

Crowd Analytics

case study

Problem Statement

Mumbai's railway network is one of the busiest in the world, with millions of commuters using it daily. To assess station crowding and plan infrastructure improvements, Mumbai Railway Vikas Corporation (MRVC) previously relied on manual counting methods. Survey workers would sit on platform benches all day, manually counting passengers- an approach that was labour-intensive, prone to human error, and impractical, especially for high-traffic stations like Dadar, Andheri, and Chhatrapati Shivaji Maharaj Terminus. Given the scale of operations, MRVC required a more accurate, scalable, and data-driven solution.



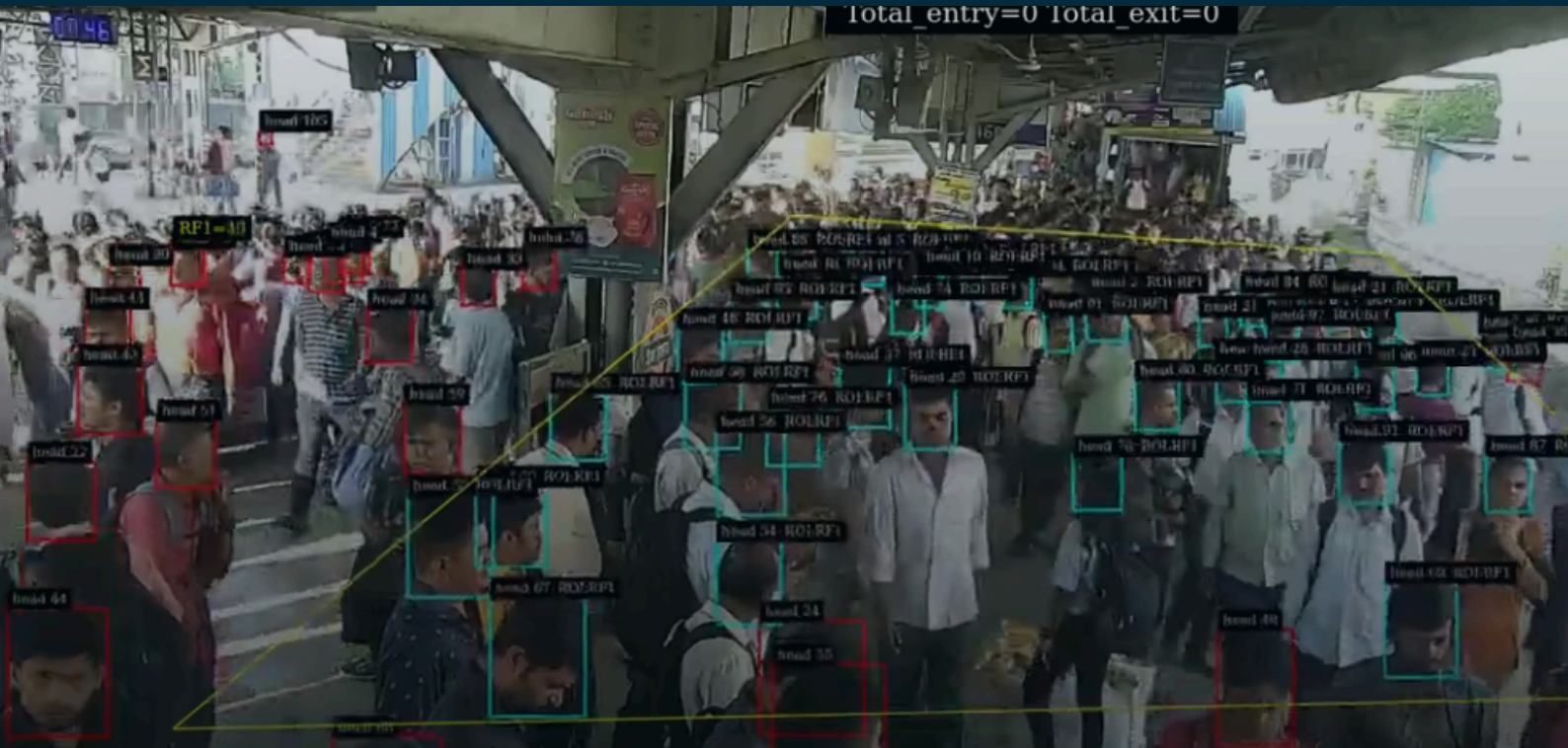
Objective

This project aimed to help Mumbai Railway Vikas Corporation replace manual crowd counting with AI-powered video analytics for accurate, scalable, and data-driven infrastructure planning.



Solution

By leveraging existing CCTV feeds, Assert AI helped identify congestion hotspots and optimize crowd management. This enabled MRVC to add escalators, widen foot overbridges, and improve passenger flow.



ENHANCING PASSENGER FLOW AND SAFETY IN MUMBAI'S RAILWAY STATIONS

Our solution enables data-driven decision-making to optimize railway station operations, improve passenger movement, and enhance safety.

By leveraging advanced AI-powered insights, railway authorities can mitigate overcrowding, streamline operations, and create a more efficient and secure commuting experience.

KEY METRICS DRIVING OPERATIONAL EFFICIENCY



PASSENGER COUNT

Provided insights for better infrastructure planning, including widening platforms and optimizing station layouts, while improving crowd control near escalators and elevators



PEAK HOUR DENSITY

Enabled train rescheduling and strategic platform management to reduce congestion during rush hours



DWELL TIME ANALYSIS

Helped identify overcrowded areas, leading to the addition of waiting zones, improved signage, and better utilization of overhead bridges



QUEUE DETECTION

Led to the installation of additional ticketing kiosks, improved entry/exit flow, and better monitoring of escalator and elevator usage



MOVEMENT HEATMAPS

Guided the placement of new infrastructure such as additional footbridges, enhanced security checkpoints, and optimized allocation of station staff for smoother passenger movement

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