

AI Analytics Increase the Value of Video Cameras

 insight.tech/retail/ai-analytics-increase-the-value-of-video-cameras

May 14, 2024

May 14, 2024

[Teresa Meek](#)

It's not your imagination: From airports and city streets to shopping centers, arenas, and museums, CCTV cameras are ubiquitous. To maintain safety and security, municipalities and businesses are investing more on video equipment every year.

But some organizations are starting to question how much those extra dollars are doing for them. Certainly, the cameras are invaluable for capturing information—whether it's a highway traffic jam or a jar of spaghetti sauce spilling across a grocery floor, their all-seeing eyes never miss a problem.

That's not always true for staff monitoring the video feeds, though. Studies have shown their detection ability decreases by 15% after just 30 minutes. After that, reaction time slows and errors increase. Adding more cameras compounds the problem.

Today's AI analytics software can close these gaps. AI-powered video instantly makes sense of incoming video feeds, sending alerts in near real time to stop problems before they get out of hand.

And analytics doesn't just improve security, it adds business value. AI algorithms can observe customer behavior, revealing which promotions work and which don't, which experiences capture people's attention the best, and where bottlenecks cause frustration. These insights can help marketers, retailers, and facilities managers improve their service and draw more customers, ensuring that their investments in video technology are worthwhile.

Today's #AI analytics #software can close these gaps. AI-powered #video instantly makes sense of incoming video feeds, sending alerts in near real time to stop problems before they get out of hand. @AerVision via @insightdottech

Improving Safety and Efficiency

Desire for greater video capabilities is widespread, says [Abbas Bigdeli, CEO of video analytics company AerVision Technologies](#). "We're definitely seeing the trend of organizations wanting to get more out of their video infrastructure. They want more precise data, better security, and better productivity."

To improve incident detection and increase efficiency, AerVision developed AerWatch, an AI video analytics solution that companies can customize to recognize and respond to specific types of risks—and opportunities.

For example, at large retail or grocery stores, AerWatch can recognize personal belongings or merchandise a customer has left behind in a shopping cart, directing staff to the lost items so they can set them aside for easy pickup. The system can also send alerts about hazards that could cause a slip-and-fall accident.

At museums and theme parks, AerWatch can detect a lost, distressed child and inform a manager of their current location and the point where they likely became separated from parents. After business hours, algorithms can alert security guards if someone attempts unauthorized entry or starts to spray graffiti on a wall.

In some cases, timely intervention may save lives. For example, in busy public venues, AerWatch has been used to alert personnel if a person is loitering, repeatedly pacing back and forth, or trying to climb over a security rail—behaviors which may signal an intention to cause self-harm. First responders are trained to discourage people from impulsive behavior and obtain the help they need. And this is much easier with the help of AerWatch, which sends an initial alarm to bring attention in these kinds of scenarios.

Gaining Customer Insights from AI Analytics

In addition to improving safety, organizations use video analytics to understand their customers better. For example, a museum in Australia that has 400 video cameras uses AerWatch both for security and for counting visitors. Analytics measure how long visitors spend at each exhibit, a proxy for engagement. Reviewing this information helps staff plan content that sparks audience interest.

Algorithms also count the number of visitors using wheelchairs or pushing children in strollers. “If the museum wants to make access more accommodating, they will have data to back up that decision,” Bigdeli says.

Airports, stores, hotels, and banks also use AerWatch to see where service improvements are needed. AI can measure how long people have to wait for an airline ticket, an elevator, a clerk, or an ATM machine.

Shopping centers like to track visitors during special events or promotions. Some hire consultants to gauge success, but they can’t always provide a comprehensive picture. “With AI analytics, you get much more granular data at a fraction of the cost,” Bigdeli says.

Building Effective Algorithms

For its analytics solutions, AerVision creates pre-trained machine learning models using the Intel® OpenVINO™ toolkit to streamline edge AI development. The pre-trained models are sufficient for some customers, Bigdeli says. For others who want more fine-tuning, AerVision works with them using OpenVINO to build custom solutions.

All solutions use Intel® processor-based hardware, which handles heavy video loads quickly and efficiently, while also enhancing data protection and privacy. AerVision software does not retain personally identifiable information and complies with all regulations in customers' jurisdictions, Bigdeli says. In addition, the company provides tools to help companies apply their own privacy and access policies.

Expanding the Potential of Video Analytics

While AerWatch is its primary product, AerVision has developed solutions for other use cases, including AerMeal, which measures caloric intake for hospital and care-home patients at risk for malnutrition. Sports teams can also use it to ensure that athletes consume recommended amounts of protein.

With an eye toward the future, AerVision is experimenting with generative AI. One potential solution sorts through vast volumes of video data to create customized reports for different teams. "The report that goes to the security director might be different from the report that goes to the marketing director or the facility manager," Bigdeli says.

Another generative AI project aims to speed model training. For example, an airline that wants to make sure a food cart gets loaded onto the plane may try to obtain images of the cart from existing video footage. But that's not as easy as it may sound, Bigdeli says. Hunting for specific images is very time consuming, and the airline may find only one or two views of the cart. Generative AI can conjecture views from other angles, allowing an AI model to learn faster and achieve more accurate results.

Solutions like these are just scratching the surface of AI's possibilities for video. "As processing power increases, more people are starting to take advantage of edge AI solutions," Bigdeli says. "Whether companies want to improve energy management, optimize their use of space, or provide better customer service, they can find ways to improve efficiency and productivity with video analytics."

This article was edited by Georganne Benesch, Editorial Director for insight.tech.