CTI Resources
DIGITIZED, UNIFIED, OPTIMIZED

INDUSTRIAL AI VISION INSPECTION SYSTEM

Real-Time, AI-Driven Precision for Defect-Free Manufacturing

AI Vision That Elevates Quality, Precision & Throughout

Modern production demands accuracy at scale. Human-based visual checks introduce fatigue, inconsistency, and high rework costs.

Our **Industrial AI Vision Inspection System** delivers:

- **24/7** Non-stop 24/7 autonomous inspection
- Instant defect detection with real-time alerting
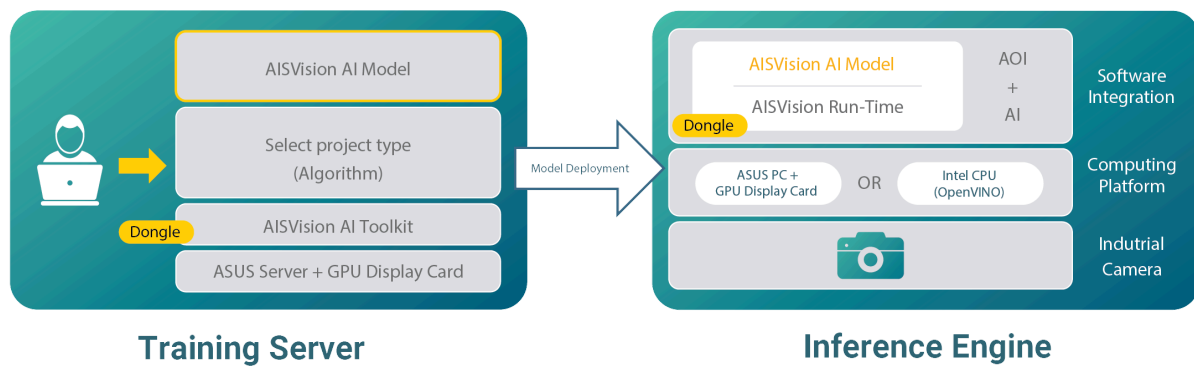- Standardized quality inspection across shifts
- Scalable deployment across any production line

This results in higher yield, lower waste, and stable output quality.

Benefit	Description
Flexible Deployment Across Any Production Line	Easily integrates with conveyors, machine cells & precision fixtures
Consistent, AI-Driven Accuracy Every Time	Eliminates subjectivity — same quality across every shift
Instant Defect Detection with Real-Time Alerts	Detect, classify, and respond to anomalies immediately
Lower Scrap, Rework & Quality Losses	Reduce production defects before they escalate
24/7 Autonomous Operation — Zero Fatigue	Continuous performance — no downtime or supervision required
Stable & Predictable Quality, Every Shift	Ensures reliable throughput & customer confidence

System Diagram - How AISVision works?

Training Server

- AISVision AI Model
- Select project type (Algorithm)
- Dongle — AISVision AI Toolkit
- ASUS Server + GPU Display Card

Model Deployment →

Inference Engine

- AISVision AI Model
- AISVision Run-Time
- Dongle
- AOI + AI — Software Integration
- ASUS PC + GPU Display Card OR Intel CPU (OpenVINO) — Computing Platform
- Indutrial Camera

System Capabilities

Supported Inspection Types:

Surface Defects (Cracks, Burrs, Scratches)

Dimensional Measurement & Tolerance Checking

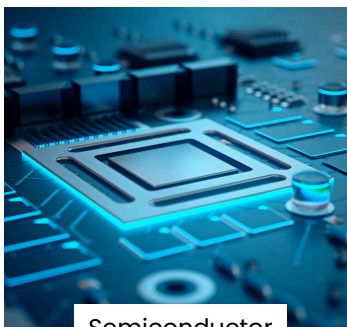Component Orientation & Presence Inspection
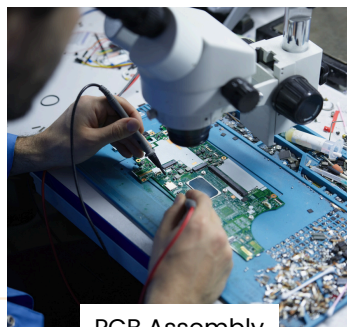

PCB Quality & Solder Joint Defect Detection

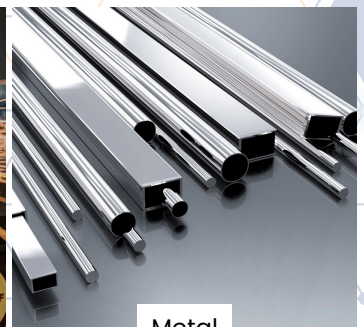Color, Pattern, & Label Verification

Supported Industries:

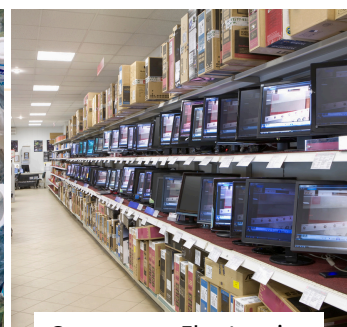Semiconductor

PCB Assembly

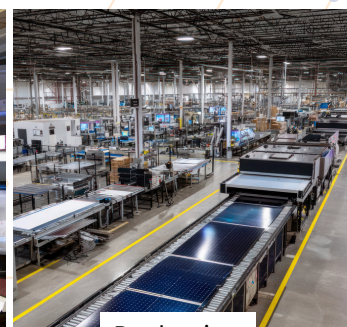Precision Machining

Metal

Plastic

Consumer Electronics

Packaging

Automotive

The AI Model Training & Runtime Engine Behind CTI's Vision System

AISVision is a **zero-code / low-code** AI vision toolkit that enables fast training and deployment of inspection models — without requiring deep AI expertise.

Why It Matters

Your QC team can **train and improve inspection models in-house,** reducing reliance on external data scientists.

Key Features

- **Zero-code AI Training in 4 steps**: Select > Label > Train > Verify
- **Supports Multiple AI Methods:**
  - Classification
  - Object Detection
  - Semantic Segmentation
  - Anomaly Detection
- **Dual Inference Architecture:**
  - NVIDIA® GPU or Intel® OpenVINO performance optimization
- **Integrated Labeling Tools:** Rectangle, polygon, ellipse & smart masks
- **Strong API Support:** C, C++, C# for software integration

Deployment Flow

1. Train AI model on GPU server (AISVision AI Toolkit)
2. Deploy to production inspection PC (Run-Time Engine)
3. Connect industrial camera + production line
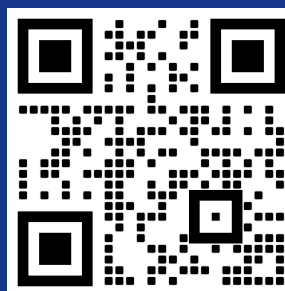4. Monitor, tune & improve model performance continuously

We provide full turnkey delivery, including:

Service	Scope
Site Study & Process Analysis	Identify inspection points & capture image conditions
Fixture & Illumination Engineering	Design stable, repeatable vision conditions
AI Model Training & Optimization	Develop & validate accurate defect classification models
System Installation & Commissioning	On-site deployment with operator workflow integration
Ongoing AI Model Improvement Support	Continuous quality tuning & enhancement

Start Your Journey to AI-Driven Quality Assurance

Speak with our solutions team to schedule:
- *On-site assessment*
- *Sample testing & pilot evaluation*
- *Live demonstration*

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