Inside This...

VertexPlus TruEye

TruEye is a Video Analytics Application that empowers users to extract value from their mass of video surveillance content through integration of machine learning models for surveillance insights. It's a simple, clean, straight-forward, user-friendly application that delivers insights that help in expediting investigations, have more situational awareness, and enhance operational efficiencies.

Currently, below ML models are available for deployment:

1. Intrusion Detection
2. Tamper Detection
3. Tripwire Identification
4. Crowd Detection
5. Face Recognition
6. Mask Detection
7. Safety Gear Detection
8. Fire and Smoke Detection
9. Loitering Detection
10. Object Tagging and Tracking
11. Noise Detection
12. Vehicle Speed Detection
13. Footfall Count

There are several models under development and training. The range of our Video Analytics models continue to advance, along with technology advancement, market adoption and requirements for Video Analytics solutions.

The models under-development and training follow long-term roadmap of our product vision. We're also open to develop and deliver new models specific to case in hand, as part of contract binding both the parties, i.e. VertexPlus and the Clients of VertexPlus.

Request a Demo to see how these models operate.

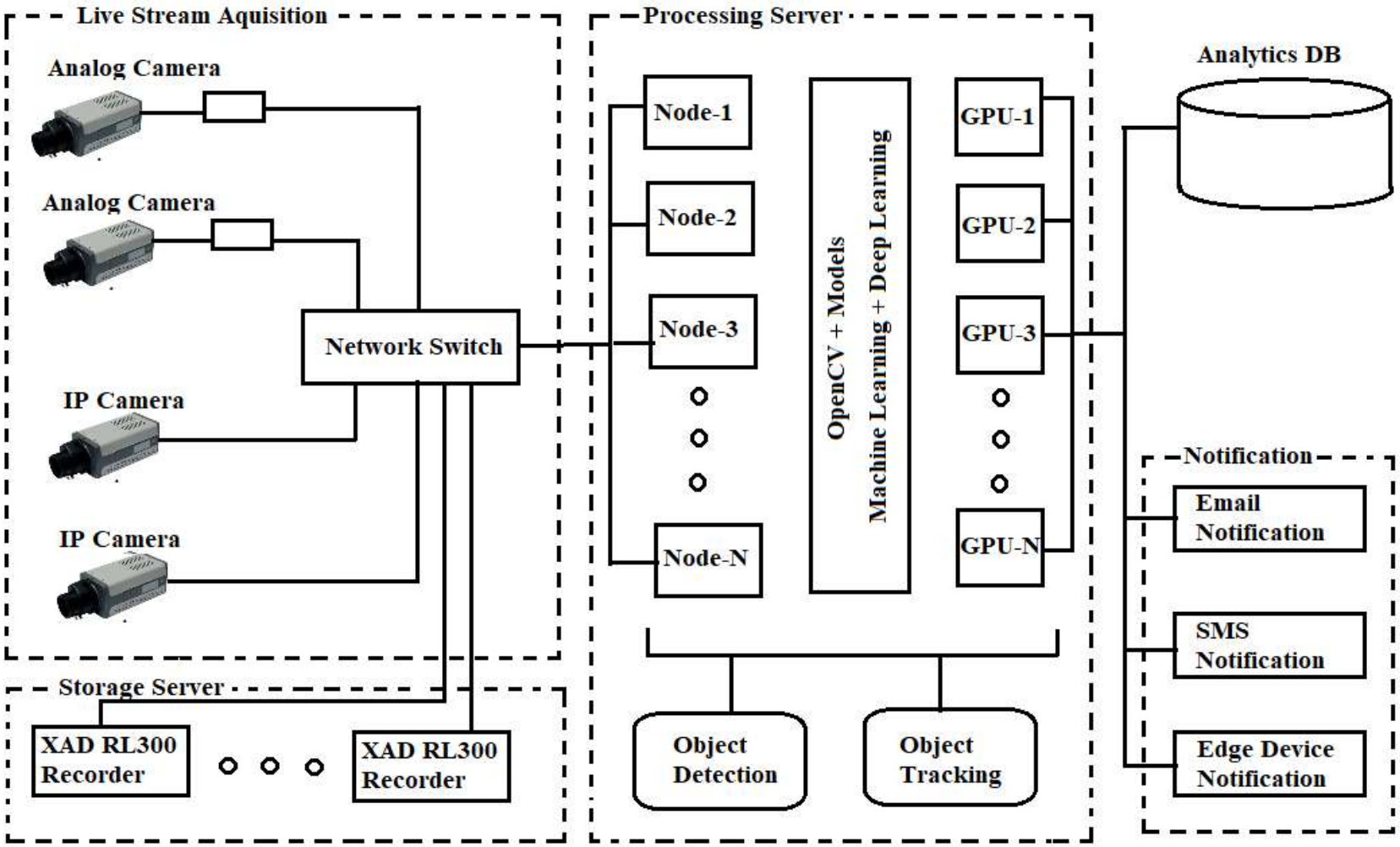
Request a Proposal by mailing us your RFP. To get started, RFP points are also given in the Prime Guide shared.

