



# Use Case

## Quality Control - WNR Welding Solution

**Customer** Tier 1 Automotive Part Manufacturer

**Need** Develop a reliable way to detect and flag welding irregularities on car doors manufactured for a German sports car maker.

**Challenge** The legacy system generates an unacceptably high number of false positives in one of three defect categories. The system correctly classifies pinholes and splatter, but incorrectly identifies edge-offset defects. The main challenge was to improve the overall accuracy of the system by reducing false positives in edge-offset analysis to reduce costly rework.

**Solution** We deployed an AI-model instead of a conventional machine vision program to analyze the image scans generated by the legacy camera system (WNR system).

**Process** We trained the AI-model by showing it samples of welding seam defects. The model learned to differentiate between correct and incorrect edge-offsets. We improved the model performance by deploying the system into production where an operator can review and correct any mistakes made by the AI-model and retrain the model with the new annotated images on a periodic basis.

Over a period of a few months this process will improve the performance of the system until up to 70% of the false positives can be eliminated.

**Outcome** With a reduced number of false positives the AI-enabled solution avoids unnecessary rework. The solution also recommends rework vs. scrap for any flagged door.

### Contact Us

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