# Real-Time Face Recognition and Occupancy Logging System Using Deep Learning Models

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**Abstract**: *In this modern era, which is becoming more and more reliant on intelligent surveillance systems, our proposed system, 'Real-Time Face Recognition and Occupancy Logging System Using Deep Learning Models' introduces a unified platform for real-time human detection, identification and presence logging based on live camera feeds. The absence of automatic identification and organized log storage in conventional systems often hinders efficiency. Furthermore, many of the systems currently available either lack centralized log availability, easy configuration, integration within existing systems or require expensive hardware. Our system overcomes these drawbacks by using an efficient, scalable and streamlined approach but having comparatively lesser hardware requirements. This system uses YOLOv8 for person detection, DeepSORT for person tracking and InsightFace for face recognition. These faces are compared with previously stored faces and the backend generates a log denoting the occupancy or a presence of a person within a room or a view. These logs are stored in Firebase and with the help of a user-friendly mobile application, people can view the present or past occupancy details and logs. The system is aimed to be balanced between performance and seamless integration into existing systems with minimal hardware requirements*

**Keywords**: Real-time face recognition, YOLOv8, DeepSORT, InsightFace, object tracking, identity association, Firebase Firestore, human detection, face embeddings, surveillance system, automated attendance, AI-based logging, ReID, smart monitoring, computer vision