TECH OFFER

AI-Powered Video Search: Comprehensive Analytics for Safety & Security Across Industries

KEY INFORMATION

TECHNOLOGY CATEGORY:
Infocomm - Artificial Intelligence
Infocomm - Security & Privacy
Infocomm - Video/Image Analysis & Computer Vision

TECHNOLOGY READINESS LEVEL (TRL): TRL8
COUNTRY: SINGAPORE
ID NUMBER: TO175156

OVERVIEW

Industries such as retail, transportation, worksites, and law enforcement increasingly demand robust safety and security solutions. Organizations managing multiple CCTV systems and vast video datasets need advanced video analytics for early threat detection, real-time monitoring, and informed decision-making. Cost-effective solutions that ensure data integrity and regulatory compliance are crucial.

Without advanced analytics, organizations face challenges like slow manual reviews, limited real-time alerts, and delayed insights, which hinder timely incident detection and response.

The intelligent video deep search and analytics solution addresses these issues by leveraging AI technologies such as deep learning, computer vision, and NLP. It enables real-time processing, quick text-based searches, and accurate detection of objects and behaviors. The code-free alert system allows for rapid deployment without technical expertise, enhancing surveillance

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capabilities, operational efficiency, and overall security.

TECHNOLOGY FEATURES & SPECIFICATIONS

- **Intelligent Deep Search:** AI-powered algorithms enable text-based searches of unstructured video datasets, enhancing efficiency and situational awareness.
- **Real-time Processing and Monitoring:** Advanced deep learning instantly processes vast video data, providing immediate access to information and improving real-time situation awareness for rapid response.
- **Accurate Detection and Early Warnings:** High precision in detecting, classifying, and tracking objects, individuals, and behaviors, with proactive alerts for potential threats.
- **No-code AI Alerts:** User-friendly, code-free alert system powered by NLP allows easy setup of predefined alerts.
- **Pattern Analysis and Decision Support:** Analyzes video data to identify patterns and trends, aiding informed decision-making.
- **Resource Optimization:** Cost-effective solutions optimize resource use without sacrificing performance.
- **Data Integrity, Security, and Scalability:** Ensures regulatory compliance and trust with robust data integrity and security, efficiently managing multiple CCTV systems and large video datasets.

POTENTIAL APPLICATIONS

Two potential applications to showcase the use of the technology are given below.

Transport Hub:In busy transportation hubs, AI-powered video deep search enhances security and efficiency. By inputting simple text prompts like "person with a red backpack" or "suspicious activity near entrance," the system can quickly detect and locate the video frame that identifies persons of interest, lost items, or potential threats. This technology also improves crowd management and passenger flow, boosting overall safety and experience.

Shopping Mall:In shopping malls, video analytics provide key insights into customer behavior and enhance security. Advanced systems monitor foot traffic and peak hours, optimizing store layouts and staffing. They also track customer demographics and behaviors for targeted marketing. On the security side, real-time detection of suspicious activities or unauthorized access enables immediate responses, creating a safer, more efficient environment for shoppers and staff.

MARKET TRENDS & OPPORTUNITIES

The global video analytics market is expected to grow from US$10.1 billion in 2024 to US$22.6 billion by 2028, at a CAGR of 22.3%. Rising safety concerns in sectors like critical infrastructure, transportation, and retail are driving demand for advanced video analytics. The growth of smart cities and widespread IoT adoption further fuel the need for enhanced urban management and safety. Additionally, advancements in AI and deep learning, now more affordable and accessible, are set to accelerate global adoption of video analytics.

UNIQUE VALUE PROPOSITION

- **Search by Text/Image:** A multimodal pre-trained model combines natural language processing and computer vision, enabling advanced searches beyond traditional filtering and keywords.
- **Zero-Shot Learning:** The system quickly and accurately analyzes video content, delivering relevant search results without prior training.

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- **Semantic Understanding:** Capable of identifying persons of interest, objects, scenes, behaviors, actions, and contextual meanings of text.
- **Real-Time Alerts:** Allows no-code input of predefined occurrences via NLP, sending notifications when events happen.
- **Plug-and-Play & Privacy-Preserved:** An on-premise system that requires no additional machine learning, ensuring privacy and ease of deployment.

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