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# AI Monitoring for a safer workplace

Explore how AI and large vision models are transforming workplace safety.

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# Introduction

Do you have plans to implement AI in your workplace? If so, you're not alone. According to a study by Amazon Web Services, most companies and organisations (92%) plan to be using AI regularly by 2028.

One area of AI to consider is Computer Vision which invovles identifying and analysing scenes involving objects and people. This is what we call, AI Monitoring.

Rapid Global is at the forefront of AI. We have an experienced, dedicated Machine Learning team that has long developed AI features in-house, rather than relying on third-party software. Over the past 24 months, we have utilised AI to help enforce contractor compliance, streamline visitor management, strengthen site access and detecting safety issues.

In this guide, we will help you gain a better understanding of the technology, how it works, and its use cases. Read on to discover what's possible.

*This guide highlights existing and soon-to-be released features to help you plan your AI Monitoring journey with Rapid Global.*

# Redefining safety with AI Monitoring

In the past, CCTV in the workplace was primarily used to notify security teams of breaches that occurred after hours and aid with investigations. These traditional systems usually generate false alarms, are siloed to one use case only and lack contextual analytics.

With the integration of artificial intelligence, CCTV can now offer a much broader range of capabilities. Whether it's being alerted when specific objects - like safety gear- are being worn or not, or having an AI agent actively monitor your workplace and alert you to any safety concerns - like someone being too close to a forklift in motion-, AI Monitoring opens up a wide range of use cases and insights that were previously not possible.

With AI Monitoring you can:

- Detect potential safety hazards in real-time, such as slip and fall incidents or unauthorised access to restricted areas.

- Receive instant alerts when safety violations occur, allowing for immediate response and intervention.

- Access comprehensive reports and analytics on safety incidents and trends, enabling proactive decision-making and continuous improvement.

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# How it works

**Computer Vision**

Computer vision works by analysing and interpreting the contents of an image. This includes identifying people and objects within a frame collected from a kiosk or camera, and providing quick and detailed transcriptions of the visual information.

Computer vision models learn from being exposed to vast collections of images from diverse environments and scenarios, and figuring out patterns. For example, if a model is shown a lot of images of hard hats, it learns what makes a hard hat a hard hat - the shape, brim, yellow appearance and so on.

Once the model has learned, it can then look at new image and identify if a hard hat is present or not based on what it's learned.

Currently we have vision models for detecting PPE, mobile phones, cleaning equipment and forklifts, proximity detections and facial recognition. We are consistently adding new capabilities to our products to to keep workplaces efficient, safe, and secure, so we'd love to discuss your needs.
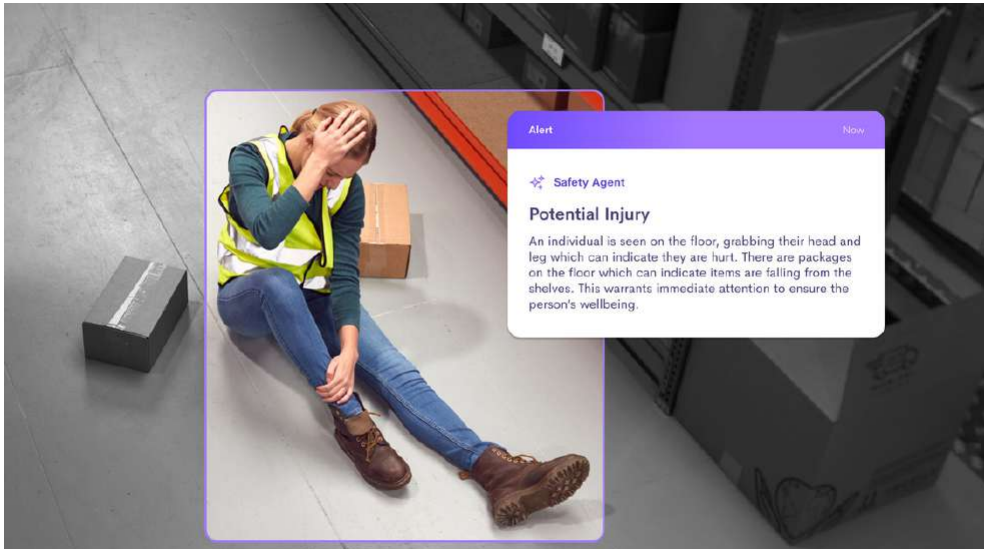
## Multimodal AI

Multimodal AI refers to artificial intelligence that can process and understand information from multiple sources, such as text, images, audio, and video.

