






EXECUTIVE SUMMARY

Real-time AI-powered safety compliance monitoring system for manufacturing environments. Utilizing computer vision and industrial CCTV infrastructure to automatically detect **helmet and safety vest compliance**, ensuring worker safety through continuous automated monitoring and instant violation alerts.

SOLUTION ARCHITECTURE

 <h4>Video Input</h4> <p>Live CCTV streaming from industrial camera infrastructure</p> <ul style="list-style-type: none"> Real-time feeds Multi-camera support Industrial-grade 	 <h4>AI Processing</h4> <p>Custom CV model integrated with Frigate NVR</p> <ul style="list-style-type: none"> Bounding box detection Helmet & vest recognition Real-time inference 	 <h4>Alert System</h4> <p>Instant notifications for compliance violations</p> <ul style="list-style-type: none"> Real-time alerts Compliance tracking Visual indicators
---	--	---

DETECTION SHOWCASE



Helmet Detection

Real-time identification with bounding box visualization







Full PPE Compliance

Automated validation of both hard hat and safety vest

TECHNICAL STACK

Video Management	Frigate NVR
AI Framework	Custom CV Model
Detection Method	Bounding Box
Input Source	Industrial CCTV
Processing Type	Real-time Stream
Industry Vertical	Manufacturing

KEY CAPABILITIES

- 
Multi-Object Detection
 Simultaneous helmet and vest identification
- 
Live Stream Processing
 Continuous monitoring with minimal latency
- 
Bounding Box Visualization
 Clear visual indicators for detected objects
- 
Compliance Alerts
 Instant violation notifications and tracking

2 Weeks
PROJECT DURATION

24/7
MONITORING COVERAGE

Real-time
DETECTION SPEED

MFG
INDUSTRY VERTICAL