Pengkun Jiao

Shanghai, China | pkjiao23@m.fudan.edu.cn | +86 18217186385

https://pengkun-jiao.github.io

Education Background

Fudan University, Doctor Computer Science and Technology — Sept 2021 – Now

- GPA: 3.2/4.0, Outstanding Doctoral Student Academic Scholarship

East China Normal University, Bachlor Computer Science and Technology — Sept 2017 – Jun 2021

- GPA: 3.24/4.0, University-Level Excellence Scholarship

Selected Research

Addressing Data Conflicts in Visual Instruction Tuning: A MoE Perspective — Jan 2024 – Nov 2024

- Propose decoupling the task space (specific instructions) from the skill space (LoRA experts), enabling the alignment of LoRA experts with varying levels of granularity to better address different task complexities
- Propose Linear Rectified Routing, a novel rectified expert activation strategy that facilitates learnable, dynamic, and sparse expert activation
- Introduce Dual-LoRA, a task- and instruction-separated dual low-rank adaptation paradigm that replaces complex granularity and routing strategies in MoE designs

Efficient Long-Sequence Reasoning for Large Language Models — Nov 2024 – Now

- Explore efficient long-sequence reasoning, particularly beyond the limitations of the attention window size.

Open-Vocabulary 3D Object Detection enhanced through foundational vision and language models — May 2023 – Nov 2023

- Explore the potential of foundational vision models to assist in proposing novel 3D objects
- Propose a hierarchical alignment of the 3D feature space with the visual-language feature space, accounting for object geometric correlations across modalities and integrating scene priors

Publications

Domain Expansion and Boundary Growth for Open-Set Single-Source Domain Generalization (TMM 2024) — 2022

***Pengkun Jiao**, Na Zhao, Jingjing Chen, Yu-Gang Jiang*

Unlocking Textual and Visual Wisdom: Open-Vocabulary 3D Object Detection Enhanced by Comprehensive Guidance from Text and Image (ECCV 2024) — 2023

***Pengkun Jiao**, Na Zhao, Jingjing Chen, Yu-Gang Jiang*

Continuous Adaptive Self-Supervised Learning for Universal Continual Test-Time Adaptation (Under Review) — 2023

***Pengkun Jiao**, Na Zhao, Jingjing Chen, Yu-Gang Jiang*

Rode: Linear Rectified Mixture of Diverse Experts for Food Large Multi-modal Models (Under Review) — 2024

***Pengkun Jiao**, Xinlan Wu, Bin Zhu, Jingjing Chen, Chong-Wah Ngo, Yu-Gang Jiang*

Visual Cue Enhancement and Dual Low-Rank Adaptation for Efficient Visual Instruction Fine-Tuning (Under Review) — 2024

***Pengkun Jiao**, Bin Zhu, Jingjing Chen, Chong-Wah Ngo, Yu-Gang Jiang*

Oversea Exchange Experience

Singapore University of Technology and Design (SUTD), Research Assistant — Apr 2023 – Nov 2023

- Complete a research project on Open-Vocabulary 3D Object Detection under the guidance of Prof. Na Zhao