

04 // Defects detection Automotive

TASKS

Image analysis
Defects detection
Segmentation
Classification
Measurement
Annotation
Computer vision

INDUSTRY

Manufacturing
Automotive

TECHNOLOGIES

AI-go Studio
AI-go Runtime
Invariant.ai®

REQUEST

Automatically detect various types and sizes of surface defects on a small metal part (a component of motorcycle motors) and measure them when found.

STARTING POINT

Quality control was being carried out through traditional computer vision systems that were inadequate at managing the variability of the analyzed components. In fact, the parts inspected were often dirty or presented hard-to-manage stains (or other markings) that raised the need for a complete inspections by specialized operators. This activity is absolutely critical both because of both the time required and the ergonomics implied for the operator, who was performing the task with the help of magnification systems (indispensable to finding such minute defects.).

RESULTS

Maintaining the same quality assurance,
but reducing false rejects.

Increased OEE

**Fast return of
investment**

The system testing phase was performed double-checking 10.000 pieces previously marked as scrap by operators. The AI system was able to detect 8.000 false wrong.
The sale of those pieces paid for the entire project.

Better detectability of anomalies - even in suboptimal visual conditions - with a significant decrease of components **misidentified as scrap**. There were no cases in which the system missed large, glaring defects.

**Most reliable
output**

**Data-driven
approach**

To keep track of defects in order to review the process and/or the supply chain for continuous improvement. Operator-independent approach.

Increased customer satisfaction with improved ability to make on-time deliveries and to improve quality

Improved Quality