Zhonghang LIU

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Research Interest

The visual systems' performance largely depends on the data quality. My research interest is to automatically and efficiently identify outliers (anomalous data) via high-dimensional data analysis and machine learning. Currently, my primary goal is to employ unsupervised outlier detection techniques to multiple real-world applications such as Visual Place Recognition, AIGC and LLMs.

Education

Singapore Management University — Singapore
Ph.D. in Computer Science, Advisor: Prof. Daniel LIN — August 2020–Current

Huazhong Agricultural University — Wuhan, China
B.S. in Information and Computing Science — September 2016–June 2020

Internship

SmartMore — Shenzhen, China
Advisor: Dr. Jiangbo LU, Dr. Nianjuan Jiang — August 2022–August 2023

Institute of Automation, Chinese Academy of Sciences — Beijing, China
National Laboratory of Pattern Recognition, Advisor: Prof. Zhen LEI (IEEE Fellow) — August 2019–January 2020

Publication

- Rethinking Unsupervised Outlier Detection via Multiple Thresholding (first author) — ECCV 24
- Locally Varying Distance Transform for Unsupervised Visual Anomaly Detection (joint first author) — ECCV 22
- FlexUOD: The Answer to Real-world Unsupervised Image Outlier Detection (first author) — Submitted to CVPR 25
- Robust Self-supervision Generation for Unsupervised Outlier Detection (first author) — Prepared to Submit
- Rethinking Few-shot Anomaly Detection (first author) — Prepared to Submit
- Unveiling Advanced Frequency Disentanglement Paradigm for Low-Light Image Enhancement — ECCV 24
- UPS: Unified Projection Sharing for Lightweight Single-Image Super-resolution and Beyond — Neurips 24
- Dynamic Acoustic Field Fitting Network for Point Cloud Understanding — Submitted to CVPR 25
- Dynamic Taylor CNN for Few-Shot Point Cloud Semantic Segmentation — Prepared to Submit