This allows AI models to apply language reasoning skills to a wide range of images. In the example below, taken from our latest feature, Safety Agent Alarm, you can get notified for previously unseen safety issues such as someone seen lying on the ground hurt.

Additionally, you can mention site-specific requirements to the Safety Agent, such as the need to wear hi-vis vests at all times in the warehouse, so it can factor them in its operation.

# Setup

**1**

**Connect**

Connect AI Monitoring with your existing cameras.

**2**

**Select**

Define specific rules for different objects, locations, areas and groups of people.

**3**

Forklift
Worker
Worker

**Detect**

Let AI actively monitor your site, looking for issues and generating analytics.

**4**

**Alert**

Receive real-time alerts for any safety concerns or object related compliance issues.

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# How AI Monitoring can help businesses

AI Monitoring can provide significant value to companies across all sizes and industries, particularly in optimising safety, security and productivity.



### Enhancing safety

Frequently, on-site incidents can act as early indicators of more serious issues. With AI Monitoring you can identify these incidents and understand the trends. This empowers teams to be proactive in improving safety measures.

### Strengthening security

With AI Monitoring, security teams can be alerted for a range of potential issues with descriptive alerts that enable a swift response. Whether it's someone in a restricted area, someone climbing a perimeter fence or two people physically fighting.
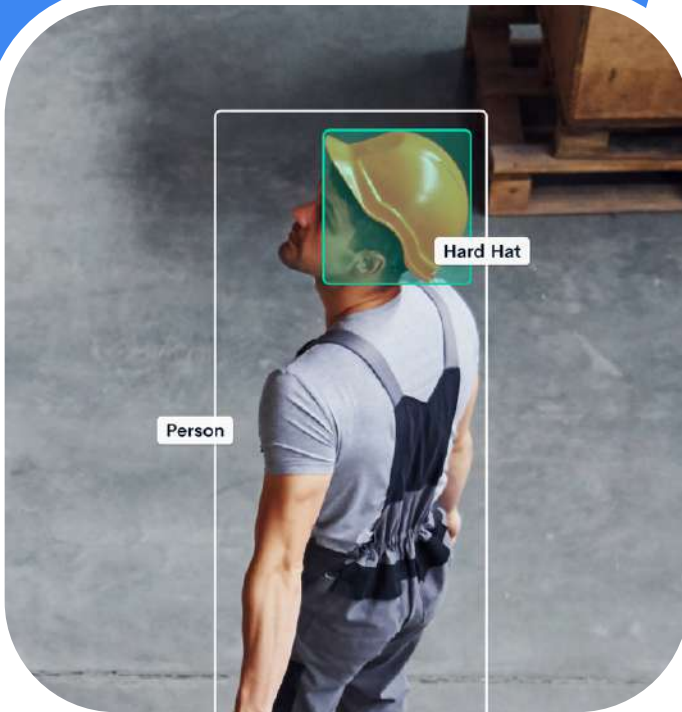
### Boosting productivity

Allowing AI to monitor a site and detect potential issues makes safety and security teams more productive. This allows individuals to focus on more meaningful tasks, reassured by the knowledge that if any concerns arise, the AI will promptly notify them.

# 6 ways to use AI Monitoring

**Missing PPE**
Receive alerts for missing hard hats or hi-vis vests

**1**

**Forklift proximity**
Identify near misses with people and forklifts

**2**

**Mobile phone use**
Restrict mobile phone use in certain zones

**3**

**4**
**Load restraints**
Have AI monitor vehicle load restraints

**5**
**Safety incidents**
Be aware of previously unseen safety incidents

**6**
**Cleaning work**
Ensure cleaners are fulfilling their obligations

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# Missing PPE

PPE plays an important role in workplace safety. Identify and receive alerts for missing hard hats or hi-vis vests.



