Recent research

CVPR 2024

- Text-Guided Variational Image Generation for Industrial Anomaly Detection and Segmentation [CVPR 2024]
- RealNet: A Feature Selection Network with Realistic Synthetic Anomaly for Anomaly Detection [CVPR 2024][code]
- Toward Generalist Anomaly Detection via In-context Residual Learning with Few-shot Sample Prompts [CVPR 2024][code]
- Multimodal Industrial Anomaly Detection by Crossmodal Feature Mapping [CVPR 2024]
- Towards Scalable 3D Anomaly Detection and Localization: A Benchmark via 3D Anomaly Synthesis and A Self-Supervised Learning Network [CVPR 2024][code]
- Real-IAD: A Real-World Multi-view Dataset for Benchmarking Versatile Industrial Anomaly Detection [CVPR 2024][code][data]
- Supervised Anomaly Detection for Complex Industrial Images [CVPR 2024 comming]

ICLR 2024

- AnomalyCLIP: Object-agnostic Prompt Learning for Zero-shot Anomaly Detection [ICLR 2024] [code]
- MuSc: Zero-Shot Anomaly Classification and Segmentation by Mutual Scoring of the Unlabeled Images[ICLR 2024][code]

AAAI 2024

- Rethinking Reverse Distillation for Multi-Modal Anomaly Detection [AAAI 2024]
- Unsupervised Continual Anomaly Detection with Contrastively-learned Prompt [AAAI 2024][code]
- Few Shot Part Segmentation Reveals Compositional Logic for Industrial Anomaly Detection [AAAI 2024]
- DiAD: A Diffusion-based Framework for Multi-class Anomaly Detection [AAAI 2024][code]
- Generating and Reweighting Dense Contrastive Patterns for Unsupervised Anomaly Detection [AAAI 2024]
- AnomalyDiffusion: Few-Shot Anomaly Image Generation with Diffusion Model [AAAI 2024][code]

- AnomalyGPT: Detecting Industrial Anomalies using Large Vision-Language Models [AAAI 2024] [code][project page]
- A Comprehensive Augmentation Framework for Anomaly Detection [AAAI 2024]

WACV 2024

- ReConPatch: Contrastive Patch Representation Learning for Industrial Anomaly Detection [WACV 2024]
- Learning Transferable Representations for Image Anomaly Localization Using Dense Pretraining [WACV 2024][code]
- EfficientAD: Accurate Visual Anomaly Detection at Millisecond-Level Latencies [WACV 2024]
- Contextual Affinity Distillation for Image Anomaly Detection [WACV 2024]
- Attention Modules Improve Image-Level Anomaly Detection for Industrial Inspection: A DifferNet Case Study [WACV 2024]
- PromptAD: Zero-shot Anomaly Detection using Text Prompts [WACV 2024]
- High-Fidelity Zero-Shot Texture Anomaly Localization Using Feature Correspondence Analysis [WACV 2024]
- Cheating Depth: Enhancing 3D Surface Anomaly Detection via Depth Simulation [WACV 2024] [code]

NeurIPS 2023

- Real3D-AD: A Dataset of Point Cloud Anomaly Detection [NeurIPS 2023][code][中文]
- PAD: A Dataset and Benchmark for Pose-agnostic Anomaly Detection [NeurIPS 2023][code]
- Zero-Shot Anomaly Detection via Batch Normalization [NeurIPS 2023][code]
- SANFlow: Semantic-Aware Normalizing Flow for Anomaly Detection and Localization [NeurIPS 2023]
- Energy-Based Models for Anomaly Detection: A Manifold Diffusion Recovery Approach [NeurIPS 2023]
- Hierarchical Vector Quantized Transformer for Multi-class Unsupervised Anomaly Detection [NeurIPS 2023][code]
- ReContrast: Domain-Specific Anomaly Detection via Contrastive Reconstruction [NeurIPS 2023] [code]

