IJARSCT



International Journal of Advanced Research in Science, Communication and Technology

International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal

Volume 5, Issue 3, June 2025



Deep Learning Approach for Suspicious Activity Detection from Surveillance Video

D. B. Mane¹, Jayesh Dhumal², Anushka Harle³, Parth Rananaware⁴

Professor, Department of Information Technology¹ UG Students, Department of Information Technology²⁻⁴ Smt. Kashibai Navale College of Engineering, Pune, India

Abstract: With the proliferation of surveillance systems in smart cities, public spaces, and high-security zones, the demand for intelligent and automated monitoring solutions has become increasingly urgent. Traditional surveillance methods are largely reactive, requiring human intervention after an incident has occurred. Such systems are constrained by human attention span and are overwhelmed by the vast amount of video data generated daily.

This study introduces a deep learning-based framework for real-time suspicious activity detection using Convolutional Neural Networks (CNNs). The proposed system analyzes video frames in real-time, learning complex visual patterns to classify behaviors as either normal or suspicious. When an anomaly is detected, the system instantly triggers an alert.

The framework is designed for scalability, delivering high accuracy and resilience across a wide range of environmental conditions, including variations in lighting, crowd density, and scene complexity..

Keywords: surveillance systems

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