

AN INTRODUCTION TO BEHAVIORAL ANALYTICS FOR REALTIME VIDEO INTELLIGENCE



viisights

Intelligence by vision

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THE VIISIGHTS ADVANTAGE

Overview

New and emerging security and health safety challenges demand new solutions to best protect people, property, and assets. viisights' innovative behavioral analytics leverage the latest advancements in imaging and artificial intelligence technology to deliver new benchmarks in video intelligence that transcend traditional real-time monitoring and forensics by providing actionable intelligence to minimize liabilities and prevent incidents from escalating.

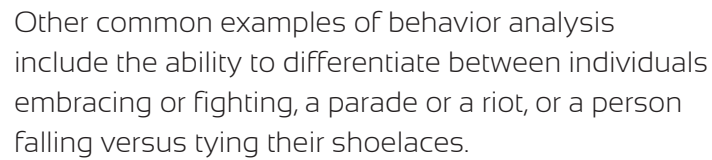
Why We're Different

Unlike conventional video analytics that use old pixel technology to recognize static objects and classify objects, viisights behavioral analytics employ Artificial Intelligence (AI) to automatically detect, analyze, and understand actions and events. This unprecedented level of video understanding is based on a unique implementation of deep neural networks capable of analyzing and defining specific activities using video streams from conventional security cameras.

viisights' behavioral analytics recognize the behavior of diverse objects and their relevant contexts. For example, an individual moving back and forth in a predefined area may simply be loitering or waiting for a bus. However, if the individual is hovering in the vicinity of an ATM, this may indicate a potential problem. viisights automatically identifies the location as a bus stop or ATM – without any manual setup or calibration.

The ability to distinguish a potentially dangerous situation from a normal occurrence provides security professionals with the unique ability to initiate fast and appropriate responses to minimize or even prevent incidents from occurring.





over time. This machine learning approach to event detection and analysis ensures that viisights behavioral analytics are both scalable and future-proofed.

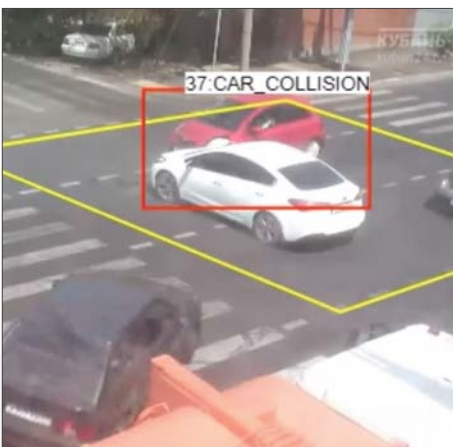


viisights unique capability to transform video streams into actionable insights provides users with myriad benefits, including the ability to...

- Automatically detect and predict events of interest such as violent and suspicious activity, crowd behavior, perimeter (protection) violations, public health violations (eg. COVID-19), traffic congestion and accidents, environmental and personal safety threats, and occupancy and mobility counting.
- Improve security monitoring accuracy and efficiency by eliminating the need for personnel to monitor large numbers of cameras simultaneously.
- Reduce personnel cost associated with monitoring large security systems and responding to false alarms.
- Improve SOC/security personnel performance by allowing them to focus on real events of interest and provide additional services.
- Improve overall safety and security through automatic detection, analysis, and reporting.
- Deliver implementation versatility in the Cloud or locally for one, some, or all networked security cameras.



Privacy Protection



The heightened level of situational awareness and risk mitigation provided by viisights solutions is further complemented by the inherent ability of their behavioral analytics to ensure personal privacy protections. This is accomplished by analyzing the general behavior patterns of individuals, groups, vehicles, and traffic-flows without identifying faces or license plates. For high-security or law enforcement applications that require identification and authentication functionality, viisights behavioral analytics can be integrated into systems employing face and license plate recognition solutions.

Key Advantages



Actionable Intelligence

viisights patented video understanding technology employs cognitive computing and holistic video analytics to understand video more like humans do and deliver intelligence in real-time. A breakthrough in video analytics technology, viisights provides actionable intelligence on the events that matter most to help minimize potentially dangerous situations, reduce liabilities, mitigate risks, and help maintain compliance to new and emerging mandates.

viisights provides actionable intelligence on the events that matter most.



