dataprophet
machine learning specialists

OMNI VISION CASE STUDY

SITUATION

Our client, the largest foundry in Southern Africa, produces engine blocks. The raw material undergoes a series of unit processes concluding in a final inspection of the end product, an engine block.

This visual inspection was undertaken by a team of operators who would note which engine blocks contained a defect. As a human process, it lacked consistency and defective blocks were occasionally shipped to the end client resulting in heavy penalties and knock on effects for their production facility.

Furthermore, the inspection process was designed as a quality control gate to ensure defective blocks were captured prior to shipping - the operators only captured the primary defect. Subsequent defects on the block were not captured and neither were their features.

PROBLEM

Whilst conducting a Manufacturing 4.0 initiative to optimise the production line, DataProphet came to the realisation that more granular data including the number, type and causes of defects would be required to identify processes for improvement.

Unfortunately due to the design and implementation of the quality control gate, limited information was available upon the captured defects whilst the secondary and tertiary defects were not captured at all.

Furthermore, a harsh plant environment and the repetitive nature of the task was not conducive to a manual process and therefore the decision was made to