You can use AI Monitoring to detect and send alerts for missing personal protective equipment (PPE) on-site.
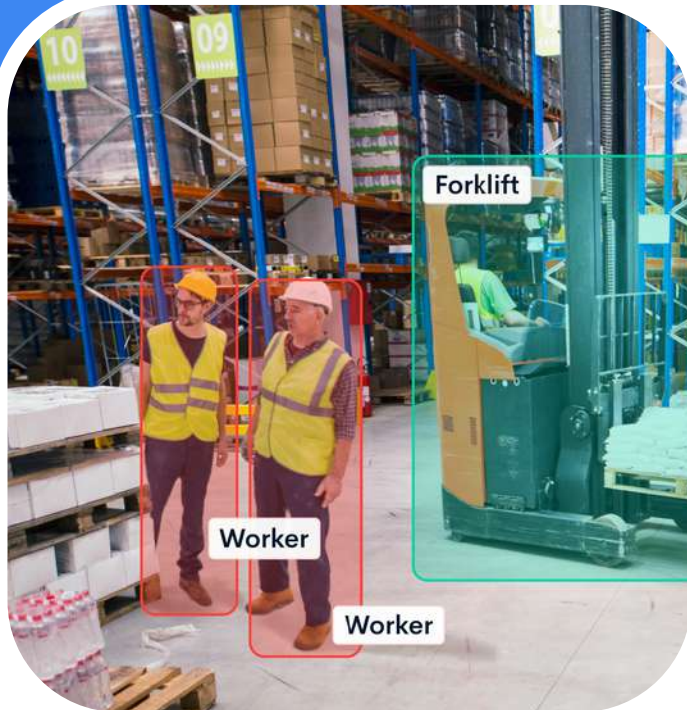
Whether it's hard hats or hi-vis vests, AI Monitoring can not only detect these items, but check if an individual is not wearing either item.

You can tailor your monitoring preferences by selecting specific cameras, locations, and time windows for PPE surveillance.

While alerts are optional, all the insights are available in our web app. Dive into detailed data analytics to effortlessly track the trend of PPE compliance over time, making informed decisions to prioritise safety in your workplace.

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# Forklift proximity

Identify near misses between pedestrians and forklifts in order to improve safety and avoid the "big accident."



Over the last two years alone, SafeWork NSW has recorded an astonishing 598 incidents involving forklifts. Tragically five of these incidents resulted in workplace fatalities.

Knowing that a lot of minor incidents go unreported, one could argue that the number of forklift incidents is much greater. And this doesn't factor in things like near misses.

To change behaviour between forklifts and pedestrians, it helps to know what the behaviour is and this is where AI Monitoring can help.

AI Monitoring can detect when a forklift is in close proximity to a pedestrian and log these events for easy review. You can also choose to receive real-time alerts.

These insights enable proactive decision-making and the continuous improvement of forklift safety.

# Mobile phone use

Mobile phones can be a major distraction, leading to safety incidents. Restrict their use in certain zones with AI Monitoring.