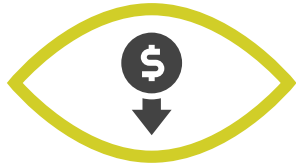
Autonomous Operation

viisights provides the ability to not only automatically detect in real-time what has happened, but to predict events before they occur based on preliminary behavioral patterns. This autonomous functionality enables the user to operate with the goal of preventing events of interest by responding before a scenario escalates.



False Positive Reduction

viisights unique video understanding technology makes critical decisions based on a sequence of images in a sliding window of up to 3 seconds – not a single image. This technique dramatically reduces false positives and increases the recall rate, which increases personnel and SOC efficiencies while reducing costs.



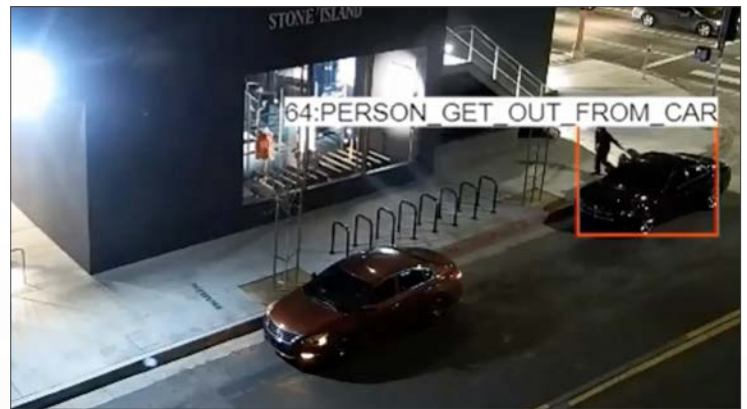
Tangible ROI

In addition to cost-reductions associated with false alarm reduction, viisights behavioral analytics offer a low cost of entry by leveraging existing video camera feeds. The analytics software solution supports two configurations:

1. Maximizing server utilization – maximum streams per server.
2. Near edge architecture – limited number of streams for low energy consumption device.

“viisights behavioral analytics offer a low cost of entry by leveraging existing video camera feeds.”

viisights behavioral analytics are ideal for a wide range of use cases including safe and smart cities, transportation hubs, banking and financial institutions, corporate campuses, and education campuses.



Learn more by visiting
viisights.com/solutions

BANKING AND FINANCIAL INSTITUTIONS

Why Financial Institutions Should Bank on Intelligent Behavioral Analytics

The global pandemic of 2020, and the new world left in its wake, is ushering in a whole new set of safety and security protocols at highly regulated banking and financial institutions. For example, an individual entering a bank or using an ATM with their face covered would have been a loud and clear cause for concern at



public facing banks and ATMs prior to 2020. Now, individuals entering a bank or enclosed ATM area who are *not* wearing a face mask are identified as a potential health safety threat. This is a new conundrum faced by security and operations management at banks and financial institutions as masks are now all but mandated to enter most facilities, while security personnel need to be able to readily identify potential threats from people purposely looking to shield their identities by covering their faces.

The ability to effectively monitor front-of-house operations also pertains to back offices, cash handling areas and restricted areas. As well, maintaining high security is now compounded by the need to implement new health safety issues to ensure that employees and visitors are properly screened and in compliance with facility or regional government regulations.

In addition to maintaining a strong physical on-site presence at banking and financial facilities, video cameras continue to be one of the primary security technologies implemented to deter criminal activity. Yet even the most advanced HD video cameras with some degree of on-board analytics lack the ability to predict, detect and analyze events and/or abnormalities in behavior that may present potential liabilities. To do so effectively with



conventional video technology, constant vigilance needs to be maintained by live operators who need to watch live camera feeds continuously, and without any distraction and/or interruption. With hundreds to thousands of cameras deployed at most banking and financial facilities, live video monitoring requires a significant investment in personnel or third-party off-site services to ensure constant real-time vigilance... until now.



