Honors and Awards

Merit Student, 20%, University of Chinese Academy of Sciences 2022
Excellent Academic Scholarship, 15%, Beijing Institute of Technology 2019
Excellent Academic Scholarship, 15%, Beijing Institute of Technology 2018

Publications

- **Wenzhuo Liu**, Fei Zhu, Longhui Wei, Haiyang Guo, Cheng-Lin Liu* . "LLaVA-c: Continual Improved Visual Instruction Tuning." Advances in Neural Information Processing Systems (NeurIPS) (2025), under review.
- **Wenzhuo Liu**, Fei Zhu*, Longhui Wei, Qi Tian. "C-CLIP: Multimodal Continual Learning for Vision-Language Model." International Conference on Learning Representations (ICLR) (2025), accepted.
- **Wenzhuo Liu**, Fei Zhu, Shijie Ma, Cheng-Lin Liu*. "MSPE: Multi-Scale Patch Embedding Prompts Vision Transformers to Any Resolution." Advances in Neural Information Processing Systems (NeurIPS) (2024), accepted.
- **Wenzhuo Liu**, Xin-Jian Wu, Fei Zhu, Ming-Ming Yu, Chuang Wang, Cheng-Lin Liu*. "Class Incremental Learning with Self-Supervised Pre-Training and Prototype Learning." Pattern Recognition (PR) (2025), accepted.

- **Wenzhuo Liu**, Fei Zhu, Cheng-Lin Liu*. "Branch-Tuning: Balancing Stability and Plasticity for Continual Self-Supervised Learning." IEEE Trans. Neural Networks and Learning Systems (TNNLS) (2025), accepted.
- **Wenzhuo Liu**, Fei Zhu, Cheng-Lin Liu*. "MSUN: Multi-Scale Unified Network for Native Any Resolutions." IEEE Trans. Image Processing (TIP) (2025), R&R.
- **Wenzhuo Liu**, Fei Zhu, Cheng-Lin Liu*. "Towards Non-Exemplar Semi-Supervised Class-Incremental Learning." IEEE Trans. Pattern Analysis and Machine Intelligence (T-PAMI) (2025), under review.
- Fei Zhu, Yujing Liu, **Wenzhuo Liu**, Zhaoxiang Zhang*. "Global Convergence of Continual Learning on Non-IID Data." arXiv preprint arXiv:2503.18511 (2025).
- Song Lai, Haohan Zhao, Rong Feng, Changyi Ma, **Wenzhuo Liu**, Hongbo Zhao, Xi Lin, Dong Yi, Min Xie, Qingfu Zhang, Hongbin Liu, Gaofeng Meng, Fei Zhu*. "Reinforcement Fine-Tuning Naturally Mitigates Forgetting in Continual Post-Training." arXiv preprint arXiv:2507.05386 (2025).
- Haiyang Guo, Fanhu Zeng, Fei Zhu, **Wenzhuo Liu**, Jian Xu, Xu-Yao Zhang, Cheng-Lin Liu*. "Federated Continual Instruction Tuning." ICCV (2025).
- Yi Chen, Jian Xu, Xu-Yao Zhang, **Wenzhuo Liu**, Yang-Yang Liu, Cheng-Lin Liu*. "Recoverable Compression: A Multimodal Vision Token Recovery Mechanism Guided by Text Information." AAAI (2025).
- Shijie Ma, Fei Zhu, **Wenzhuo Liu**, Zhun Zhong, Xu-Yao Zhang, Cheng-Lin Liu*. "Happy: A Debiased Learning Framework for Continual Generalized Category Discovery." NeurIPS (2024).
- Haiyang Guo, Fei Zhu, **Wenzhuo Liu**, Xu-Yao Zhang, Cheng-Lin Liu*. "Pilora: Prototype-Guided Incremental LoRA for Federated Class-Incremental Learning." ECCV (2024).

Academic Service and Teaching Assistant

Journal Reviewer: IEEE Transactions on Image Processing (TIP), IEEE Transactions on Neural Networks and Learning Systems (TNNLS), Elsevier Neural Networks.
Teaching Assistant: Machine Learning, Graduate Students Course at University of Chinese Academy of Sciences, 2022-2023.