



IMPROVING WORKER SAFETY WITH AZURE COMPUTER VISION

BACKGROUND

The use of technology in ensuring safety measures at job sites has gained significant traction in recent years leading Cramo, one of Europe's largest construction machinery and equipment rental services companies, to initiate discussions about the need for safer job sites with their clients. This pilot project was conducted at a job site where a leading Swedish construction company partnered with Nexer Insight, where discussions were centred around improving safety measures for workers and reducing the incidence of unauthorised visitors to the site.

Throughout the pilot, Nexer Insight worked closely with Cramo to identify opportunities to enhance worker safety and minimise the risk of unauthorised visitors to the site. By leveraging cutting-edge Azure Computer Vision technology, Cramo and Nexer Insight developed innovative solutions that ensured workers kept their safety gear on, ultimately creating a safer working environment.

AT A GLANCE

Company: Boels-Cramo Group

Industry: Equipment Rentals

Employees: 5,001+

Objectives:

- . To enhance worker safety and minimize the risk of unauthorized visitors to job sites
- . To improve safety compliance through innovative approaches
- . To promote a safety culture and enable data-driven decision-making for managers through the use of cutting-edge technology

Products:

- . Azure IoT Hub
- . Azure IoT Edge
- . Azure Machine Learning
- . Azure Stream Analytics
- . Microsoft Power BI

CHALLENGE

Customers of Cramo faced a challenge with workers' reluctance to wear safety gear, which was addressed through collaboration with Nexer Insight to develop an education and engagement strategy that significantly improved compliance. The initiative involved adapting the solution from an office to a rugged job site, which posed technical challenges such as low light and cold weather conditions and providing reliable connectivity in remote areas. This collaboration between technical experts and industry leaders highlights the potential to address complex challenges through innovative approaches, focusing on promoting worker safety and preventing accidents at construction job sites.

SOLUTION

To address technical challenges in enhancing worker safety at job sites, Nexer Insight implemented advanced networking technology and rugged hardware. This helped to overcome issues such as low light and cold weather conditions and provided reliable connectivity in remote areas.

In addition, Cramo implemented a camera system integrated into safety gates to ensure workers wore the correct safety gear. This system effectively enforced safety protocols and increased workers' awareness of the importance of safety. The collected data also helped to identify areas that required further training.



“OUR AI TESTING METHOD ENHANCES WORKPLACE SAFETY BY ANALYSING SAFETY EQUIPMENT ADHERENCE IN REAL-TIME, RESULTING IN A POSITIVE IMPACT ON WORKER SAFETY. THE TECHNOLOGY HAS THE POTENTIAL TO CONTRIBUTE TO SAFER WORKPLACES ON A LARGER SCALE. IT ALSO PROVES THAT IF USED RIGHT, AI CAN BE USED TO CREATE REAL VALUE, ALSO IN AN INDUSTRY THAT IS NOT VERY DIGITALIZED.”

- LINE BORGÖ, HEAD OF DIGITAL BUSINESS, CRAMO

BENEFITS & RESULTS

The camera system being developed by Cramo has shown promise in improving worker safety and has yielded multiple benefits and positive results. The system has facilitated a shift in workers' attitudes towards safety by providing valuable insights into their behaviour and reducing accidents and injuries at job sites. Job site managers are empowered to make data-driven decisions to address specific safety concerns, further enhancing worker safety, and fostering healthy competition among workers around safety, increasing their engagement in safety protocols. Workers' safety awareness has also improved, resulting in greater compliance with safety gear requirements

and fewer accidents and injuries. Customers have expressed confidence in Cramo's ability to deliver safe job sites, and the pilot project's success has led to its expansion to other sites. Edge computing technology has been utilised to protect workers' privacy, and the successful implementation has also created a digital demo area for customers.

These benefits and results demonstrate significant potential for the broader deployment of the camera system across other job sites to strengthen worker safety and promote a safety culture in the construction industry.



“At Nexer Insight, we take pride in advancing technology in the industry. Our commitment to partnering with organisations to implement innovative solutions that drive success is unwavering. This case study comprehensively analyses our collaboration with Cramo and one of the leading Swedish construction companies in Sweden. It underscores the potential of data analytics and advanced technologies to revolutionise the construction industry.”

- David Österlindh, CEO, Nexer Insight.



Find out how Nexer Insight can help your organisation:

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