Built on a foundation of advanced Artificial Intelligence (AI) algorithms, viisights innovative behavioral analytics provide existing video camera systems with the ability to autonomously predict, detect, analyze, and report events of interest to authorized personnel. A fast and easy solution to implement, viisights behavioral analytics provide banking and financial institutions with a new and powerful real-time video analytics tool to cost-effectively improve security, health safety, and business intelligence operations.

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A new benchmark in intelligent video technology, viisights behavioral analytics detect and analyze content in real-time instead of simply classifying objects and their related movements or attributes based on a single event such as motion detection. viisights technology provides actionable intelligence to help prevent incidents from escalating and minimize liabilities. The solutions' unparalleled data analysis capabilities also transcend conventional security applications to deliver true business intelligence.

viisights behavioral analytics accomplish this by “learning” to distinguish between common occurrences like someone waiting for a friend or a bus, to someone suspiciously loitering near an ATM, or two people embracing versus fighting, or someone falling to the ground versus picking something off the floor. All actions that video cameras can clearly capture, but not detect, analyze, and alert security personnel about in real time 24/7/365 – all without any human intervention. This unique and advanced capability is critical in today’s pandemic environment. With faces hidden in most public places, the ability to detect behavior allows security teams to react to events of interest in real time. viisights intelligent behavioral analytics can also help security operations reduce costly and time-consuming false alarms while greatly increasing situational awareness.



The utility of viisights intelligent behavioral analytics can also be leveraged to resolve many longstanding challenges at banking and financial institutions. Examples include reducing liabilities from false insurance claims, identifying suspicious or misplaced items left behind by customers and vendors, and tracking pedestrian and drive thru traffic to assist in teller/personnel allocation. The versatile behavioral analytics solution can be leveraged for these and evolving operational and business intelligence applications to help sustain smooth and profitable operations.



viisights innovative behavioral analytics also allow banking and financial institutions to cost-effectively leverage their existing capital investment in video camera systems. The low cost of entry provides security and operations management with a long-term, highly-effective risk mitigation solution with a tangible Return on Investment (ROI).

viisights behavioral analytics' benefits include...



Predictive Analysis

To help ensure that potentially threatening situations and/or compliance breaches at banking and financial institutions are automatically detected before they occur or as they are unfolding to prevent them from escalating. Eliminating much of the need for live video monitoring, authorized personnel and system operators are automatically notified as soon as an event of interest is detected.

Examples include:

- Social distancing and mask wearing policy violations
- Suspicious activity such as contextual loitering or objects left behind
- Weapons detection
- A person falling to the ground
- Violent activity
- Crowd size, accumulation, and behavior detection
- Trespassing in or along restricted areas and zones
- Pedestrian and vehicular traffic monitoring
- Outdoor smoke and fire detection
- Environment sensing for noxious fumes/gasses
- Occupancy analytics

ATM Surveillance and Suspicious Activity Detection

viisights behavioral analytics employ advanced AI to detect and understand the context of an event or scene to alert security personnel of unfolding events, violent activities, or more important, behavioral abnormalities indicating that a potentially dangerous situation may soon take place.



This advanced level of predictive analysis provides security personnel with a huge advantage. Consider an individual lingering in the vicinity of an ATM, which is an activity that may otherwise go completely undetected by conventional video technology until an incident occurs. viisights innovative behavioral analytics learn and recognize such suspicious behaviors, and automatically alert authorities to take a closer look before a situation arises.

“viisights innovative behavioral analytics learn and recognize such suspicious behaviors (i.e. lingering), and automatically alert authorities to take a closer look before a situation arises.”

Weapons Detection

viisights behavioral analytics can recognize a person holding a weapon in a threatening position. The presence of the weapon not being held in a threatening position would not trigger an alert but will be when the weapon is brandished or prepared for use, or a series of identified threatening motions is detected. viisights behavioral analytics recognize and analyze various data points to help distinguish real events from false alarms.





Social Distancing and Group Density Classification

The global pandemic has stimulated the need to carefully monitor and control how many individuals occupy public and back-office spaces at any given point in time. viisights behavioral analytics can determine group density (classified as "low", "medium" or "high") to enforce social distancing mandates during public health emergencies and pandemics. When leveraged by banking and financial institutions, this solution can be used to estimate teller line wait times

and individuals' proximity to each other for public health preservation. It can also provide historical analysis to help plan staff allocation during peak traffic times.

