Huanyu Zhang

Haidian District, Beijing

✉ huanyu.zhang@cripac.ia.ac.cn · 📞 (+86) 18755395968 · in huanyuzhang

Education

Chinese Academy of Science, Institute of automation, Beijing, China   2022 – 2027 (expected)

Ph.D student in Pattern Recognition and Intelligent System
Advisors: *Zhang Zhang, Liang Wang (FIEEE) and Tieniu Tan (FCAS, FIEEE)*

Xi'an Jiaotong University, Shaanxi, China   2018 – 2022

B.S. in Automation

Research Experience

Research Intern | General AI Group, Microsoft Research Asia   Nov. 2024 – now

- Conducted in-depth analysis of challenges in spatial reasoning for multimodal large language models (MLLMs), identifying limitations and proposing potential enhancement strategies.
- Explored multimodal reasoning methods within the current large model architecture, aiming to improve performance and interpretability on multimodal tasks.

Research Intern | Machine Learning Group, Microsoft Research Asia   Jul. 2024 – Oct. 2024

- Developed a retrieval-augmented forecasting framework to enhance the generalization capabilites of Time Series Foundation Models by integrating external knowledge.
- Proposed an effective knowledge integration method and an learnable retriever to obtain valuable information from knowledge base.

Publication & Preprints

- **LogoRA: Local-Global Representation Alignment for Robust Time Series Classification**
  Huanyu Zhang, Yi-Fan Zhang, Zhang Zhang, Qingsong Wen and Liang Wang
  IEEE Transactions on Knowledge and Data Engineering 2024 (CCF-A)
- **TimeRAF: Retrieval-Augmented Foundation model for Zero-shot Time Series Forecasting**
  Huanyu Zhang, Chang Xu, YiFan Zhang, Zhang Zhang, Liang Wang, Tieniu Tan and Jiang Bian
  Submitted to IEEE Transactions on Knowledge and Data Engineering
- **MME-RealWorld: Could Your Multimodal LLM Challenge High-Resolution Real-World Scenarios that are Difficult for Humans?**
  Yi-Fan Zhang, Huanyu Zhang, Haochen Tian, Chaoyou Fu, Shuangqing Zhang, Junfei Wu, Feng Li, Kun Wang, Qingsong Wen, Zhang Zhang, Liang Wang, Rong Jin and Tieniu Tan
  ICLR 2025
- **Spectral Decomposition and Adaptation for Non-stationary Time Series Anomaly Detection**
  Huanyu Zhang, Yi-Fan Zhang, Jian Liang, Zhang Zhang, Liang Wang and Tieniu Tan
  Submitted to IEEE Transactions on Knowledge and Data Engineering

Skills

- Programming Languages: Python > C++ == C > Java
- Platform: Linux
- Others: Pytorch

Honors and Awards

Outstanding Student Award   2020