

Smart Eye Analytics: Intelligent Video/Image Analytics for Visual Inspection & Detection

This cutting-edge solution combines few-shot learning, vision-language models (VLM), multimodal fusion, and edge-cloud synergy to deliver a robust visual analytics system tailored for smart manufacturing, infrastructure inspection, and operational safety. The system demonstrates exceptional adaptability to complex environments and offers unparalleled robustness. It excels in precision detection across diverse applications, including automotive assembly, AOI surface inspection, and structural defects monitoring, while ensuring compliance with the standard operating procedures(SOPs).

Industry Challenges

- **Environmental Complexity:** Issues related to lighting and viewing angles
- **High Deployment Cost:** Challenges posed by equipment diversity, data labelling, and system migration
- **Low Labour Efficiency:** Manual processes remain slow and costly

Major Benefits

- Multimodal fusion and integrated AI resolve visual environmental challenges
- Leveraging few-shot learning and VLM, solutions rapidly adapt to new scenarios
- Automated systems reduce reliance on high-cost manual labour

Application Areas

- **Automotive & Electronics:** Precise detection of assembly defects and AOI surface issues.
- **Infrastructure:** Detection of tunnel cracks and pipeline corrosion
- **Smart Construction:** Monitoring PPE compliance and identifying structural anomalies
- **Operational Oversight:** Analysing SOP compliance and behaviours in smart manufacturing and related industries

Collaborator(s)

Automotive and electronics manufacturers



This solution offering accurate object detection and inspection in videos recorded under low light conditions and at variable vehicle speeds

