Improve Perimeter Safety and Security with Computer Vision AI Restoration

Perimeter Security Challenges

Applying real-time computer vision AI to existing and new perimeter security systems offers a compelling range of benefits for improving the safety, security and operations of critical facilities and their personnel in all environmental and lighting conditions. These include improved threat detection and streamlining security processes with improved service response times and accuracy, while lowering the total cost of ownership of the video infrastructure, including illumination.

Analyzing images and video feeds from sensors is often impeded by operational complexities, including the inability to interpret real-world, unconstrained environments where video and images are less than perfect. Like humans, even the highest quality cameras and sensors cannot see through night, glare, fog, rain, snow, pollution, and other visual obstacles. And most often, computer vision AI solutions are trained on pristine imagery and unobscured objects.

Facility operators are also faced with high lifecycle replacement costs of critical systems, often choosing to upgrade cameras to gain operational efficiency. ProHawk AI can extend the useful life of existing investments by improving their operational usefulness, in real time. Additionally, the use of ProHawk Vision software can reduce the need for expensive and environmentally disruptive visual lighting systems, which are especially problematic in areas requiring dark skies compliant solutions.

Key Benefits and Outcomes

Real time monitoring with ProHawk Vision in the video workflow overcomes all environmental and lighting issues to enable decisive action at the decisive time and place. Video analytics perform better to reduce response times for security personnel by alarming on objects faster.

- **Enhance Facility Safety and Security:** Detect security breaches, suspicious activity, and unattended items and vehicles in real time in all lighting and weather conditions.
- **Improve Efficiency of Operations:** Resolve poor visibility conditions to drive faster decision-making and response times without additional equipment or staff. Streamline video analytics and reduce the time required to process and analyze video data for real-time decision-making. Reduce false positives between harmless objects and potential threats, minimizing the need for physical verification.
- **Lower TCO of Video Camera Infrastructure:** Extend camera life and eliminate the need for expensive and disruptive lighting systems upgrades - existing cameras and sensors simply perform faster and better. Enhance the performance of analytic-enabled cameras, significantly reducing their life cycle costs by optimizing their inferencing results in real time.

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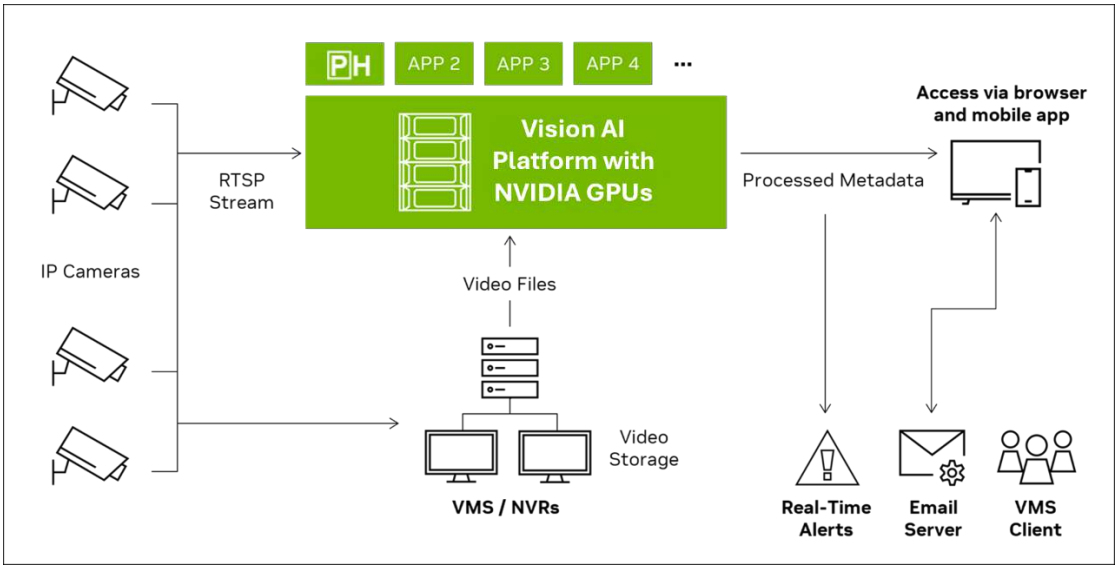
Better Business Outcomes Powered by NVIDIA Accelerated Computing

By using accelerated computing solutions with NVIDIA GPUs, ProHawk AI Vision transforms video in real time, on a pixel-by-pixel basis, overcoming all environmental obstacles and lighting conditions. This produces live video streams and images that reveal previously unseen details for humans and AI tools. This can be seen in the image below, with before and after images from ProHawk Vision.

Resolving poor visibility conditions enables downstream video inferencing tools and security workflow processes and to perform at unobstructed, daytime safety levels, and it reduces false positives between harmless objects and potential threats, minimizing the need for physical verification of alerts.

ProHawk AI uses the NVIDIA Metropolis stack for computer vision AI deployments to analyze video and sensor data in real time, restore clear video for live camera and VMS streams, and restore images and recorded video.



Validated through deployments and benchmark testing on standard GPU accelerated systems, ProHawk AI Vision has demonstrated robust performance improvements:

- 300% improved object detection and tracking accuracy
- 30X faster video stream restoration than conventional systems
- <3 milliseconds of latency

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