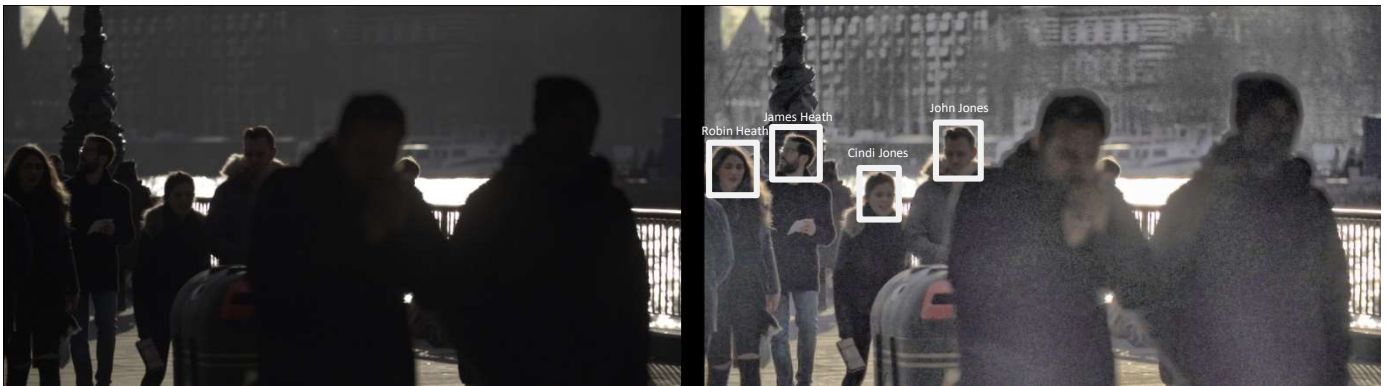


Superior Computer Vision

ProHawk Vision™ Software Developers Kit (SDK) is a library of powerful computer vision (CV) algorithms, that dramatically clarify and enrich the quality of images and live video. The ProHawk Vision SDK Application Programming Interfaces (API's) fix noisy, obscured, or unclear images or live video into sharp, clear imagery, or live video with intricate details. This makes images and live video more intelligible and useable for humans, video analysis (VA), and Artificial Intelligence (AI).

ProHawk Vision fixes problems that obstruct capturing good live video that stem from the environment. When live video is subject to difficult environments, problems fall into two categories: issues with light or lack of it; and issues with various sizes of suspended obstructive particles in the air or water called particulates.

Environment Problems Solved



ProHawk Vision SDK 5.0 solves the problems that cause poor live video with a variety of new features, enhancements and upgrades to support a wider range of platforms, formats, and conditions. While continuing to offer the world's first true CV live video improvement solution with unprecedented imagery details. Some new features in 5.0 include:

Live Video Requires Low Latency

Live video and computer vision require industry leading 2-10ms low latency leveraging NVIDIA GPU's or 16.6µs Xilinx FPGA's to ensure there is no video lag or frame skipping for a camera or VMS. This enables ProHawk Vision to be embedded in devices such as: NVIDIA Jetson TX2 and AGX Xavier; Xilinx UltraScale+ MPSoC CG, EG, or EV devices.

Expose Fine Details

Clearly see fine details to identify specific objects, situations, vehicles, and people. The powerful detail enhancement algorithm exposes fine details to detect small objects and see details that were not visible, even with good video. Faces, people, animals, objects, weapons, vehicles, and license plates can all be easily identified and exposed.

Sensor Coverage

ProHawk Vision API's improve more than poor color optical cameras, we increase the coverage range and accuracy of thermal sensors 300% and infrared cameras 500%. Humid climates cause problems due to excessive amounts of rain and fog which limit sensor range, along with the difficulties of sun glare.

Broad Difficult Conditions

A wider range of improvement parameters can be defined and programmed that quickly clarifies and enriches imagery in an efficient parallel process. This helps to reach actionable results fast for a wide range of difficult live video environments, such as: Low contrast imagery caused by fog, rain, snow, dirt, and sand; and High contrast imagery created by the suns glare, backlight, headlight, low light, night, and even tinted windows. The ProHawk Vision SDK improves poor low or high resolution live video interpreted by operators, VA, and AI.

Eliminate Effects of Motion

ProHawk Vision has a unique patented motion adaptation algorithm, which eliminates the adverse effects of objects in motion and moving cameras. This controls the residual image effect artifacts cause by movement or motion that eliminates annoying ghosting and ringing imagery.

Natural Color

ProHawk Vision's effective patented color adjustment algorithm restores natural color representations caused by difficult environments. This restores natural full color recognition in low contrast situations, while eliminating color oversaturation situations. See naturally in low contrast fog, rain, and snow or high contrast lighting situations.

Edge Improvement

The edge sharpening algorithm gives clearer uniform contrast details reducing noise and delivering natural image representations. This precise edge sharpening rises the accuracy of object detection and tracking while increasing analysis efficiency. Recognition is substantially increased for the most critical detailed unique identifiers including faces, people, masks, weapons, vehicles, license plates, animals, tattoos, and clothing brands.

Feature	Description	Benefit
Live Video/Low Latency	Industry Leading Low Latency, Compact High-Performance Algorithms Enable Embeddable Live Video Improvement	Dramatically Clarify Live Video with No Video Lag, or Frame Skipping That Enables Decisive Decisions
Expose Fine Details	Patented Detail Enhancement Algorithm Reveals Intricate Details, Even in Good Quality Video	Accurately Identify Objects, Weapons, Vehicles, License Plates, Faces, People, Animals, and Problems
Sensor Coverage	Eliminate Humid Climate Differentiation Struggles Between Body Heat and Ambient Surroundings	Increase Range and Accuracy of Thermal Sensors by 300% and Infrared Cameras by 500%
Broad Problem Environments	Programmatic Parameters Quickly Clarify Imagery Cause by Fog, Rain, Snow, Dirt, Sand, Smoke, Backlight, Lowlight, Sun Glare, Headlight, and Tinted Windows	Neutralize and Clarify Imagery Due to Light and Particulate Problems
Eliminate Effects of Motion	Patented Motion Adaptation Algorithm Controls Residual Image Effect Artifacts	Substantially Increase Recognition by Removing Annoying Ghosting or Ringing Imagery
Natural Color	Patented Color Algorithm Eliminates Color Oversaturation and Improves Color in High or Low Contrast Video	Restores Natural Color Representations
Edge Improvement	Edge Sharpening Algorithm Improve Outlines and Reduces Non-Uniform Imagery Noise	Imagery Fine Details Enable Unique Identification of People, Places, or Things

Clear Value Add

- Integrate or Embed in Devices, Cameras and AI Systems
- Reduce Costs of Poor Imagery
- Enrich Visual Details and Quality to Uniquely Identify
- Raise Accuracy of Monitoring, VA, AI, and CV Systems
- Alleviate Camera and Object Motion Problems
- Dramatically Increase Confidence of Detection
- Visibility in Any Challenging Environment
- Improve Recognition for Operators, VA, AI and CV



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ProHawk makes no warranties expressed or implied in this summary.

System Requirements

Operating System

Windows 7-10

Windows Server 2012-2019

Ubuntu 18.04.5 LTS, 20.04.1 LTS

NVIDIA GPU

Maxwell, Kepler, Pascal,
Volta, Turing, Ampere