Additionally, we can together detail out, what we find necessary to give you most effective propositions for your need, in Proposal Draft.

Fundamental

Video Analytics Architecture

that gets further detailed, scaled and customized as per use case scenario



Frequently requested models in our system that help in Industrial scenarios

Intrusion Detection

An intrusion might involve a person or object entering a specified restricted area during a specified time of the day. The system takes the camera feed frame by frame in real time and analyze each frame, identifying instances of intrusion in the monitored environment This detection can trigger alerts or actions to notify security personnel or take preventative measures.

For ex. in the industry, if the closing time was 7pm; and if In case a person is detected on specified camera, an alarm is triggered. Mail is sent along with snapshot of the feed and other details like camera name, time etc.

Frequently requested models in our system that help in Industrial scenarios ...

Crowd Detection

Crowd detection involves counting individuals within a scene by taking the feed. The user sets a minimum count threshold for crowd size, and if the number of people detected surpasses this threshold, the system generates alerts or notifications to prompt further investigation or action by security personnel.

Safety Gear Detection

Algorithm detects safety gear worn by individuals within the monitored environment. Operating in real time, the system analyses frame of the specific camera feed to identify specific safety equipment such as helmets, vests, and more. Thus, ensuring that the staff is wearing safety gears around tasks where there is threat to safety, in events of accidents.

Frequently requested models in our system that help in Industrial scenarios ...

Fire and Smoke Detection

The model operates by continuously capturing and processing real-time camera feeds, analysing each frame for the presence of fire or smoke within a designated area. Upon identification of such instances, the system promptly triggers alerts or predefined actions to notify security personnel.

In this industrial case, the company uses combustible substances. So, if fire or smoke was detected, an alarm triggers to stop it or control it at initial stage.

Camera Tampering and Tripwire Detection

In our surveillance model, it analyses changes in frame characteristics, such as sudden shifts in brightness, sharpness, or perspective, which may indicate tampering activities. Upon detecting such activity, the system generates alerts or notifications to prompt further investigation or action by security personnel. In case anyone tries to hide the camera view by blocking or disturb the camera by tilting it etc.; Also if someone cuts the wire of a camera, or there is some network issue such that we can't get the feed, alert is sent.

Frequently requested models in our system that help in Industrial scenarios ...

Loitering Detection

The algorithms detect and track individuals exhibiting loitering behaviour, within specific areas of interest. System initiates tracking when someone remains within a designated area for an extended period more than the defined time, an alarm is triggered. If the duration exceeds a predefined threshold, an alert is triggered to notify relevant personnel or authorities.

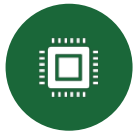
Object Tagging and Tracking

The system detects and labels objects of interest within the camera feed, enabling precise identification and tracking. Utilizing techniques like bounding boxes and unique identifiers, objects are tagged for continuous monitoring as they move across frames. This real-time tracking facilitates accurate assessment of spatial coordinates, velocity, and other relevant attributes, empowering the system to detect anomalies and prompt timely alerts or interventions.

Indeed, video analytics solutions have the potential to benefit the industries in numerous ways. Here are some key points highlighting the significance of video analytics in industrial scenarios:

Safety Monitoring:

Video Analytics can be used to detect unsafe behaviours or situations in real-time, such as workers not wearing proper safety gear, unauthorized personnel entering restricted areas, or potential hazards on the production floor.



Machine Failure Prediction:

By analysing video feeds from machinery, anomalies in operation can be detected early, allowing for predictive maintenance to prevent costly downtime due to unexpected breakdowns.

Quality Control:

Video Analytics can inspect products on the assembly line for defects, ensuring that only high-quality products make it through the manufacturing process.

Inventory Management:

By analysing video feeds of warehouse shelves, inventory levels can be monitored in real-time, helping to optimize stock levels and prevent stockouts or overstock situations.

