

Solution Brief

AI Machine Vision
Health Monitoring



wesense.ai Tracks Health and Safety Compliance with Smart Camera System

Solution built with the Intel® Distribution of OpenVINO™ toolkit monitors workplaces for infection control



“The Intel® Distribution of OpenVINO™ toolkit significantly reduced computing power required on our video analytics product and improved overall efficiency. This allowed us to deliver a superior product at an affordable price so that we could expand our customer base.”

— Sankara Srinivasan, founder and CEO, wesense.ai

The novel coronavirus pandemic created a new and pressing need for workplaces to strictly enforce a range of policies designed to prevent infection, including temperature checks, hand sanitizing, mask wearing, and social distancing. Business continuity can depend on adherence to new health and safety mandates. Now wesense.ai has developed HealthSense, a contact-free workplace solution designed to simplify and monitor compliance using the multifunction Clear Health device.

Built using the Intel® Distribution of OpenVINO™ toolkit and Intel® Movidius™ VPUs, the AI-based HealthSense solution uses machine vision to recognize faces of the employees who have opted in with 99.23 percent accuracy—even when the system isn't connected to the internet.¹ With live dashboards, real-time alerts, and antispoofing technology, HealthSense makes it possible for employers to monitor adherence to new health and safety measures, making it easier to get back to business.

Challenges: Tracking a broad range of compliance metrics in a contact-free workplace

In order to help keep employees healthy and comply with government or corporate mandates, workplaces today must often follow multiple new standard operating procedures (SOPs) for infection control. However, many of these monitoring tasks—like taking employees' temperatures or making sure employees sanitize their hands before entering a work area—can present significant challenges. Manual monitoring is not only costly but can create potential social distancing breaches.

Employers may also want to ensure that employees adhere to social distancing measures, which can be difficult to accurately follow. Because noncompliance could quickly lead to infectious spread, it is also critical for employers to be able to monitor the workplace in real time and to track compliance over time to make sure that any problems are identified and addressed.

99%
accurate

identification of opted-in employee faces¹



Solution: Smart cameras monitor workplaces unobtrusively to maintain compliance

The wesense.ai HealthSense solution was designed with current challenges in mind. When opted-in employees enter the workplace, rather than noting attendance with timecards or touchscreens, the Clear Health device running the HealthSense solution uses facial recognition technology to identify the employee and mark their presence.

While identifying the employee, a temperature sensor is used to determine whether the employee has symptoms potentially indicating the presence of an infection and will notify appropriate personnel in the event of a fever. When an employee's temperature is normal and the employee has been cleared to work, the Clear Health device dispenses hand sanitizer to the employee and tracks this use as well.

The facial recognition algorithms used by the HealthSense solution are capable of identifying faces with their lower half covered by an infection control mask. The system is also capable of identifying whether a face is wearing a mask and can alert supervisors to any uncovered faces that could present a risk to other employees.

Using CCTV cameras, the HealthSense solution is also capable of detecting whether the minimum social distance has been maintained between employees who have opted in. Alerts can be set up for any activities that fall outside current recommended SOPs, and adherence is tracked on a daily basis.

Benefits of the wesense.ai HealthSense solution include:

- **Contactless monitoring:** Traditional attendance-taking procedures are difficult to conduct while maintaining social distancing and infection control SOPs. By automatically taking attendance and the temperature of employees who have opted in, HealthSense reduces unnecessary contact and ensures that symptomatic employees are quickly identified.
- **Real-time insight:** Configurable dashboards and alerts give employers a better understanding of when and how violations of SOPs occur and can identify problems instantly when they occur for faster resolution.
- **Simple setup:** Using the Clear Health device's basic features—including touch-free attendance, sanitization compliance, and temperature measurement—requires only a simple setup procedure and employee registration through an easy-to-use online portal.
- **Uninterrupted performance:** Compliance needs don't stop, even when connectivity is limited. The Clear Health device is capable of performing its normal functions for up to eight hours without an internet connection—or even access to an electrical outlet.

