

AI Solutions for Automotive Parts Manufacturing

Artificial intelligence offers automotive parts manufacturers new ways to improve their manufacturing and help them meet their customers' challenging quality requirements. AI-based systems can optimize defect detection and categorization, prevent unplanned line downtimes, allow improved assessments of the remaining useful life of equipment and with that reduce cost, shorten timelines, and increase customer satisfaction.

Working with Accella AI implementation of AI solutions does not have to be long, costly and complicated but happens in a stepwise, streamlined process:

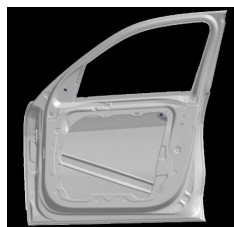
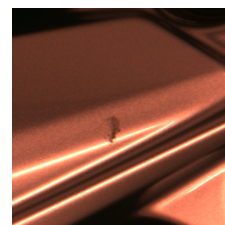
- Proof-of-concept phase that quickly establishes the value of AI
- Deployment of the solution with in-house resources
- Roll-out to additional lines and plants.

This approach makes the broad adoption of AI-based solutions feasible for all automotive parts manufacturers.

Here are some use cases we implemented at tier 1 automotive suppliers.

QC USE CASE: DETECTION OF DEFECTS ON CLASS A SURFACES

NEED	Reliable, affordable way to detect defects >0.5 mm in 7 secs
CHALLENGE	Tiny defects on highly polished 3D surfaces
SOLUTION	Neural network, multi-camera camera and lighting system
OUTCOME	Avoids shipping defective products to customer, lowers labor cost



QC USE CASE: MONITOR WELDING ON DOORS

NEED	Reliable way to detect and flag welding irregularities
CHALLENGE	Make rework vs. scrap decision based on subtle defect differences
SOLUTION	Neural network on top of legacy camera system
OUTCOME	Recommends rework vs scrap, reduces labor cost

PM USE CASE: RIVET GUN MAINTENANCE

NEED	Avoid unplanned breakdown of rivet gun robots
CHALLENGE	Improve health status monitoring while reducing maintenance cost
SOLUTION	Neural network determines remaining useful life
OUTCOME	Reduced maintenance cost plus reduction of line downtime



Why Accella AI

Our solutions are custom-built for manufacturers:

- We create tools by engineers for engineers and operators – no data science expertise required
- We build for the shopfloor, e.g. full integration with key manufacturing equipment such as PLCs
- Our solutions are designed for easy global deployment in manufacturing plants
- Going beyond point solutions we develop stacked AI models that represent entire process chains