The use of mobile phone devices in proximity to high-risk operations can lead to distraction, which impacts reaction times and overall situational awareness. This increases human error and accidents.
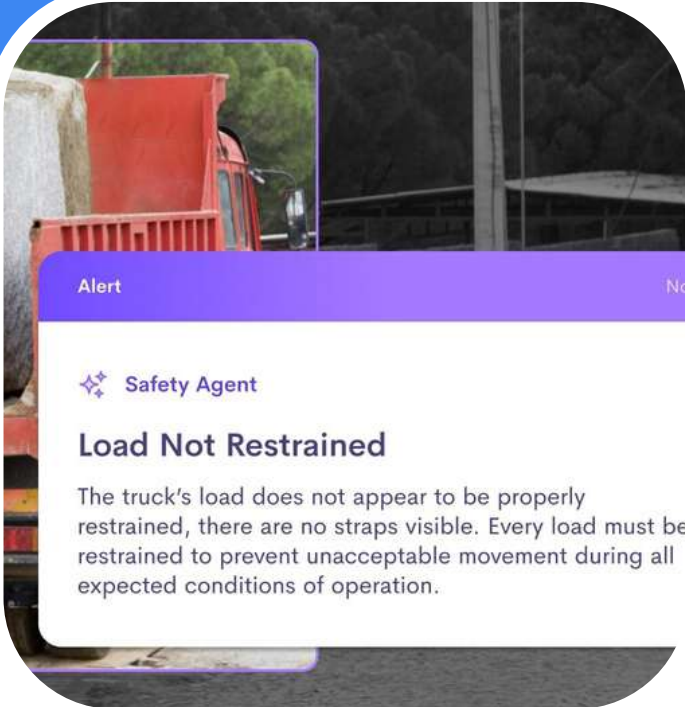
While a lot of workplaces have good safety protocols, prohibiting the use of mobile phones within certain zones has been difficult to enforce. This is where AI Monitoring can help.

Use AI to watch exclusion zones, sending optional alerts when a phone is seen. To identify trends, our web app logs all events for easy review.

If it prevents one major accident, it's worth it. Prioritise safety with AI Monitoring.

# Vehicle load restrains

Comply with Chain of Responsibility (CoR) requirements with load restraint inspections.



**Alert**                                        No

✧ Safety Agent

## Load Not Restrained

The truck's load does not appear to be properly restrained, there are no straps visible. Every load must be restrained to prevent unacceptable movement during all expected conditions of operation.

Managing load restraint is a key item in Chain of Responsibility (CoR) laws. This is important to ensure cargo does not shift or fall off during transport.
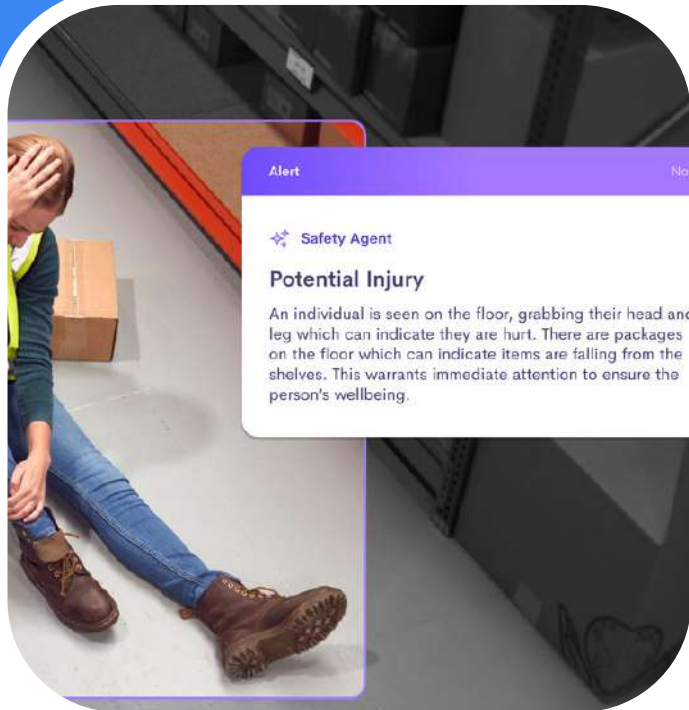
While AI doesn't replace human checks of vehicles, it can help aid in identifying if a vehicle's load warrants closer inspection.

You can use AI Monitoring to automate the inspection of vehicles and send an alert if a load looks unsecured.

In addition, the data that AI Monitoring provides can enhance load restraint records, which is a requirement under CoR laws.

# Safety incidents

Leverage AI to actively monitor and alert you to specific safety issues that are not possible with traditional alarms.



Alert

✦ Safety Agent

**Potential Injury**

An individual is seen on the floor, grabbing their head and leg which can indicate they are hurt. There are packages on the floor which can indicate items are falling from the shelves. This warrants immediate attention to ensure the person's wellbeing.