Supply Chain Optimization:

Video Analytics can track the movement of goods within the manufacturing facility and throughout the supply chain, identifying inefficiencies and bottlenecks for optimization.

Energy Efficiency:

Analysing video feeds from the production floor can help identify areas where energy consumption can be reduced, leading to cost savings and environmental benefits.

Workforce Management:

Video Analytics can monitor worker productivity and identify areas where workflow can be optimized, leading to increased efficiency and throughput.

Security Surveillance:

In addition to traditional CCTV monitoring, video analytics can detect suspicious behaviour or intruders in real-time, triggering alerts for immediate response.

Now as you know why Video Analytics is required for monitoring safety and to provide work efficiency, let's look concisely how this works, with some most common types of Video Analytics

Data Acquisition:

The process begins with capturing video footage using surveillance cameras strategically placed throughout the monitored area. These cameras continuously record activities and events within their field of view.

Data Pre-processing:

Before analysis, the raw video data may undergo pre-processing to enhance its quality and usability. This may involve tasks such as noise reduction, image stabilization, and compression.

*(continues)...*some most common types of Video Analytics

Algorithm Application:

Video analytics applies specific algorithms to the processed video data to perform security and safety-related functions. These algorithms fall into several categories:

- **Fixed Algorithm Analytics:** These algorithms are predefined and programmed to perform specific tasks, such as detecting motion, tracking objects, or recognizing predefined patterns or behaviors. They operate in a deterministic manner and are designed for well-defined tasks.
- **Facial Recognition Systems:** Facial recognition algorithms analyze facial features captured in the video footage to identify and verify individuals. These systems compare facial patterns against a database of known faces to recognize specific individuals or detect unauthorized persons.
- **Artificial Intelligence Learning Algorithms:** AI-based algorithms, including machine learning and deep learning models, enable video analytics systems to learn from data and improve their performance over time. These algorithms can adapt to changing environments, recognize complex patterns, and detect anomalies with high accuracy.

Event Detection and Notification:

Event Detection and Notification: Video analytics continuously analyzes the video data in real-time to detect suspicious or unwanted behavior within the camera's field of view. When an event of interest is identified, such as unauthorized access, intrusion, or safety hazard, the algorithm triggers an alert or notification to notify operators or security personnel.

Response and Intervention:

Upon receiving an alert, operators or security personnel can take appropriate actions based on the nature of the detected event. This may involve dispatching security personnel to the location, activating alarms or sirens, or initiating automated responses such as PTZ camera tracking or access control lockdown.

Feedback and Improvement:

Video analytics systems often incorporate feedback mechanisms to continuously evaluate and refine the performance of the algorithms. This may involve human intervention to review flagged events, provide feedback to the system, or retrain machine learning models based on new data.

Having now a summary of the significance of this technology in industrial scenario and also how it operates; Let's delve further into why it is so crucial

Enhanced Safety Measures:

It enables the detection of safety measures such as Personal Protective Equipment (PPE) compliance, including hard hat, safety belt, face mask, glove, and jacket detection. By monitoring and ensuring workers' adherence to safety protocols, video analytics helps mitigate risks associated with hazardous gases, damaged safety equipment, electric damage, and perilous actions, thereby promoting a safer work environment.

Unauthorized Access Management:

Video Analytics, including face recognition technology, allows for the management of unauthorized access to restricted areas within manufacturing facilities. By only permitting authorized personnel to enter designated areas and raising instant alarms for unauthorized access, video analytics helps prevent theft, deceitful activities, and security breaches.

AI for Quality Assurance:

This technology plays a crucial role in quality assurance by monitoring equipment conditions, detecting damage or anomalies, and sending alert notifications to monitoring personnel. Additionally, it can be utilized for conveyor belt monitoring, level detection of molten metal, spillage detection, jamming detection, material quality monitoring, temperature checks, measurement, and color recognition, ensuring product quality and minimizing defects.

Logistics Management:

It facilitates efficient logistics management by automating tasks such as counting the number of boxes, recognizing vehicle number plates, identifying vehicle types, monitoring in-out times during loading/offloading processes, and providing assistance to commercial drivers. By optimizing logistics operations, video analytics helps streamline supply chain processes and improve overall efficiency.

The key benefits to the industrial scenarios outlined

Cost Saving: Implementing video analytics solutions can help reduce operational costs by replacing traditional security measures, such as guards, with automated video surveillance systems. This leads to cost savings by eliminating the need for manual monitoring and reducing the reliance on human resources.

