

Case Study:

AI-Powered Crowd Management at Karthigai Deepam Festival – Tiruvannamalai

Introduction

The Karthigai Deepam festival at Tiruvannamalai witnessed one of the largest spiritual congregations in South India this year, drawing an extraordinary number of devotees to the revered Arunachaleswarar Temple and the sacred 14 km Girivalam pathway. Anticipating the massive turnout, the authorities prioritized public safety and operational efficiency by deploying an advanced AI-based crowd management ecosystem powered by the OKEAN® AI Video Analytics Platform. The intelligent system played a crucial role in ensuring a safe, organized, and seamless pilgrimage experience throughout the festival.

Problem Statement

Managing the large and continuous flow of devotees during the Karthigai Deepam festival posed significant challenges for authorities, particularly in maintaining visibility across crowded zones and responding promptly to evolving situations. Traditional monitoring methods alone were insufficient to support timely coordination and effective crowd regulation across the extensive Girivalam route and temple premises.

Use Cases

-  Crowd Density
-  ANPR-based vehicle flow monitoring
-  Person Count
-  Parking Management
-  Traffic Congestion
-  Barricade Crossing

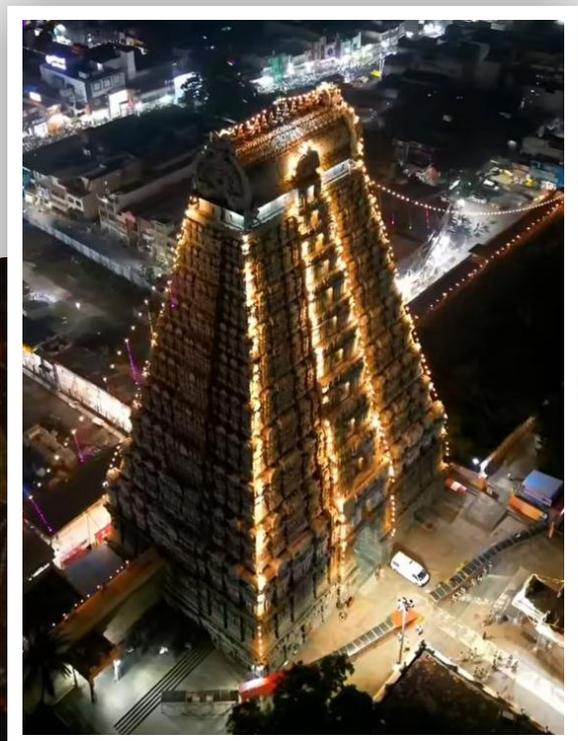


Fig. 2 Karthigai Deepam Festival –Tiruvannamalai



Fig. 1 OKEAN® – AI-Powered Crowd Management

Solution: Impact & Outcome

- Ensured safe and seamless movement of lakhs of devotees throughout the festival period.
- Provided real-time visibility into crowd density and congestion patterns using AI and Business Intelligence–driven analytics.
- Enabled proactive decision-making and timely crowd redirection through actionable and historical insights.
- Enhanced response time and operational efficiency with an intuitive, easy-to-use dashboard.
- Minimized the risk of overcrowding and safety incidents through early congestion detection and preventive measures.

The deployment of OKEAN® AI-based crowd management system at the Karthigai Deepam Festival reinforced the importance of technology-driven governance for public safety.

By combining AI intelligence, centralized monitoring, and timely insights, Tiruvannamalai set a strong benchmark for managing large religious events safely and efficiently ensuring that devotion and safety go hand in hand.



To ensure smooth and safe pilgrim movement during the Karthigai Deepam festival, authorities deployed OKEAN® an AI-enabled crowd management and situational awareness platform across the 14-km Girivalam path, temple premises and surrounding areas.

Using AI-powered video analytics, the system delivered real-time crowd density and people count insights through Business Intelligence dashboards. By combining live and historical data, authorities could understand congestion trends and proactively redirect crowds, preventing bottlenecks before they escalated.

The intuitive AI Intelligence Dashboard enabled faster visualization of crowd build-up, instant alerts, and quicker response during peak hours. Additionally, AI-based barrier crossing continuously monitored restricted zones, instantly flagging unauthorized movements and enabling timely intervention significantly enhancing safety for devotees and on-ground personnel.

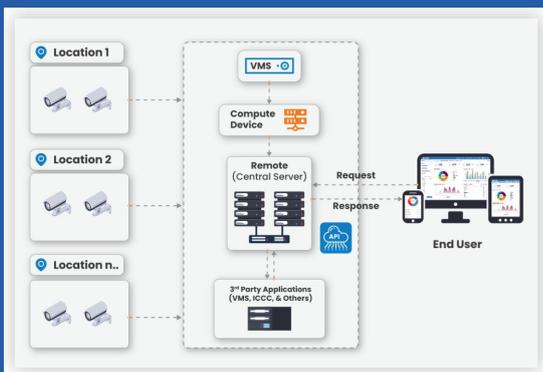


Fig. 3 OKEAN® Architecture Diagram

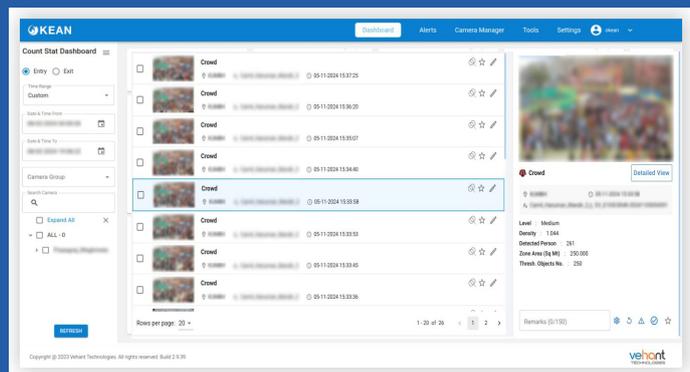


Fig. 4 OKEAN® crowd detection

Media References: www.itvoice.in | www.thehindubusinessline.com