



The workforce faces a major Covid-19 risk. Here's how AI can help keep them safe.

Tejpreet S. Chopra

New Delhi, November 3, 2020

When India emerged from the COVID-19 lockdown around the end of May, there was a growing need for reliable and affordable solutions to protect workers' health and to prevent the coronavirus from spreading in factories and workspaces. My group, Bharat Light & Power (BLP Group), specializes in renewable energy but also owns an artificial intelligence platform, BLP Industry.AI, that develops Industry 4.0 technologies such as big data analytics and machine learning. Businesses were keen to know from us how they could tap the power of these technologies to reopen their factories safely.

As we worked with our partners to quickly develop the solutions they needed, we learned lessons that could serve businesses everywhere, and make factories safer and more resistant to current and future shocks.

AI for early warning

Floor managers and supervisors typically face several problems as they try to stop the spread of the virus. First, it is impossible to constantly monitor in person that workers are wearing the required protective gear, such as masks and visors, and that they are observing social distancing rules. Some companies require employees to report daily whether they are unwell, or have visited a containment zone, but monitoring these self-declarations is cumbersome. Supervisors are also supposed to monitor the temperature of every employee, quickly isolate those with a high fever, and implement full contact tracing for anyone testing positive for COVID-19. Aside from the practical difficulties, the cost of these measures would crush any small and medium-scale company.

We have developed three broad solutions to help these businesses. They provide immediate protection during the coronavirus crisis, all the way from early detection to containment measures, but can also be applied in other common safety scenarios, such as detecting fires.

Camera feed and cloud technology for monitoring: "Trust AI"



The first solution centres on a cloud-based system that deploys a combination of visual analytics models, mathematical models, and neural network models to analyse existing video feeds from cameras from the factory floor, offices, malls, or airports.

Some of these feeds are ordinary videos of employees at work, which are uploaded to the cloud. Algorithms analyze these images in real time and issue an alert to the safety officer in charge if a worker does not wear appropriate safety gear, or breaks social distancing guidelines.

Mobile phone technology for safety: “US Pro”

Our second solution is based on mobile phone technology that enables phones to communicate with each other. This system provides real-time alerts when social distancing rules are breached, and tracks employees’ temperatures every few hours to detect potential fever. The same technology facilitates fast contact tracing if anyone tests positive, by listing all those who have been in close proximity to the infected person, as long as they all carry mobile phones.

Wearable devices: “Spot AI”

The third solution is based on wearable devices such as wristbands or smart ID cards. These objects vibrate whenever a worker breaches social distancing rules, and also transmit the relevant data to the cloud if permitted and required by the organization for analytics. The vibrating wristband provides a clear signal to the worker, who may not have been aware of stepping too close. It also informs the safety officer in charge and can help them identify the root cause of recurring patterns and problems.

Beyond COVID

There are fears that the pandemic may return in waves, and the vaccines may not be ready for all virus mutations. In this situation, industries will have to support each other, and help governments accelerate the adoption of next-generation technology in many areas of life. The disruption of supply chains has forced companies to speed up their digital transformation plans to improve not just workers’ safety, but also organizational productivity and decision-making. AI can help with these processes too, transforming modern manufacturing and creating the secure, resilient, and productive workplaces of tomorrow.