Time-Saving: Real-time video surveillance provided by video analytics systems allows for quick detection and response to any movement or activity within the manufacturing facility. This saves time compared to traditional safeguards, enabling faster identification of potential issues or threats.

Productivity: Automation of manufacturing processes through video analytics can significantly enhance productivity by streamlining operations, minimizing downtime, and optimizing resource utilization. This allows companies to manufacture quality products in less time, thus increasing overall productivity.

Risk Reduction: Video analytics helps mitigate risks by continuously monitoring critical hazards within the manufacturing environment with high accuracy and efficiency. By promptly identifying safety issues or potential hazards, companies can take proactive measures to prevent accidents and ensure a safer working environment.

Theft Reduction: Video analytics software enables companies to protect their products and equipment from theft by providing continuous monitoring and surveillance. By detecting unauthorized access or suspicious activities in real-time, video analytics helps deter theft and minimize losses.

Accuracy: With video analytics, manufacturing processes can achieve higher levels of accuracy compared to manual methods. By automating tasks such as product measurement, quality control, and monitoring, video analytics ensures consistent and precise results, leading to improved product quality and customer satisfaction.

Frequently Asked Questions (FAQs) by industrial and manufacturing businesses, about Video Analytics

Q: Where is Video Analytics used?
A: Video analytics is utilized in various environments, including warehouses, offices, retail stores, industrial facilities, healthcare settings, and public spaces. Any location equipped with CCTV cameras can benefit from video analytics solutions.

Q: What are common application areas for Video Analytics?
A: Common applications of video analytics include facial recognition, people monitoring for attendance or security purposes, surveillance and security monitoring, equipment monitoring for predictive maintenance, object detection and measurement, product counting for inventory management, and logistics management for tracking movement of goods.

Q: Why do we need Video Analytics?
A: Video analytics eliminates the need for manual monitoring by analyzing CCTV footage and providing alerts or notifications for aberrations or security threats. It enhances situational awareness, improves response times, and enables efficient monitoring and management of various activities and processes.

Q: How does Video Analytics improve security?
A: Video analytics enhances security by continuously monitoring for unauthorized access, detecting suspicious activities or behaviors, and providing real-time alerts or notifications to security personnel. It enables proactive measures to prevent security breaches and ensures a safer environment.

Q: Can Video Analytics be used for operational efficiency?
A: Yes, video analytics contributes to operational efficiency by automating tasks, optimizing processes, and providing insights for decision-making. It helps streamline operations, minimize downtime, and improve resource utilization in various industries and applications.

Q: How does Video Analytics contribute to inventory management?
A: Video analytics facilitates inventory management by counting products on shelves, tracking inventory movement, and optimizing logistics operations. It ensures accurate inventory levels, minimizes stockouts or overstock situations, and improves overall efficiency in warehouses and distribution centers.

Overall, video analytics deployment at the industrial sites and scenarios offers several advantages, including improved safety measures, enhanced security, enhanced quality control, and optimized logistics management. By leveraging video analytics solutions, they can ensure compliance with safety regulations, reduce operational risks, enhance productivity, and feed their maintenance and levelling up of competitive edge in the market. As technology continues to advance, video analytics will remain a vital tool for optimizing manufacturing processes and driving business success.

Let's wrap it up...

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About

VertexPlus Technologies Limited

A Global Technology Company delivering differentiated, innovative, cost-effective, insight-driven, operationally excellent services across different industry verticals, to help achieve high performance, transformation, scalability and business agility.

700+
Clients served

1000+
Services & Projects delivered successfully

1250+
Years of Total Experience

350+
Team of Experts

Service Categories

- Technology
- Consulting
- Infrastructure
- Outsourcing
- Digital Media

Solution Categories

- Enterprise
- Business
- E-Governance

We provide innovative technology solution and service models for business impact, through state-of-the-art infrastructure, well-crafted strategy, rigorous execution, and engagement approach.

We combine process proficiency, technical expertise, domain knowledge, innovation, intelligence and more than a decade's experience while navigating through projects of varying scales to deliver quality solutions and services.

With a large pool of highly talented professionals, we always value continuous research and innovation to fulfill dynamic requirements of clients worldwide, including Fortune 500 companies.

VertexPlus always strives to adapt futuristic approaches and technologies to help transform organizations into agile enterprises.