ICML 2023

- Shape-Guided Dual-Memory Learning for 3D Anomaly Detection [ICML 2023]
- Fascinating Supervisory Signals and Where to Find Them: Deep Anomaly Detection with Scale Learning [ICML 2023]

ACM MM 2023

- EasyNet: An Easy Network for 3D Industrial Anomaly Detection [ACM MM 2023]

ICCV 2023

- Remembering Normality: Memory-guided Knowledge Distillation for Unsupervised Anomaly Detection [ICCV 2023]
- Unsupervised Surface Anomaly Detection with Diffusion Probabilistic Model [ICCV 2023]
- PNI: Industrial Anomaly Detection using Position and Neighborhood Information [ICCV 2023] [code]
- Anomaly Detection using Score-based Perturbation Resilience [ICCV 2023]
- Template-guided Hierarchical Feature Restoration for Anomaly Detection [ICCV 2023]
- Focus the Discrepancy: Intra- and Inter-Correlation Learning for Image Anomaly Detection [ICCV 2023][code]
- Anomaly Detection under Distribution Shift [ICCV 2023][code]
- FastRecon: Few-shot Industrial Anomaly Detection via Fast Feature Reconstruction [ICCV 2023] [code comming soon]
- Inter-Realization Channels: Unsupervised Anomaly Detection Beyond One-Class Classification [ICCV 2023][code]
- Removing Anomalies as Noises for Industrial Defect Localization [ICCV 2023]

LLM related

- Myriad: Large Multimodal Model by Applying Vision Experts for Industrial Anomaly Detection [2023][code]
- AnomalyGPT: Detecting Industrial Anomalies using Large Vision-Language Models [AAAI 2024] [code][project page]
- The Dawn of LMMs: Preliminary Explorations with GPT-4V(ision) [2023 Section 9.2]
- Towards Generic Anomaly Detection and Understanding: Large-scale Visual-linguistic Model (GPT-4V) Takes the Lead [2023][code]
- Exploring Grounding Potential of VQA-oriented GPT-4V for Zero-shot Anomaly Detection [2023]

[code]

- Customizing Visual-Language Foundation Models for Multi-modal Anomaly Detection and Reasoning [2024]

CVPR 2023

- CVPR 2023 Tutorial on "Recent Advances in Anomaly Detection" [CVPR Workshop 2023(mainly on video anomaly detection)][video]
- Workshop on Vision-Based Industrial Inspection [CVPR Workshop paper list 2023]
- Visual Anomaly and Novelty Detection [CVPR Workshop paper list 2023]
- Revisiting Reverse Distillation for Anomaly Detection [CVPR 2023] [code]
- OmniAL A unifiled CNN framework for unsupervised anomaly localization [CVPR 2023]
- Explicit Boundary Guided Semi-Push-Pull Contrastive Learning for Supervised Anomaly Detection [CVPR 2023][code]
- DeSTSeg: Segmentation Guided Denoising Student-Teacher for Anomaly Detection [CVPR 2023] [code]
- Diversity-Measurable Anomaly Detection [CVPR 2023]
- WinCLIP: Zero-/Few-Shot Anomaly Classification and Segmentation [CVPR 2023]
- SimpleNet: A Simple Network for Image Anomaly Detection and Localization [CVPR 2023][code]
- PyramidFlow: High-Resolution Defect Contrastive Localization using Pyramid Normalizing Flow [CVPR 2023][code]
- Multimodal Industrial Anomaly Detection via Hybrid Fusion [CVPR 2023][code]
- Prototypical Residual Networks for Anomaly Detection and Localization [CVPR 2023][code]
- SQUID: Deep Feature In-Painting for Unsupervised Anomaly Detection [CVPR 2023]
- APRIL-GAN: A Zero-/Few-Shot Anomaly Classification and Segmentation Method for CVPR 2023 VAND Workshop Challenge Tracks 1&2: 1st Place on Zero-shot AD and 4th Place on Few-shot AD [CVPR 2023 VAND Workshop Challenge]

