



Improve Forensics Investigations with Computer Vision AI Restoration

Forensics Investigation Challenges

Forensics investigations that rely on image or video evidence face several significant challenges. One of the primary issues is the degradation of visual data, which can occur due to various factors such as poor lighting, low resolution, or environmental conditions during recording. Blurred, grainy, or obscured visuals can impede the ability to accurately identify individuals, objects or actions, making it difficult for forensic experts to draw definitive conclusions. This problem is exacerbated when the evidence is captured by security cameras or mobile devices with limited capabilities. The quality of visual evidence is critical in legal and insurance contexts, as even minor details can sway the outcome of a case.

Integrity of Evidence

Another challenge in using images or video evidence in forensic investigations is the potential for tampering or alteration. Digital manipulation of evidence can lead to disputes over the authenticity of the material presented in court. Investigators need to ensure that the visual data has not been altered in a way that misrepresents the truth. This requires sophisticated tools that can detect inconsistencies or signs of tampering, which is essential for maintaining the integrity of the evidence. Without reliable restoration and verification methods, compromised evidence can undermine the credibility of an investigation and lead to wrongful convictions, acquittals, or insurance settlements.

Key Benefits and Outcomes

ProHawk AI video restoration software addresses these forensics challenges by enhancing the clarity and quality of visual evidence. By providing clearer, more reliable images and videos, ProHawk AI Vision can make them more effective for forensics investigations and legal proceedings, ultimately support the pursuit of justice.

- **Reduce noise and distortion:** Advanced algorithms can restore degraded or noisy images and footage by improving resolution, reducing noise, correcting distortions, and even seeing through tinted windows, thereby revealing critical details that may have been previously obscured or missed.
- **Authenticate integrity:** ProHawk AI's ability to authenticate and verify the integrity of the visual data can help forensic investigators ensure that the evidence remains untampered.
- **Support pursuit of justice:** Investigators can enhance the clarity of visual evidence, thereby reducing the risk of wrongful convictions, acquittals or settlements. By restoring degraded footage and ensuring the integrity of images and videos, ProHawk AI helps provide courts and insurance companies with accurate and reliable evidence for fair and just outcomes.

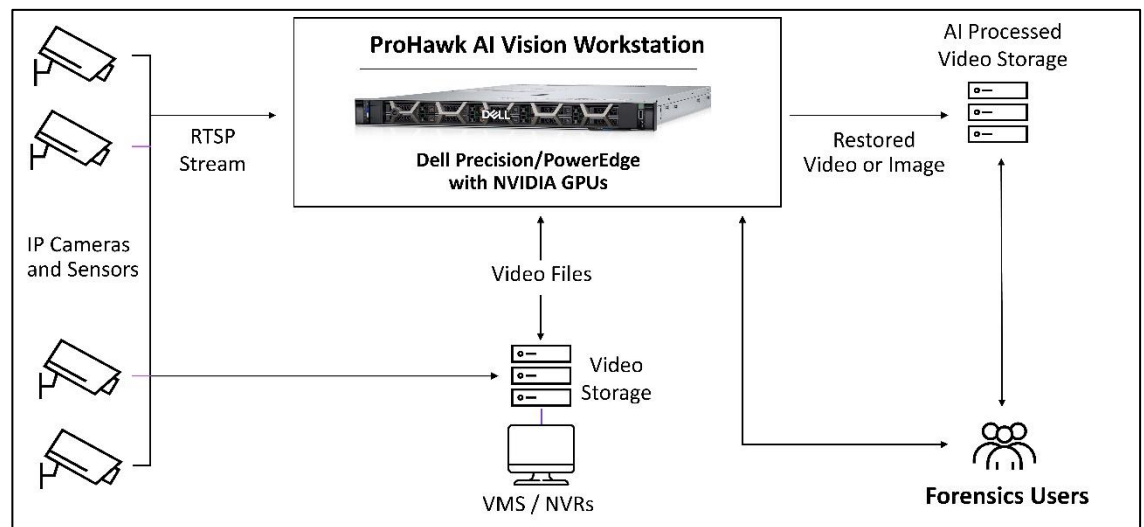
Enhancing Video and Image Forensics with NVIDIA Accelerated Computing

By leveraging accelerated computing solutions with NVIDIA GPUs, ProHawk AI Vision transforms forensic video evidence in real-time, processing footage on a pixel-by-pixel basis to overcome challenges such as poor lighting and environmental conditions, and even tinted windows. This results in enhanced video recordings and images that reveal critical details previously obscured, aiding both human investigators and AI analysis tools. This can be seen in the image below, with before and after images for tinted windows from ProHawk Vision Workstation.



Improving visibility in forensic imagery allows for more accurate identification and interpretation of evidence, enabling downstream video analysis tools and legal workflows to operate with greater precision. This reduces the risk of misidentifying harmless objects as threats and minimizes the need for additional verification, thereby streamlining the investigation process and supporting more accurate for outcomes.

ProHawk Vision Workstation software leverages NVIDIA GPUs to enhance the clarity of forensic video evidence and images, improving the quality of recorded videos and image for forensics investigations.



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