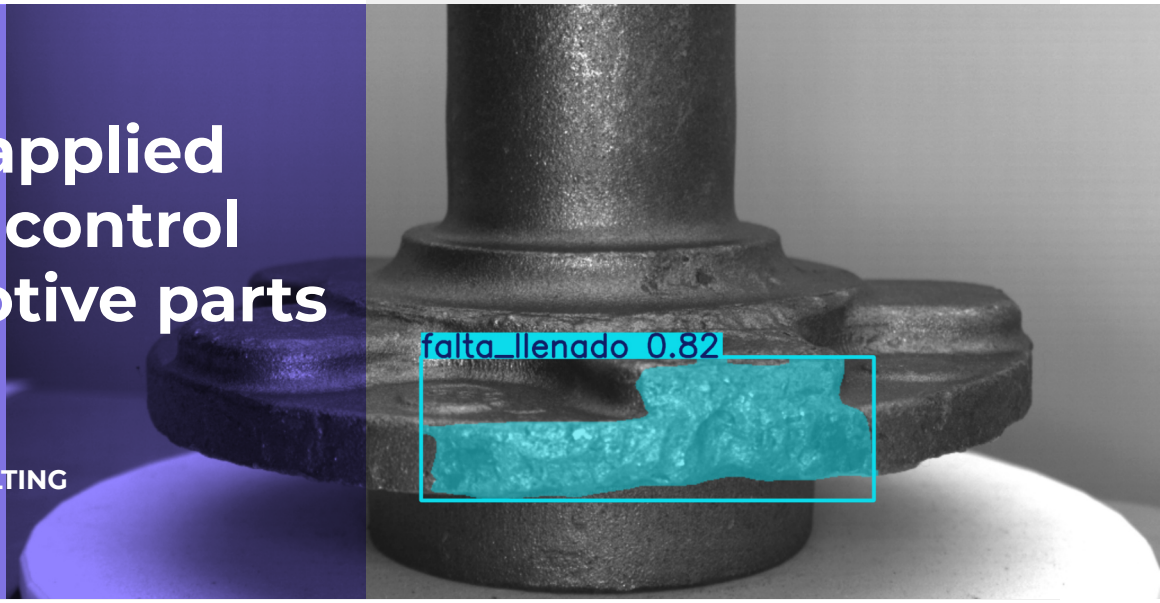
pixelabs

www.pixelabs-ai.com

Visual AI applied to quality control of automotive parts



ELGAR WORKS CONSULTING

1. Overview

ElgarWorks Consulting has integrated Pixelabs' Visual AI into its inspection and quality control system to fully automate the inspection of automotive parts, enabling the detection of defects such as cracks, metal burrs, or marks with high precision. The objective is to turn traditional inspection processes into automated, objective, and real-time systems. To achieve this, it acts as a technological partner to industrial plants, helping to detect problems at early stages and implementing solutions that optimize production from within.

2. Challenges

Automotive parts inspection continues to face limitations stemming from manual processes and traditional systems, which make it difficult to ensure consistent quality and scale verification capacity in demanding production environments. Key challenges include:

- Reliance on human factors, which introduces variability

and the risk of error in inspection.
- Lack of standardization, with criteria varying by operator or shift.
- Difficulty scaling up, as increasing inspection involves higher costs and resources.
- Limited traceability, with little access to real-time data per part.
- Delays in decision-making, which affect plant efficiency.

3. Solution

To address these challenges, ElgarWorks integrates the machine vision technology developed by Pixelabs into its industrial quality control system. At the heart of the solution is our AI Engine, along with a system of cameras mounted on turntables that allows each part to be inspected from multiple angles using high-precision images. Using these images, custom algorithms analyze every detail and can identify defects such as cracks, burrs, or marks, even in cases where conventional machine vision systems fall short.

4. Results

The set up of our product has completely transformed the inspection process, yielding highly significant results by eliminating subjectivity in quality control, facilitating the early detection of defects on the production line, and reducing the risk of errors and rework.

<3 seconds
to inspect a part

+10.000 parts
inspected daily