SAM segment anything

- Segment Anything Is Not Always Perfect: An Investigation of SAM on Different Real-world Applications [2023 SAM tech report]
- SAM Struggles in Concealed Scenes -- Empirical Study on "Segment Anything" [2023 SAM tech report]
- Segment Any Anomaly without Training via Hybrid Prompt Regularization [2023] [code]

- Application of Segment Anything Model for Civil Infrastructure Defect Assessment [2023 SAM tech report]
- Segment Anything in Defect Detection [2023]
- Unsupervised Continual Anomaly Detection with Contrastively-learned Prompt [AAAI 2024][code]
- ClipSAM: CLIP and SAM Collaboration for Zero-Shot Anomaly Segmentation [2023]
- A SAM-guided Two-stream Lightweight Model for Anomaly Detection [2024]

ICLR 2023

- Pushing the Limits of Fewshot Anomaly Detection in Industry Vision: Graphcore [ICLR 2023]
- RGI: robust GAN-inversion for mask-free image inpainting and unsupervised pixel-wise anomaly detection [ICLR 2023]

Others

- Self-supervised Context Learning for Visual Inspection of Industrial Defects [2023][code]
- CLIP-AD: A Language-Guided Staged Dual-Path Model for Zero-shot Anomaly Detection [2023]
- Self-Tuning Self-Supervised Anomaly Detection [2023]
- Defect Spectrum: A Granular Look of Large-Scale Defect Datasets with Rich Semantics [2023] [data]
- Anomaly Heterogeneity Learning for Open-set Supervised Anomaly Detection [2023][code]
- Model Selection of Anomaly Detectors in the Absence of Labeled Validation Data [2023]
- A Discrepancy Aware Framework for Robust Anomaly Detection [2023][code]
- The Dawn of LMMs: Preliminary Explorations with GPT-4V(ision) [2023 Section 9.2]
- Global Context Aggregation Network for Lightweight Saliency Detection of Surface Defects [2023]
- Decision Fusion Network with Perception Fine-tuning for Defect Classification [2023]
- FAIR: Frequency-aware Image Restoration for Industrial Visual Anomaly Detection [2023][code]
- AnoVL: Adapting Vision-Language Models for Unified Zero-shot Anomaly Localization [2023] [code]
- End-to-End Augmentation Hyperparameter Tuning for Self-Supervised Anomaly Detection [2023]
- CVPR 1st workshop on Vision-based InduStrial InspectiON [CVPR 2023 Workshop] [data link]
- Multilevel Saliency-Guided Self-Supervised Learning for Image Anomaly Detection [2023]
- How Low Can You Go? Surfacing Prototypical In-Distribution Samples for Unsupervised Anomaly Detection [Dataset Distillation][2023]

- Exploring Plain ViT Reconstruction for Multi-class Unsupervised Anomaly Detection [2023]
- AUPIMO: Redefining Visual Anomaly Detection Benchmarks with High Speed and Low Tolerance [2024]
- Model Selection of Zero-shot Anomaly Detectors in the Absence of Labeled Validation Data [2024]
- PUAD: Frustratingly Simple Method for Robust Anomaly Detection [2024]
- COFT-AD: COntrastive Fine-Tuning for Few-Shot Anomaly Detection [TIP2024]
- PointCore: Efficient Unsupervised Point Cloud Anomaly Detector Using Local-Global Features [2024]
- Learning Unified Reference Representation for Unsupervised Multi-class Anomaly Detection [2024]

Medical (related)

- Towards Universal Unsupervised Anomaly Detection in Medical Imaging [2024]
- MAEDiff: Masked Autoencoder-enhanced Diffusion Models for Unsupervised Anomaly Detection in Brain Images [2024]
- BMAD: Benchmarks for Medical Anomaly Detection [2023]
- Unsupervised Pathology Detection: A Deep Dive Into the State of the Art [2023]
- Adapting Visual-Language Models for Generalizable Anomaly Detection in Medical Images [CVPR 2024]