

# Yifei Chen

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## Education

Xi'an University of Technology, China

Sept. 2023 – Jun. 2026 (Expected)

M.Sc. in Computer Science

Southwest Petroleum University, China

Sept. 2018 – Jun. 2022

B.Eng. in Computer Science

## Research Summary

My research focuses on building **trustworthy, robust, and explainable** methods to drive scientific innovation. In particular, I explore video anomaly detection approaches that integrate **LLMs**, tackle **cross-domain** robustness and generalization challenges, and design **lightweight** architectures optimized for real-time deployment. Currently, I am engaged in research related to autonomous driving, and I am deeply interested in **autonomous driving** and **robotics**.

## Publications

- Minghua Zhao\*, **Yifei Chen**<sup>†\*</sup>, Jiahao Lyu, Shuangli Du, Zhiyong Lv, Lin Wang, SDAFE: A Dual-filter Stable Diffusion Data Augmentation Method for Facial Expression Recognition, *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP '25)*, Accepted
- Minghua Zhao\*, **Yifei Chen**<sup>†\*</sup>, Jiahao Lyu, Shuangli Du, Cheng Shi, Jing Hu, Hierarchical Semantics-Driven Multimodal Hyperbolic Unsupervised Video Anomaly Detection, *ACM Multimedia Conference (ACM MM '25)*, Under submission
- Yifei Chen**, Ross Greer, Technical Report for Argoverse2 Scenario Mining Challenges on Iterative Error Correction and Spatially-Aware Prompting, *Argoverse2 Scenario Mining Challenge 2nd (CVPR Workshop '25)*
- Jiahao Lyu, Minghua Zhao, Jing Hu, Xuwen Huang, **Yifei Chen**, Shuangli Du, VADMamba: Exploring State Space Models for Fast Video Anomaly Detection, *IEEE International Conference on Multimedia & Expo (ICME '25 Oral)*, Accepted
- Minghua Zhao, Yuxuan Lyu, Jiahao Lyu, **Yifei Chen**, Video Anomaly Detection Method Based on Multi-Scale Appearance-Motion Fusion, *China Multimedia Conference (China MM '25)*, Under submission
- Minghua Zhao, Xuwen Huang, Shuangli Du, Jiahao Lyu, **Yifei Chen**, Jing Hu, Cheng Shi, Zhiyong Lv, Multi-scale Attention Network with Forward Interval Frame Constraints for Video Anomaly Detection, *IET Image Processing Journal*, Under review

<sup>†</sup> represents corresponding author. \*represents these authors contributed equally to this work.

## Research Experience

Research Assistant at the Mi3 Lab, University of California, Merced

May. 2025 – present

- Won second place in the Argoverse2 Scene Mining Competition at CVPR 2025.

Research on Video Anomaly Detection in Surveillance Video

Mar. 2024 – May. 2025

- Proposed the Hierarchical Semantics-Driven Multimodal Hyperbolic Unsupervised Video Anomaly Detection framework to explore unsupervised video anomaly detection in non-Euclidean space.
- Constructed the vector quantization module within VADMamba, enabling efficient model training and inference.
- Constructed the Normal Video with Hierarchical Annotations dataset and co-authored multiple research papers.

Research on Facial Expression Recognition under Complex Imaging Conditions

Jun. 2023 – Mar. 2024

- Proposed the Dual-filter Stable Diffusion Data Augmentation Method for facial expression recognition tasks, effectively mitigating category distribution imbalance.
- Designed the FERNeXt for facial expression recognition, achieving SOTA performance on the FER2013 dataset.

## Additional Information

**Languages:** Mandarin (Native), English (Fluent)

**Technical Skills:** Python, C++, Java, SQL, Pytorch, TensorFlow, Spring Boot, Vue, Docker, Git