

## TOP TIPS

# Using AI to Optimize Workers' Safety, Simply and Automatically

In recent years, a troubling trend has surfaced in workplace safety, revealing a concerning rise in severe injuries and fatalities among industrial workers across key sectors such as manufacturing, transportation, construction, logistics, and utilities.

It's a scary fact — according to the [U.S. Bureau of Labor Statistics](#), from 2021 to 2022, fatal work injuries in the United States have **increased by 5.7%**. This amounts to a fatal work injury rate of 3.7 fatalities per 100,000 full-time equivalent (FTE) workers, up from 3.6 per 100,000 FTE in 2021.

Several factors are contributing to this trend. High demand for productivity has put pressure on companies to meet these production targets and deadlines. Complex work within industrial operations often involves the operation of intricate machinery, and when paired with detailed systems and processes, increases the potential for accidents.

Additional factors that contribute to the growth of workplace injuries include changing work environments; rapid advances in technology (new machinery, equipment, and processes) that demand ever-evolving safety guidelines and solutions; and year-over-year employee turnover with a workforce that is often aging out and retiring, creating a need for ongoing safety training.

What can be done to address this alarming trend? On-the-job safety training can only do so much to educate workers on proper safety protocols. The following tips will guide you on new ways to improve your workers' safety, simply and automatically, assisted by Artificial Intelligence (AI).

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# 1

## Start with a change in safety mindset, from reactive to proactive.

Organizations need to shift to a more proactive approach to the safety and security of their workforce.

Most industrial environments are equipped with monitoring systems for their production and safety processes. These cameras and devices have traditionally been used as a reactive method to monitor and record data around accidents, and then that due diligence data is used to develop new safety protocols to be used in the future to prevent additional incidents from happening.

That doesn't have to be the case. In this age of technological progress, industries are advancing their production and safety protocols by embracing innovations like image processing algorithms, real-time data processing frameworks, and reusable computer vision models at an accelerated rate.

A prime example is the integration of [computer vision](#) technology to enhance worker safety. Computer vision systems can monitor and contextualize the workplace in real time, identifying potential hazards, obstructions, or unsafe behaviors. These systems allow organizations to shift from being reactive to proactive in understanding when these scenarios may exist, preventing serious accidents from occurring.

# 2

## Leverage and enhance the existing infrastructure with AI.

AI can add an additional layer of protection by leveraging current monitoring processes and pairing them with new and emerging technologies to create a safer work environment across all worksites. This will allow organizations to get started quickly to provide safety monitoring.

Start by leveraging existing sensors, cameras, and geofences (virtual perimeters) at each worksite to capture any unsafe behavior in real time. Then, add AI to create a layered, end-to-end solution to detect hazards and anomalies and create actionable alerts to warrant further action.



3

**Reconsider approaches to identifying risky behavior.**

Use deep learning models to write logic and rules to identify risky and unsafe behaviors, unbalanced body positions and postures in relation to moving equipment, and proximity issues when working around machinery. AI can be useful in identifying and determining what type of worker is engaged in possible risky behavior and the different permissions each person has depending on their role, all while protecting the Personally Identifiable Information (PII) of each individual and gatekeeping access to the data, including how it gets stored and how it is transmitted.

4

**Use the resulting data to create ongoing improvements in real time.**

Leverage the resulting data trove of information and actionable insights to create immediate improvements within the facility and enhance all safety processes.

This data is incredibly beneficial because it allows organizations to tailor their safety briefing and training protocol based on exactly what is occurring in their facilities. This allows for real-time analysis of incidents and the near-immediate addressing of proper technique and safety briefings to be customized to the immediate experience.

5

**Understand the many benefits of the swift identification and response to potential issues.**

- An **increase in employee retention.** Enhancing and improving workplace safety shows employees that their health and safety is the highest priority by enhancing worker safety and creating an environment where employees know they are the company's most valuable asset.
- The **reduction of reportable incidents** by enhancing overall security measures.
- The **reduction of insurance premiums.** Once the enhanced safety solution is in place, businesses can take advantage of the reduction in unsafe behaviors to negotiate lower insurance premiums.
- The **reduction in the number of non-reportable incidents** such as near misses or minor accidents where no injury was reported; however, these incidents still contribute to lost work time.
- Achieve a **reduction in equipment and maintenance costs** by 5% by focusing on unsafe behaviors that can lead to the improper use of equipment (such as in a manner not intended by the manufacturer, bypassing safety features like limit switches or automatic shut-offs, etc.).

**NEXT STEPS:**

**Get expert advice from leaders in the field who know how to revolutionize safety protocols.**

The **SAS® Worker Safety Solution** leverages SAS® Analytics for (IoT), using cameras, sensors, and geofencing to detect and mitigate unsafe behaviors within industrial environments, thereby proactively preventing their recurrence. Its proven ability to analyze safety gaps and opportunities, then generate a customized operational pilot built upon actionable insights, becomes the foundation used to configure solutions for the customer's unique environment. This thoughtful operationalization and complex, layered analytic approach truly sets SAS apart.

Let SAS be your trusted partner on your workplace safety journey. Learn more about the SAS Worker Safety Solution and receive a demo [here](#).

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