VertexPlus Service and Solution Spectrum

Technology Consulting
Engineering
Automation & Intelligence
Outsourcing
Cyber Security
Cloud Services
Infrastructure
Internet of Things
Digital Experience
Enterprise Security
IT Solutions & Support

Automation & Intelligence

- Data Science
- Intelligent Automation
- Artificial Intelligence
- Video Analytics
- Extended Reality

Digital Experience

- Experience Design Consulting
- Digital Transformation
- Digital Media Assets
- Digital Marketing

Enterprise Security

- Managed Security Services
- Risk Management Consulting
- Security Audits

Engineering

- Enterprise Mobility
- Application Engineering
- Product Engineering
- Integration Services
- Quality Engineering

Infrastructure

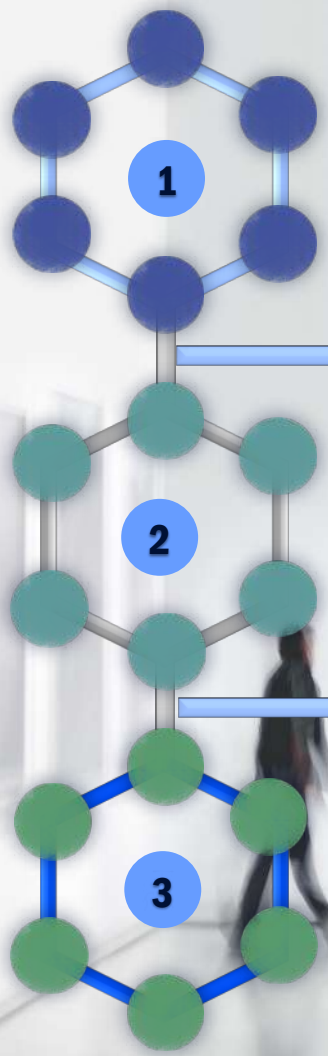
- Managed Services
- Infrastructure Consulting
- Infrastructure Transformation
- Infrastructure Management & Monitoring
- System Integration

Outsourcing

- Business Process Outsourcing
- Workforce Services
- Managed Sourcing
- Software & IT Support

- Video Analytics
- HR & Payroll System
- Point of Sales System
- E-Commerce Solutions
- Asset Lifecycle Management System
- Service Delivery Management System
- Digital Office Management System
- Project Management System
- Consumables & Expense Management System

VertexPlus Value Proposition



Clients

- ❖ Global Best Practices
- ❖ Technology Expertise
- ❖ Domain Competence
- ❖ Always-on Support
- ❖ Business Resilience & Continuity
- ❖ Reliable Infrastructure
- ❖ Data and Information Security
- ❖ Knowledge Management
- ❖ Continuous Improvement
- ❖ Cost-effective Pricing Models
- ❖ Robust Communication engine
- ❖ Quality Practices & Quality Assurance
- ❖ Flexible Delivery Models
- ❖ Resource Scalability
- ❖ Best in-class Tools and Platforms
- ❖ Agile Operational Models

Investors

- ❖ Ease of adaptation to changing scenarios
- ❖ Good ROI
- ❖ Well-defined business model and business plan
- ❖ Established and ever-expanding market, rich with demand
- ❖ Progressive Commercial Traction
- ❖ Business Continuity

Employees

- ❖ Career Advancement
- ❖ Work-life Balance
- ❖ Respect
- ❖ Stability
- ❖ Skill Development Opportunities
- ❖ Growth Rate
- ❖ Innovative Work
- ❖ Recognition
- ❖ Compensation
- ❖ Ethics / Integrity

Key International Clients

AStar Singapore

Align Tech

3D Networks

MVM Infotech Co. Ltd.

Techwork Careers INC

Productivv

Other Valued Clients

Nokia Solutions & Networks India Pvt. Ltd.

NetMD

Paytm Payments Bank

Align Tech

Bharti Hexacom Ltd. (Airtel)

Edfora Infotech Pvt. Ltd.

Advanced Tech Consulting Pvt. Ltd.

Tistabene Retail LLP

Pratham Software Pvt. Ltd.

MVM Infotech Co. Ltd.

DDC Office Bandipore

Rajasthan State Judicial Academy

Department of Archaeology & Museums

Rajasthan Khadi and Village Industries Board

Rajasthan Patrika Pvt. Ltd.

Techwork Careers INC

Productivv

3D Networks

Other Valued Clients

Rajasthan University of Health Sciences

Government of Republic of Mauritius

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