

# See Risks Sooner. Enforce Safety Smarter.

## AI-Enabled Computer Vision

### Overview

ProHawk AI elevates workplace safety by delivering patented AI-enabled computer vision pixel-level restoration powered by NVIDIA® GPU accelerated computing and CUDA® parallel processing. In fast-paced manufacturing settings where lighting, glare, shadows, or airborne particles degrade video quality, ProHawk AI instantly restores clarity—enabling precise detection of PPE violations, restricted zone breaches, and unsafe actions as they happen.

By leveraging the performance of existing camera infrastructure, ProHawk AI empowers manufacturers to continuously monitor compliance, enforce safety protocols more effectively, and respond to potential hazards with speed and confidence—without the cost, delay, or disruption of replacing camera systems. The result: safer work environments, fewer incidents, reduced liability exposure, and a stronger, data-driven safety culture across the facility.

### Key Challenges

#### Poor Visibility in Work Zones

Glare, shadows, low light, or airborne particles obscure video—limiting non-compliance, unsafe actions detection.

#### PPE & Safety Zone Violations

Workers may enter hazardous areas without helmets, vests, or eye protection—creating preventable safety risks.

#### Limited AI Detection Accuracy

Low-quality video reduces the effectiveness of AI models trained to detect safety violations or near misses.

#### Manual Monitoring Limitations

Safety teams can't watch every area 24/7, and delayed visibility leads to reactive, not proactive, responses.

#### Cost of Camera Upgrades

Upgrading to higher-spec or thermal cameras is expensive, especially across large or complex facilities.

### Key Benefits and Outcomes

ProHawk AI helps manufacturers prevent injuries, reduce liability, and enforce safety compliance through real-time, AI-enabled visual monitoring—without the need for costly infrastructure upgrades. By restoring clarity pixel-by-pixel on existing cameras, it ensures accurate detection of PPE violations, restricted zone breaches, and hazards even in low light, glare, or dusty environments. This improved visibility enhances AI model performance, reduces monitoring gaps, and enables faster, proactive safety response. The result: fewer incidents, lower insurance and compliance costs, and ROI typically within 12 months—driven by safer operations and maximized value from current video systems.

#### • Faster Hazard Detection

Sharper video enables instant detection of unsafe actions and compliance breaches.

#### • Improved Worker Protection

Reduces risk of injury by enabling proactive interventions before accidents occur.

#### • Higher AI Model Accuracy

Delivers clear input for AI models to accurately detect and track safety events.

#### • Cost Savings

Avoids expensive camera replacements while reducing incident-related downtime, insurance claims, and OSHA penalties.

#### • Stronger Safety Culture

Drives accountability through constant, visible safety monitoring.

# AI-Enabled Visual Monitoring for Safer, Smarter Manufacturing Operations

ProHawk AI’s worker safety solution restores degraded video in real time using patented pixel-level computer vision and NVIDIA GPU acceleration—delivering clear, reliable visibility even in glare, shadows, low light, or dusty industrial conditions. By improving existing camera performance, it boosts the accuracy of any NVIDIA DeepStream-supported model for detecting PPE violations, restricted zone breaches, and unsafe behaviors. As a pipeline platform, it integrates with control rooms, edge devices, and VMS platforms to help safety teams respond faster, enforce compliance, and prevent incidents—without costly infrastructure upgrades or disruption.



ProHawk AI transforms degraded or low-quality video streams, pixel-by-pixel, into clear, actionable footage in real time—enabling safety teams to detect PPE violations, restricted zone breaches, and unsafe behavior the moment they occur. Integrated with the NVIDIA Metropolis Vision AI stack, it delivers 3 millisecond latency and up to 30× faster video restoration, ensuring critical visibility even in glare, shadows, low light, or dust-heavy environments. ProHawk AI, powered by NVIDIA GPU accelerated computing, improves the performance of existing cameras without the need for costly upgrades—cutting hardware expenses by up to 60%. Manufacturers benefit from faster hazard detection, improved worker protection, better AI accuracy, and stronger safety compliance—driving safer operations.

Use Case	Result
PPE Compliance Monitoring	Detect missing hard hats, safety glasses, or reflective vests in designated areas.
Restricted Zone Enforcement	Monitor entrances or boundaries to hazardous zones like robotic arms, furnaces, or chemical areas for unauthorized access.
Slip, Trip & Fall Detection	Increase visual clarity to detect and document fall risks, unsafe movement, or obstructed walkways.
Behavioral Safety Analysis	Improve visibility for AI systems analyzing unsafe postures, procedures, or near misses.
Incident Review & Audit Support	Provide clear footage for investigations, root-cause analysis, and compliance audits.

Feature	Requirement
Compatible NVIDIA Hardware	NVIDIA Jetson Orin™ & NVIDIA RTX™ Pro – Blackwell, Ada Lovelace
Supported Input Formats	Image & Video Files, RTSP Camera Stream
Supported Operating Systems	MS Windows Server 2019/2022/2025 & Ubuntu 20.04/22.04

ProHawk AI provides manufacturers a new layer of safety intelligence by transforming video quality in real time. Accelerated by NVIDIA Jetson™ at the edge and scaling up to data center-class NVIDIA GPUs, it enables accurate detection of PPE violations and restricted zone breaches, refining worker protection, minimizing operational risk, and improving safety oversight—all without costly infrastructure changes. In a world where visibility drives safety, ProHawk AI ensures nothing is missed.