Safety Agent Alarm is a world-first innovation that allows an AI agent to actively monitor your security cameras and promptly alert for safety concerns.

This opens up a wide range of alarms that were previously not possible. This includes incidents that may serve as early indicators for more serious issues.

Some examples include:

- Alert for someone lying on the ground
- Alert for someone on the roof near the edge
- Alert if a worker looks injured
- Alert for people physically fighting
- Alert for a person climbing a fence

While Safety Agent has been trained to look for standard safety issues, it also allows you to add extra information about your site and any safety rules that must be followed. This helps Safety Agent know what specify the types of events and behaviours should trigger an alert.
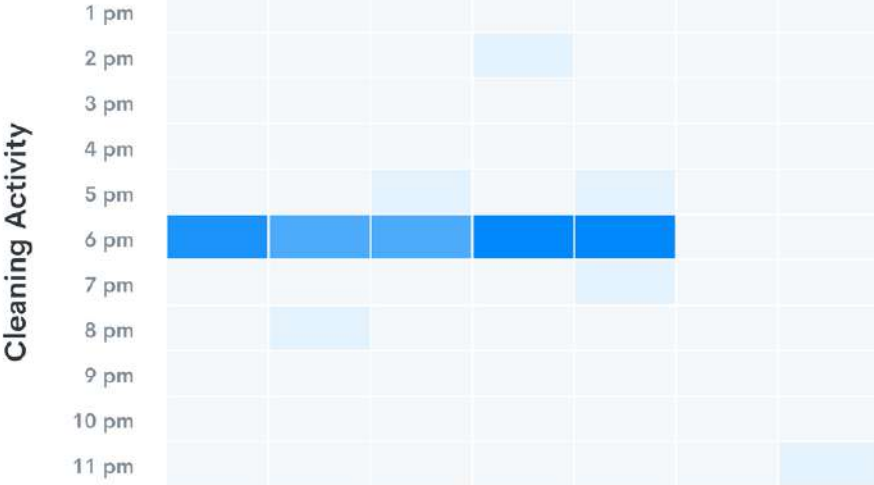
# Cleaning work

Cleaning is a big expense. Ensure cleaners are fulfilling their obligations by detecting cleaning equipment on site.



Are your cleaning contractors performing the work you are being billed for?

You can use AI Monitoring to detect cleaning equipment on site. This gives you insights into what times of day cleaning activity is happening and how much activity there is across different parts of your business.

Is activity consistent day-to-day or week-to-week? These are just some of the cleaning insights you can glean with AI Monitoring.

# Our approach to protecting your data

We adhere to the Australian Privacy Principles (APPs) contained in the Privacy Act 1988 (Cth) (Privacy Act) and to the extent applicable, the EU General Data Protection Regulation (GDPR).

We also leverage world-class technology partners that meet the strictest compliance standards.

All client data is stored and encrypted in disparate cloud systems, built on the Asia Pacific (Sydney) region of the AWS (Amazon Web Services) platform.

Our ML algorithms are developed in-house and constantly improved. We release updates to our models regularly, and work closely with you to make sure you get the best possible results with our software.

Our authentication partner is Auth0, an industry-leading identity management platform. Nirovision offers RS256 signed JWTs for authentication via Auth0, in line with OIDC compliance.

Our applications are accessed via HTTPS using Transport Layer Security (TLS) encryption. We also utilise multiple layers of security controls (software, physical and process based) to protect client data.

# A game changer for businesses that value safety

AI Monitoring provides insights into previously unseen activity that enables managers to proactively improve operations and enhance site safety. Whether it's ensuring compliance with PPE protocols, tracking cleaning work, or being notified if someone is hurt, our software opens up a wide range of alarms and insights that were not possible until now.

We're excited to see how you choose to use AI Monitoring to improve safety, strengthen security and boost productivity.



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# Contact us

Leading global companies continue to choose Rapid to manage their compliance, safety and risk management processes with their staff, contractors, and site visitors. Our fully integrated and modular workforce management software supports a culture of safety and compliance.

Are you ready? Schedule an obligation free demonstration with our experts.

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