

Case Study:

Enhancing Crowd Detection at Magh Mela, Prayagraj

Introduction

The Magh Mela, an age-old spiritual and cultural gathering, is held annually at the Triveni Sangam in Prayagraj, Uttar Pradesh India. It venerates Lord Brahma, "The Creator," for birthing the universe. It attracts millions of people worldwide to the sacred confluence of the Ganga, Yamuna, and the mythical Saraswati rivers. The festival promises an immersive spiritual journey where devotees come for holy dips, believing in purification and salvation of oneself. The event Magh Mela is not just a religious gathering; it's a cultural spectacle, showcasing rituals, prayers, and discourses by saints & believers. Managing an event of this footfall requires planning, coordination, and innovative solutions to ensure a safe and enriching experience for all visitors.

Problem Statement

The Magh Mela, a prestigious annual event attracts visitors around the globe over a span of 54 days. Anticipating the challenges of ensuring safety and security while managing the vast crowd, particularly during peak hours, the authorities identified potential risks such as congestion, barricade jumping, and people moving in the wrong direction.

These issues introduced significant threats, potentially leading to chaos at entry and exit points. The management recognized the necessity of an advanced solution, to detect a real-time crowd which enhances people's safety, and ensures the event's overall success.



Use Cases



Barricade Jumping



People counting (Entry & Exit)



Real-time Crowd Detection



People & Vehicle Wrong Way Detection



Crowd Detection & Density Estimation

Fig.1 Okean – Enhancing Crowd Management at Magh Mela, Prayagraj

Solution: Enhancing Crowd Detection

Features

- Search & review feature for deep analysis of incidents
- User-friendly web & mobile based UI
- Easy integration with 3rd party systems via APIs
- Various filtering criteria based on time, attribute, or location
- Supports edge as well as central deployment
- A real-time video analytics engine
- Highly scalable and modular software architecture
- Easy & flexible deployment at multiple sites
- Built-in reports & Data visualization



Vehant's Advanced AI Driven Video Analytics Platform

Vehant's team interacted with the client to understand the requirements & proactively address the anticipated challenges during the Magh Mela. OKEAN® an advanced AI-based video analytics solution was deployed at the place. This innovative software provided real-time crowd-detection capabilities while benefiting the event's overall operations & safety. Cases such as crowd detection and density estimation enabled authorities to gain insights into crowd behavior and patterns. This facilitated timely analytics, and resulted in decision-making and the implementation of necessary interventions and actions using the suggested method. The use case incorporated, such as people counting, ensured regular monitoring of entry and exit points, minimized congestion and maintained smooth flow during the event.

The real-time alerts for barricade jumping and wrong-way movements enabled quick responses from the authorities, effectively preventing potential hazards and ensuring the safety of all visitors. Our detection helped authorities identify and enforce standard operating procedures (SOPs) more effectively. As a result, the implementation of OKEAN® not only enhanced crowd detection but also contributed to avoiding chaos, ensuring smooth entries and exits, and reinforcing safety & a secure environment for the millions who attended the Magh Mela.

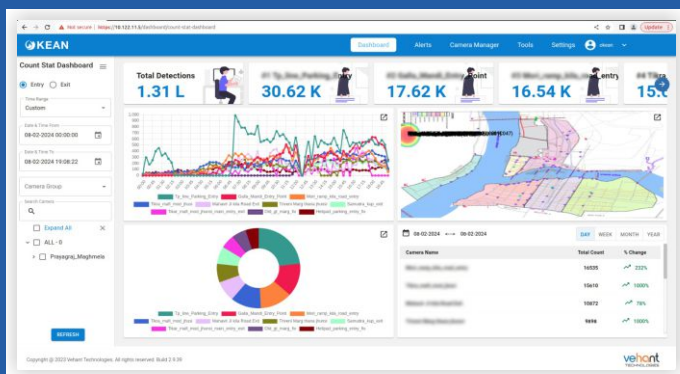


Fig.2 OKEAN interface view

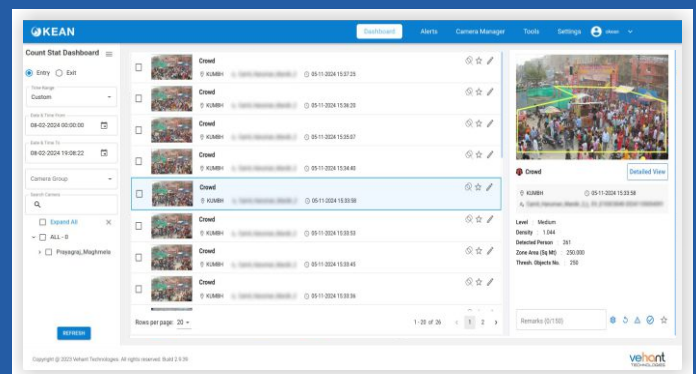


Fig.3 OKEAN crowd detection

<https://www.itvoice.in/smart-cities-safer-events-how-ai-video-analytics-keeps-millions-protected>