

K. K. Wagh Institute of Engineering Education & Research, Nashik

Department of Information Technology

(Academic Year:2024-25)

Project Title: Third-Eye: “Streaming Security in Every Frame.”			
Project Group No.: 7		Guide Name: Prof. Rupali M Bora	
GROUP MEMBERS:			
Roll No.	Name of Student	Project Area	Project Platform
19	Devansh Dubey	Computer Vision, Deep Learning, Algorithm Design, Neural Network	Windows Software, Mobile Application.
36	Akshay Khandare		
64	Shruti Shinde		
65	Nishant Singh		
Abstract Content			
<p>In a world of increasing security requirements, real-time detection and control of violent events are needed. The basis of this project is to design a real-time physical violence-detection system. Motivated by the ideas of active deep learning and modern research, it relies on a pre-trained neural network model that is further improved using an instance selection strategy based on uncertainty thresholds. This technology will be integrated with a distributed camera surveillance network in real-time and used to recognize violence occurring in different situations. The product is designed to change security systems from manual and unreliable to an automated, robust, scalable solution to detect physical violence at a distance without the need for human interference with real-time alerts, making the public safer. By using an active learning approach, the system will be based on advanced deep learning techniques, Support Vector Machine (SVM) models, and human skeletal model extraction, which will be used for automatic detection of violent actions in various surveillance systems. A better OpenPose model will be employed to recognize human skeletal structures from the video feeds and solve occlusion using a key points filling algorithm. The morphological and motion traits of these skeletal models will be characterized for recognition, with an enhanced Relief-F algorithm applied and an SVM classifier trained, which will result in excellent classification accuracy.</p>			
Keywords: SVM, OpenPose, Relief-F, Neural Networks, Computer Vision, Active Learning.			
Sign of Guide			

