

Transforming Smart Parking Operations

AI-Enabled Computer Vision

Overview

ProHawk AI's intelligent parking management solution leverages patented AI-enabled computer vision to transform underperforming, low-visibility video feeds into clear, actionable video streams—enabling real-time situational awareness across parking settings. ProHawk AI powered by NVIDIA accelerated computing and optimized with CUDA[®] parallel processing, restores video pixel clarity degraded by poor lighting, glare, weather conditions, or camera quality. This dramatically improves the accuracy of parking occupancy detection, vehicle identification, and rule enforcement—without requiring new cameras.

By integrating with existing cameras and infrastructure, ProHawk AI upgrades traditional video systems to deliver modern, AI-driven insights. Parking operators benefit from automated monitoring, optimized space utilization, improved security, and a significantly better end-user experience.

Key Challenges

Traffic Congestion

Finding an available parking spot can lead to traffic buildup and delays, especially in busy urban centers.

Operational Efficiency

Managing large parking facilities often involves manual inspections and labor-intensive processes, leading to inefficiencies.

User Experience

Parking operators struggle with providing real-time information on parking availability, leading to frustration for users.

Security & Compliance

Monitoring vehicles for security concerns and ensuring that parking rules are being followed can be time-consuming and difficult to enforce.

Key Benefits and Outcomes

ProHawk AI delivers a transformative leap in parking management by turning existing camera infrastructure into intelligent, high-performance systems. Operators gain real-time visibility into occupancy and violations—even in low-light or adverse weather. The result is faster vehicle throughput, reduced congestion, automated enforcement, and increased revenue. ProHawk AI empowers smarter decision-making, improves user satisfaction, and reduces operational costs—making it a compelling solution for both public and private parking environments.

• Reduced Congestion

Drivers are guided to available spots quickly, easing traffic flow in crowded parking lots.

• Operational Efficiency

Automating parking management processes reduces the need for manual interventions and labor.

• Improved End User Experience

With accurate real-time data and automated services, customers experience less frustration and more convenience.

• Increased Revenue

Automated payments and data insights, boost revenue by optimizing usage & ensuring compliance.

• Greater Security

AI-powered monitoring & automated vehicle identification bolster security, ensuring compliance & minimizing parking violations.

Real-Time, AI-Driven Parking Management for Smarter, Scalable Operations

ProHawk AI's parking management solution combines real-time occupancy detection, advanced vehicle identification, and automated enforcement using patented video clarity powered by NVIDIA accelerated computing. It integrates seamlessly with existing video systems and VMS platforms, improves license plate recognition and automated payments, and delivers actionable analytics for operational efficiency, security, and user experience—all in a scalable, edge-ready deployment.



ProHawk AI, powered by NVIDIA accelerated computing, elevates parking management by restoring degraded video streams in real time—transforming them into clear, actionable footage for occupancy detection, vehicle recognition, and rule enforcement. Built on NVIDIA Metropolis Vision AI stack, ProHawk AI powers smart parking with 3ms latency and up to 30× faster video restoration for accurate monitoring in any condition. ProHawk AI maximizes existing camera performance, eliminating costly camera upgrades, cutting expenses by up to 60%. delivers rapid ROI, streamlines operations, and enables highly efficient, fully scalable parking management—powering the next generation of smart city infrastructure.

Use Case	Result
Urban Parking Management	Manage multiple lots, where parking is often scarce, guiding drivers to the closest available spaces & ensuring the facilities remain secure & well-maintained.
Retail Parking	Use occupancy data to keep spaces open and pricing fair—improving customer satisfaction.
Airport & Transportation Hubs	ProHawk AI provides clear, real-time parking data so travelers find spaces faster and movement stays smooth.
Corporate Campuses	Efficiently manage parking, providing real-time data on availability & reducing administrative burden.

Feature	Requirement
Compatible NVIDIA Hardware	NVIDIA Jetson Orin™ & RTX™ Pro – Blackwell, Ada Lovelace, Ampere
Supported Input Formats	Image & Video Files, RTSP Camera Stream
Supported Operating Systems	MS Windows Server 2019/2022/2025 & Ubuntu 20.04/22.04

ProHawk AI's parking management solution leverages the power of AI and computer vision to optimize parking operations, improve the user experience, and increase security. Accelerated by NVIDIA Jetson™ at the scaling up to data center-class NVIDIA GPUs, it delivers real-time, actionable insights that drive efficiency and profitability. Whether in urban centers, airports, or corporate campuses, the solution is flexible, scalable, and designed to make parking management smarter, safer, and more user-friendly.

