

AI Powered Campus Surveillance for Mobile Phone and Drowsiness Detection in Restricted Zones

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Abstract: *This project presents an AI-based real-time surveillance system designed to enhance safety and discipline in restricted campus zones. The system integrates YOLOv3-based mobile phone detection and Eye Aspect Ratio (EAR)-based drowsiness monitoring, both deployed on a Raspberry Pi 8GB for efficient edge processing. The camera feed is continuously analyzed to identify unauthorized mobile phone usage and detect signs of drowsiness or inattentiveness among staff or students. When a violation is detected, the system instantly sends a Telegram alert and simultaneously logs the event on a web-based dashboard for monitoring and analytics. By combining computer vision, deep learning, and embedded hardware, this solution eliminates the limitations of manual surveillance and provides a low-cost, automated, and real-time monitoring system suitable for campuses, exam halls, laboratories, and sensitive institutional zones.*

Keywords: AI Surveillance, YOLOv3, Mobile Phone Detection, Drowsiness Detection, Eye Aspect Ratio (EAR), Raspberry Pi 8GB, Computer Vision, Edge Computing, Real-Time Monitoring, Telegram Alerts, Web Dashboard, Campus Security, Object Detection, Deep Learning

