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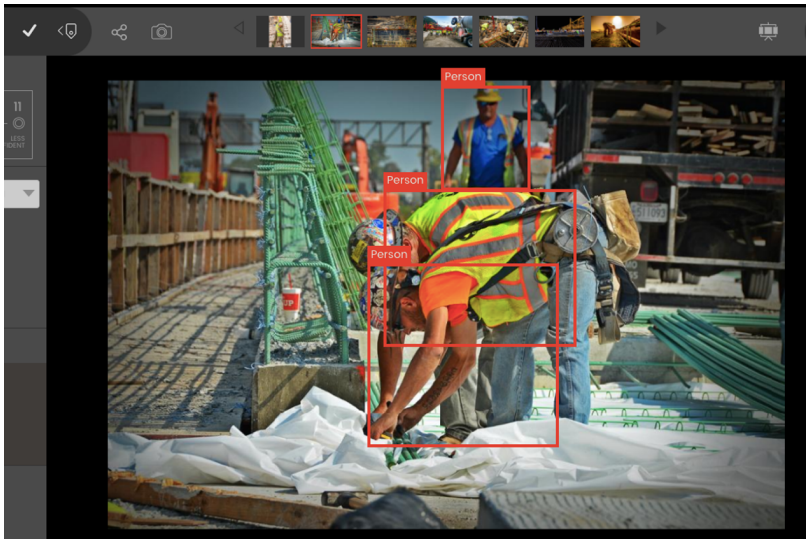
Computer Vision Could Help Enforce Social-Distancing in the Workplace

With no coronavirus vaccine in sight, good behavior will be crucial to keeping people safe when companies start to reopen plants and offices



Smartvid.io's software can identify if workers are close to one another or gathering in groups of 10 or more people.

PHOTO: SMARTVID.IO VIA ENR PHOTO COMPETITION

By **VINOD SREEHARSHA**

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Companies preparing for the easing of coronavirus lockdowns have an arsenal of new artificial-intelligence tools that can help implement and enforce social distancing and other safety measures in the workplace.

The number of new Covid-19 cases continues to increase in the U.S.; a vaccine and therapies are far from ready; and widespread testing remains elusive. That means behavioral safeguards are crucial as a handful of states lay the foundations for opening their economies.

Georgia is set to open this week. Florida's governor created the Re-open Florida Task Force. New York is preparing for mass testing and contact tracing, which could lay the groundwork for

opening more businesses.

AI companies such as Smartvid.io Inc. and Drishti Technologies Inc. provide tools that might help companies in a range of industries, such as construction and automotive parts manufacturing, get ready for the reopening of plants and offices.

Earlier this month, Smartvid.io, which has an AI-powered enterprise software product that assesses risk and safety at work sites for construction companies, released a new capability that detects if two people are closer than one-person length apart and if more than 10 individuals are gathered.

“We’re working hard to help our customers to stay open and in a safe manner,” said Josh Kanner, its founder and chief executive officer.

The Cambridge, Mass.-based company, whose customers include large national firms such as Clark Construction and Shawmut Design and Construction, has technology that uses a combination of cameras and various deep learning approaches for computer vision, an area of artificial intelligence where machines are trained to analyze images.

Over the past five years, it has built a library of construction imagery and project data. That imagery allowed the company to build more than 60 different construction-focused machine learning models that look for specific indicators of risk in imagery, Mr. Kanner said.

For example, is a worker on a ladder or working at heights? Aggregate data leads to an overall picture of risk.

Drishti, based in Mountain View, Calif., provides an end-to-end AI-driven computer vision solution to manufacturing companies, including automotive parts maker Denso Corp.

The Drishti system analyzes the entire manual assembly process. There is a camera pointed at each station and video is fed into Drishti’s cloud. Proprietary neural networks that include action recognition analyze a full video stream rather than focusing on single frames and can measure how far apart workers are from one another.

“We can ping a line person giving them instant feedback much like how spell check works,” says Prasad Akella, Drishti’s founder and chief executive officer.

Yet Mr. Akella thinks that is merely one of many ways to help manufacturers improve safety. Reducing the number of observers or supervisors, people who don’t produce parts, on the floor also reduces density.

Landing AI and PricewaterhouseCoopers also are developing new AI-powered distance monitoring tools for the workplace.

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Landing AI has built a deep learning prototype it is testing that would analyze real-time video streams. The software would be integrated into security camera systems. It would issue an audible alert if people pass too closely to each other on the factory floor and a nightly report that can help managers get additional insights into their team and then make relevant changes such as rearranging the workspace, Andrew Ng, founder and chief executive, said in an email interview.

Consulting firm PwC has developed what it calls an Automatic Contact Tracing tool, which uses AI that helps aggregate millions of wireless signals into a graph that can then be interpreted.

The growth in the use of these tools reflects deeper changes that might be more than short-term.

Smartvid.io's Mr. Kanner says that in construction, changes such as decreasing the number of workers on site on a given day by 50% or a maximum number of people who can be up in a buck hoist—those external elevators that carry workers up a building—have already been in effect for several weeks.

He says that further indicates AI could play an important role. "It shines a light on the importance of being able to observe and document and prove the mitigation steps that are being taken."