Protect Restricted Areas from Unauthorized Personnel

Banking and financial institutions typically endure continuous activity with numerous customers and personnel moving about publicly accessible and restricted areas. This poses a significant challenge for security personnel tasked with monitoring numerous cameras in real-time. viisights adds video intelligence to conventional camera systems with the ability to autonomously identify when unauthorized personnel have entered secured areas, effectively increasing security and health safety.

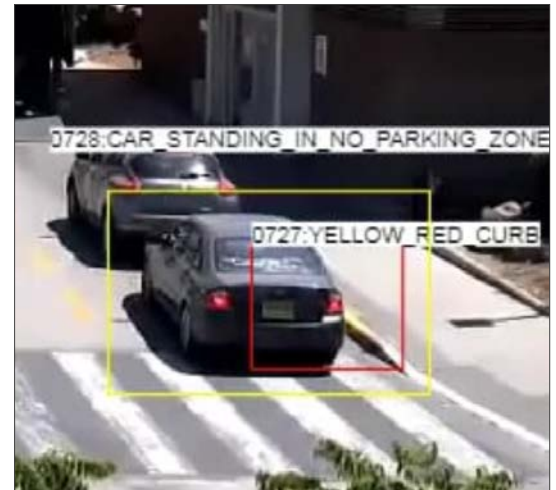


Improve Emergency Response Times

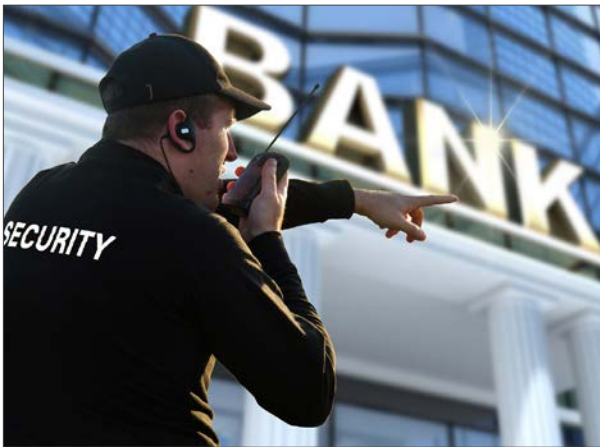
viisights behavioral analytics notify authorized personnel to initiate action the instant a defined event of interest or an imminent threatening situation is detected. This unique ability to detect behavioral related situations and dispatch first responders in all but real-time greatly reduces response times to potential and active events which can help to better protect people, property and assets and minimize exposure to liabilities.

Improve Vehicular Mobility and Safety

Traversing banking and financial institutions' busy drive thru lanes and parking lots can be a real challenge and liability for security and facility management responsible for the safety of customers and employees. viisights intelligent behavioral analytics can help improve pedestrian and vehicular safety and traffic fluidity by instantly detecting abnormalities such as car and pedestrian accidents, vandalism, theft, and overcrowded parking lots and drive thru lanes by notifying security personnel to take remedial action.



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Reduce False Alerts and Alarms

viisights behavioral analytics makes decisions based on a sequence of images in a sliding window, not a single event. This method of analysis helps to dramatically reduce false alarms, effectively increasing personnel efficiency while lowering operating costs. Eliminating false and nuisance alarms also allows security and operations staffers to focus on real events of interest and other services they otherwise would not have the time to provide.

Leverage Existing Investments in Video Technology

viisights behavioral analytics offer a low cost of entry by leveraging existing investments in video surveillance cameras and technology. The innovative behavioral analytics solution also offers versatile configuration options to maximize server utilization with near edge architecture.



A Scalable, Future-proof Solution

viisights behavioral analytics are infinitely scalable to accommodate even the largest banking and financial institutions and video surveillance and security networks. Any number of cameras can be implemented and added at any time to accommodate your timing and budgets.



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Learn how banking and financial institutions can capitalize
on intelligent behavioral analytics by visiting
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