**DECLARATION**

We hereby declare that the Capstone Project Phase - 2 entitled **“Efficient AI-Driven Edge Surveillance using Edge Computing”** has been carried out by us under the guidance of **Prof. Dinesh Singh, Associate professor,** and submitted in partial fulfillment of the course requirements for the award of the degree of **Bachelor of Technology** in **Computer Science and Engineering** of **PES University, Bengaluru** during the academic semester Jan – May 2025. The matter embodied in this report has not been submitted to any other university or institution for the award of any degree.

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**ABSTRACT**

This project presents an efficient edge-AI based CCTV surveillance system designed for medium-footfall institutional facilities. The system leverages existing CCTV infrastructure combined with edge computing devices to perform real-time video analytics without requiring significant cloud resources.

Processing data at edge helps reduce latency for AI based detection, at the same time helping with security and also lowering required bandwidth. Our proposal will use very lightweight computer vision algorithms optimized for deployment on the edge to perform some of the monitoring tasks such as people detection, occupancy tracking, and anomaly detection.

Our proposed architecture allows facilities to upgrade their conventional CCTV systems with the capability for AI, while minimizing infrastructure cost while maintaining data privacy. Key features in the proposal include real time monitoring, local data processing, customizable alerts, and basic analytics reporting.

This system is designed for facilities that have 50 to 500 people coming daily, making it perfect for smaller and medium-sized institutions that want a less expensive, uncomplicated security system without the complexity of cloud-based or server based solutions.

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