Weijia Fan

✉ wakinghoursszu@outlook.com ✳ 📞 +86 19875501705

Website ✳ GitHub ✳ Google Scholar

Education

Master's degree in Computer Technology *Shenzhen University*
Master of Engineering *Sep. 2023 - Jun. 2026*
Final GPA: 3.65/4.0
Awards: Overseas Exchange Study Scholarship, Academic Scholarship

Bachelor's degree in IOT, minor in Economics *Harbin University of Commerce*
Bachelor of Engineering, Bachelor of Economics *Sep. 2019 - Jun. 2023*
Final GPA: 3.67/4.0
Ranking: 1/118
Awards: National Scholarship, School Scholarship, Merit Student, Software Copyright

Experience

Panorama-Language Model *Jun. 2025 - Nov. 2025*
Visiting Student *Karlsruhe Institute of Technology, Karlsruhe, Germany*

- Curated a robust benchmark for panoramic vision across diverse scenarios, including normal, occlusions, and accident scenarios, to ensure thorough model training and evaluation.
- Pioneered the Panorama-Language Model (PanLM), a well-designed model, filling the gap of existing VLMs in panoramic scene understanding.

Fisheye Calibration Project *May 2022 - Jul. 2022*
Engineer *IOT laboratory, Harbin, China*

- Developed a fisheye correction algorithm using latitude and longitude coordinates combined with edge-adaptive thresholds for curvature restoration and accurate rectification.
- Implemented and optimized the algorithm on an FPGA, achieving real-time processing at 67 FPS while maintaining high-fidelity image restoration.

Publications

- **Weijia Fan**, Ruiping Liu, Jiale Wei, Yufan Chen, Zichao Zeng, Di Wen, Jiaming Zhang*, Rainer Stiefelhagen. More than the Sum: Panorama-Language Modeling for Adverse Omni-Scenes. (Working Paper).

- **Weijia Fan**, Qiufu Li*, Jiajun Wen, Xiaoyang Peng, Linlin Shen. BCE3S: Binary Cross-Entropy-Based Tripartite Synergistic Learning for Long-Tailed Recognition. (Submitted to CoreA).

- **Weijia Fan**, Jiajun Wen, Xi Jia, Linlin Shen, Jiancan Zhou, Qiufu Li*. EPL: Empirical Prototype Learning for Deep Face Recognition. arXiv.2405.12447. (Under Review).

- Qiufu Li, Huibin Xiao, **Weijia Fan**, Linlin Shen*. Classification vs. Deep Feature Learning in Normalized Spaces with Different Scaling (Submitted to CoreA).

- **Weijia Fan**, Ru Zhang*, Hao He, Siyu Hou, Yongbo Tan. A Short-Term Price Prediction-Based Trading Strategy. *PLOS ONE*, 2023.

- Shizhen Bai, Hao He, Chunjia Han*, Mu Yang, Xinrui Bi, and **Weijia Fan**. What Makes a Theme Park Experience Less Enjoyable? Evidence from Online Customer Reviews of Disneyland China. *Frontiers in Psychology*, 2023. (AJG-1, SSCI-Q1).

- Shizhen Bai, Hao He, Chunjia Han*, Mu Yang, Dingyao Yu, Xinrui Bi, Brij B. Gupta, **Weijia Fan**, and Prabin Kumar Panigrahi. Exploring Thematic Influences on Theme Park Visitors' Satisfaction: An Empirical Study on Disneyland China. *Journal of Consumer Behaviour*, 2023. (AJG-2, SSCI-Q3).

Technical Skills

Programming Languages	Shell, C/C++, Java, Matlab, Python, MatLab, LaTeX
Frameworks & Libraries	PyTorch, TensorFlow, Transformers, vLLM.
Tools & Technologies	Git, Slurm, Linux Server Administration (Ubuntu, CentOS).

Language Proficiencies

Mandarin	Native
English	IELTS: 6.5 (R:6.5, L:5.5, W:6.5, S:6.5)	CET-6: 453

Research Statement & Interests

My research focuses on visual recognition tasks and label-effective learning paradigm. I have explored techniques ranging from contrastive learning for robust sample discrimination to classifier uniformity learning for balanced feature spaces.

Currently, my focus is on the practical application and evaluation of Vision-Language Models (VLMs), specifically investigating their capabilities and limitations in complex, 360-degree panoramic scenes.

In the future, I aim to bridge the gap between fundamental representation learning and the advanced capabilities of VLMs through three primary research thrusts:

1. BCE-based Learning Paradigm. Developing novel loss functions and strategies focusing on intra-class compactness and inter-class separability across diverse downstream tasks, like long-tailed recognition and multi-label learning.

2. Text-Enhanced Visual Encoding: Designing visual encoders that leverage the rich, open-vocabulary knowledge of Large Language Models (LLMs) to overcome the inherent limitations of traditional closed-set vision models.

3. Advancing VLM Applications: Probing the frontiers of existing VLMs in challenging domains such as complex document analysis and safety-critical panoramic environments to identify and solve key performance bottlenecks.