How it works in brief

The Clear Health device from HealthSense contains three components: a smart camera with a temperature sensor, a contact-free sanitizer dispenser, and an AI edge-processing system. In order to develop advanced AI capabilities for Clear Health while using a low-power, low-cost CPU, wesense.ai turned to the Intel Distribution of OpenVINO toolkit.

By building facial recognition algorithms based on prebuilt samples available in the toolkit, developers at wesense.ai were able to create and deploy the HealthSense solution faster than creating the algorithms from scratch. The HealthSense solution is capable of recognizing faces of employees who have opted in with 99.23 percent accuracy,¹ enabling employers to maintain reliable attendance records. Liveness detection is used to ensure that photographs or

other spoofing techniques are not used to misrepresent a face to the camera.

In order to accelerate deep neural network and computer vision within the Clear Health device, wesense.ai used Intel Movidius VPUs. This enabled the facial recognition algorithms to run at a higher frame rate using a lower-cost CPU.

While it is possible for employers to rapidly deploy the Clear Health device with basic features using no additional cameras, social distancing compliance is made possible by deploying an additional processing device, allowing remote integration of CCTV cameras with the HealthSense dashboard. Integrating CCTV cameras also enables the HealthSense dashboard to report on aggregate mask compliance and track mask-wearing trends.

HealthSense Solution

Opted-in employees are identified via the Clear Health device. Data gathered by the device can be managed with a dashboard that includes alerts, reporting, and monitoring tools to enhance compliance.



Conclusion: Automated, touch-free health SOP compliance powered by Intel® technology

In a world changed by the coronavirus crisis, employers have a greater need than ever to monitor employees for adherence to health and safety SOPs. wesense.ai developed HealthSense—a solution based on the Intel Distribution of OpenVINO toolkit—to simplify, automate, and track compliance of opted-in employees using advanced facial-recognition technology based on deep learning neural networks. Real-time monitoring and alerts, as well as visual dashboards, can identify compliance problems and trends as quickly as they happen.

Offering automated touch-free attendance, temperature checks, sanitization, mask detection, and social distancing monitoring, the Clear Health device, using the HealthSense solution, can make it easier for employers and employees to remain safe while working under swiftly changing conditions.

Learn more

To discover how the wesense.ai HealthSense solution and the Clear Health device can ensure health and safety SOP compliance in the workplace, visit <https://wesense.ai/health-sense.html>.

Intel Distribution of OpenVINO toolkit

The Intel Distribution of OpenVINO toolkit is free software for developers that accelerates performance, deep learning, and computer vision inference from edge to cloud. It supports heterogeneous processing and asynchronous execution across multiple types of Intel® processors.

Introducing Long-Term Support

Developers can now choose between standard support releases or Long-Term Support (LTS) for the Intel Distribution of OpenVINO toolkit. Standard releases provide new versions of the toolkit every quarter, ideal for early-stage projects and developers looking to take advantage of the latest innovations in deep learning. LTS offers long-term maintenance and support, a great choice for later-stage developers focused on leveraging the toolkit's existing features and functionality.

Long-Term Support benefits:

- Focuses on deployment and is designed to be taken into production
- Includes critical bug fixes for one year and security patches for two years, postrelease
- Enables shipping applications with reliability in existing capabilities and compatibility

[Learn more >](#)

Intel® DevCloud for the Edge

Intel DevCloud for the Edge is a cloud-based sandbox that empowers enterprise developers to test, prototype, and benchmark AI edge models across multiple platforms in real time, from nearly anywhere in the world. This makes it easy to identify the best hardware configurations for AI edge applications, accelerating time to market and reducing costs.

[Learn more >](#)

About wesense.ai

wesense.ai is a pioneer in facial analysis and recognition solutions across various industries, ranking as one of the fastest-growing AI companies in India. From Fortune 500 companies to smaller retail spaces, hundreds of stores around the world use wesense.ai to know their store and visitors.

wesense.ai



1. Source: internal wesense.ai testing data.

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