

PPE Detection - Inhouse Developed AI & ML Solution

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Background

Wearing proper Personal Protective Equipment (PPE) is mandatory when entering industrial areas such as the shop floor, crane gantry zones, hot metal areas, stair cases, electrical rooms, etc.

To ensure compliance with PPE regulations, we are proposing a vision-based PPE detection system that utilizes existing CCTV camera feeds installed in these critical areas. This system will automatically detect whether a person is wearing the required PPE and if it is being worn correctly. In case of non-compliance or improper usage, the system will trigger alerts to ensure safety protocols are followed effectively.



Vision-based, in-house developed PPE detection system reduces human error and works reliably in harsh environments:

We have developed an in-house, vision-based, AI and ML solution that utilizes a deep learning model to accurately detect PPE.

PPE detection of the following safety gears:

- Safety Helmet.
- Safety Jacket.
- Safety Shoes.
- Safety Goggles
- Safety Gloves.

(Picture from Inhouse developed project -PPE Detection).

Key Features and Benefits

- **AI-Powered Object:** Uses computer vision to detect PPEs near the gantry crane.
- **Automated Alerts & Warnings:** Generates real-time alerts for missing PPE.
- **Works in Harsh Environments** – Functions effectively in heat-prone, dusty, and corrosive industrial settings.
- **Integration with Existing Systems:** Seamlessly integrates with control systems.
- **Operational Efficiency:** Reduces manual intervention, saves time.

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