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AI Quality Inspection

ARE THESE CHALLENGES AFFECTING YOUR MANUFACTURING OPERATIONS?

Are you facing excessive material waste that is driving up your production costs?

Are hidden defects slipping through, causing costly rework or potential recalls?

Do you find it challenging to balance quality standards with tight deadlines & limited resources?

HIDDEN COST OF HUMAN ERROR IN MANUFACTURING

In today's fast-paced manufacturing environment, traditional manual inspection struggles to keep pace with scaling production and rising quality demands. Errors, inefficiencies, and waste threaten profitability, making automation not just an upgrade, but a necessity for precision, efficiency, and sustainable growth.

How to sustainably scale quality inspection to reduce costs & maximize quality?

What is AI Quality Inspection?

ENHANCING PRECISION & EFFICIENCY WITH AI-POWERED QUALITY CONTROL

AI quality inspection uses **artificial intelligence to detect defects, inconsistencies, and anomalies in products** and materials.

Unlike manual inspections, which can be slow and error-prone, AI analyses images, videos, or sensor data in real time to **quickly and accurately identify issues**. This improves efficiency, reduces waste, and ensures consistent quality across various industries.

KEY BENEFITS

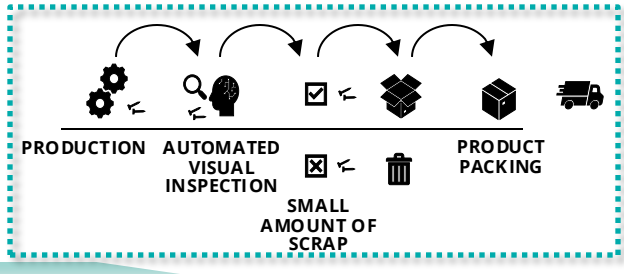
- **Faster inspections & defect detection**
- **Higher accuracy and consistency**
- **Reduced human error**
- **Lower operational costs**
- **Improved product quality & reliability**
- **Scalability for high-volume production**

MANUAL INSPECTION

Relies on human labor for defect detection, offering flexibility and lower initial costs but is time-consuming, prone to errors, and difficult to scale efficiently.

AUTOMATED VISUAL INSPECTION

Leverages AI and sensor-based systems for fast, accurate, and scalable defect detection with minimal human intervention.



SEMI-AUTOMATED QUALITY INSPECTION

Combines AI-driven defect detection with human oversight to speed up quality control, reduce manual labor, and improve scalability, but requires training, effective data management, and may lead to higher operational costs.

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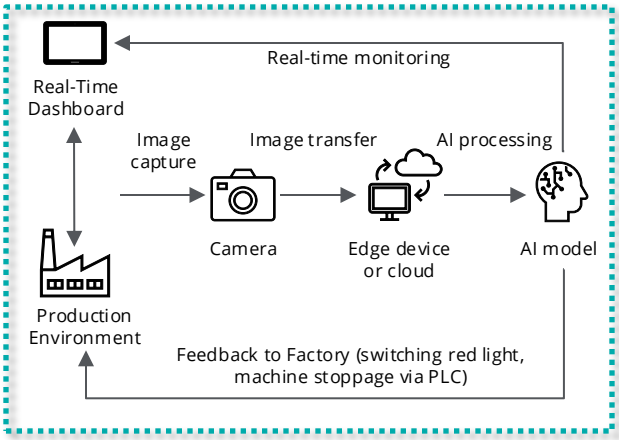
TAILORED EXCELLENCE, FROM START TO SCALE

We deliver an end-to-end solution: we **ASSESS** your current systems & vision inspection capabilities, **IMPLEMENT** cutting-edge solutions designed for seamless scaling across all plants and markets, and establish a fully optimized **OPERATE** phase to drive long-term efficiency and deliver sustainable value.

TAILORED VISUAL INSPECTION SOLUTION



BENEFITS OF DELOITTE APPROACH

- **Advanced Defect Detection:** Uses sophisticated AI models for precise defect and background segmentation
- **Seamless Integration:** Easily integrates with existing infrastructure
- **Cloud integration (AWS, Azure, GCP):** Supports cloud-only or hybrid (edge device) solutions
- **High Accuracy:** Superior performance with continuous model retraining
- **Scalable:** Meets increasing production demands
- **Customizable & Flexible:** Adapts to various industry needs and environments (custom pre-processing to adapt to adverse conditions in production environment)

LATEST TRENDS EXTENSIONS

1. **Enhanced capabilities with GenAI:** Leveraging LLMs for advanced text processing to detect even the most complex label issues in any language.
2. **Predictive Maintenance:** Forecasting future equipment failures using historical data, allowing for scheduled maintenance and minimizing costly downtime.
3. **Anomaly Detection and Alert System:** Continuously monitoring data to identify and alert on irregular patterns, enabling proactive preventive actions

CONTACTS

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