CCTV Network For Crowd Management, Crime Prevention

A PROJECT REPORT

Submitted by,

Adithya R - 20211CCS0047

Vignesh G - 20211CCS0054

Greeshma Reddy - 20211CCS0066

Mohammad Travadi - 20211CCS0086

Under the guidance of,

Dr. Vennira Selvi

Professor

School of Computer Science and Engineering Presidency University

in partial fulfillment for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE AND ENGINEERING.

At

GAIN MORE KNOWLEDGE
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PRESIDENCY UNIVERSITY

BENGALURU

MAY 2025

SCHOOL OF COMPUTER SCIENCE ENGINEERING

CERTIFICATE

This is to certify that the Project report "CCTV Network For Crowd Management, Crime Prevention" being submitted by "MOHAMMAD TRAVADI, GREESHMA REDDY, MUBARAK, VIGNESH G, ADITHYA R" bearing roll number(s) "20211CCS0086, 20211CCS0066, 20211CCS0054, 20211CCS0047, 20211CCS0041" in partial fulfillment of the requirement for the award of the degree of Bachelor of Technology in Computer Science and Engineering is a bonafide work carried out under my supervision.

Dr. Vennira Selvi

Professor

School of Computer Science and Engineering

Presidency University

Dr. S P Anandraj

Professor& HoD

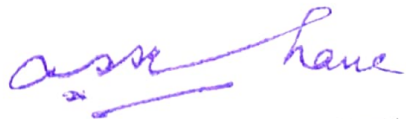School of Computer Science and Engineering

Presidency University

Dr. MYDHILI NAIR

Associate Dean

PSCS

Presidency University

Dr. SAMEERUDDIN KHAN

Pro-Vice Chancellor - Engineering
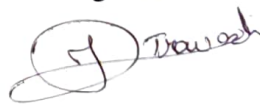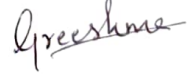
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DECLARATION

We hereby declare that the work, which is being presented in the project report entitled **CCTV Network For Crowd Management, Crime Prevention** in partial fulfillment for the award of Degree of **Bachelor of Technology** in **Computer Science and Engineering**, is a record of our own investigations carried under the guidance of **Dr. Vennira Selvi, School of Computer Science Engineering & Information Science, Presidency University, Bengaluru.**

We have not submitted the matter presented in this report anywhere for the award of any other Degree.

Student Name	Roll No	Signature
Mohammad Travadi	20211CCS0086	
Adithya R	20211CCS0047	
Greeshma Reddy	20211CCS0066	
Vignesh G	20211CCS0054	

ABSTRACT

The efficient administration of public safety in the face of growing dangers and crowded populations has emerged as a crucial issue in today's security environments. Intelligent systems must be integrated because traditional surveillance methods frequently have issues with scalability, reactivity, and real-time analysis. In order to enable real-time crowd monitoring and weapon detection, this project suggests a comprehensive Security Management Suite that makes use of cutting-edge computer vision techniques, particularly the YOLO (You Only Look Once) object detection framework. Security professionals may monitor and manage several detection modules at once thanks to the system's Python architecture and graphical user interfaces built using Tkinter and Custom Tkinter. The crowd management module evaluates real-time video feeds to detect and quantify human presence, issuing alerts upon surpassing defined crowd thresholds and identifying restricted area breaches. Complementarily, the weapon detection module employs deep neural networks to recognize and log the presence of potentially dangerous objects. Integration of features such as automated logging, alerting mechanisms, and multi-threaded processing ensures responsiveness and operational robustness. Preliminary evaluations indicate the system's potential in reducing response times, improving surveillance accuracy, and enhancing situational awareness. Future research may focus on refining detection algorithms, minimizing false positives, and incorporating advanced analytics to support predictive security operations.

ACKNOWLEDGEMENT