



CASE STUDY

Capturing 10K+ safety non-compliance instances by installing a **video monitoring solution** at fabrication yard

Client overview

The client is one of the largest construction companies in Asia. They wanted a digital solution that could deliver real-time non-compliance insights on their fabrication yard and reduce response time to remedy non-compliance.



Challenge

The most critical challenge faced by the businesses was the detection of non-compliance of safety measures at the construction site by employees, like the absence of wearing personal protection equipment (PPE), e.g., safety shoes, jacket and safety helmet, absence of masks, crowding (not maintaining social distancing). Moreover, the response time to correct this non-compliance was also long and not desirable because the detection process was not robust based on the existing setup of CCTV cameras. Monitoring of video surveillance footage, which is a very labor-intensive exercise, involved significant manpower costs. Human error was the other thing that the client had to worry about. Also, scaling up was an issue for large projects as the volume of video footage generated was huge.



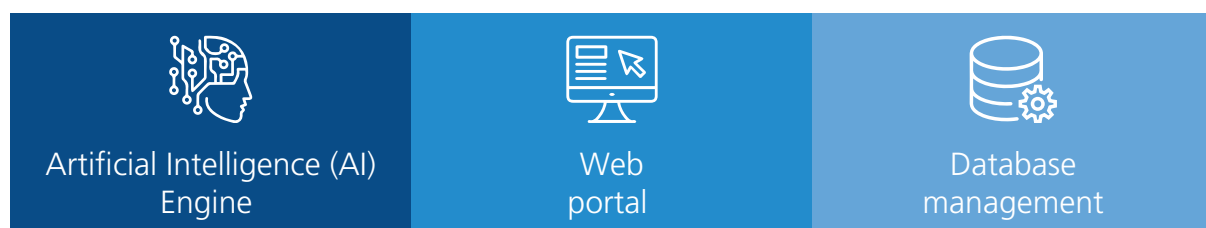
LTIMindtree Solution

To resolve the client's challenges, we came up with the solution to capture data from different components of a machine, thereby creating a database that will be used as a reference for data analysis. Once the data is captured, we made a comparison of data captured in real-time with the historical data. We identify the category in which this data falls (normal range, threshold, danger zone), and based on that, our AI models triggers a response which is then visible through our web portal. This process is repeated several times, where the accuracy increases each time a trigger is created. Our AI engine can also perform conditioning monitoring and predictive maintenance based on the data models that we have created. Since our solution is modular in nature, we can also customize it as per the customers' requirement. That helps us in adding new non-compliance detection models easily.



The salient features of the solution are as below:

- Alchemy solution components:



- Modular architecture of solution enables adding new non-compliance detection models easily.

As a result of our solution, we installed 45+ cameras at the fabrication yard to capture 10K+ instances of non-compliances.

Benefits

The business impact was positive and instant. The near real-time detection of non-compliances enabled quick response. Since the solution was compatible with all OEM (Original Equipment Manufacturer) cameras that are ONVIF (Open Network Video Interface Forum) compliant, hence compatibility was not an issue. The solution helped expand visibility by supporting simultaneous multi-zone analysis of incoming video feeds. The solution was also scalable since the modular solution architecture enabled both vertical and horizontal scalability. The entire process became seamless since the concerned authority was automatically notified via email within minutes of any non-compliance occurrence.



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