**PROBLEM STATEMENT:**

The detection of unusual activity in different crowded surroundings is crucial intended for personal safety of the in localities like shopping centers, airports and many other. To this end, there has been significant interest in a smart surveillance system that can automatically detect unusual or abnormal activities.

### APPLICATIONS

For an intelligent video surveillance system, the detection of a human being is important for abnormal event detection, human gait characterization, people counting, person identification and tracking, pedestrian detection, gender classification, fall detection of elderly people, etc.

**Abnormal event detection**

The most obvious application of detecting humans in surveillance video is to early detect an event that is not normal.

**Human gait characterization**

detected humans in walking by extracting *double helical signatures* (DHS) from surveillance video sequences. They found that DHS is robust to size, viewing angles, camera motion and severe occlusion for simultaneous segmentation of humans in periodic motion and labelling of body parts in cluttered scenes.

**Person detection in dense crowds and people counting**

Detecting and counting persons in a dense crowd is challenging due to occlusions, used *multiple height homographies* for head top detection to overcome this problem.

**Person tracking and identification**

A person in a visual surveillance system can be identified using face recognition and gait recognition techniques. The detection and tracking of multiple people in cluttered scenes at public places is difficult due to a partial or full occlusion problem for either a short or long period of time.

**Gender classification**

Gender classification is another application of human detection in surveillance cameras. The classification could be carried out by fusion of similarity measures from multi-view gait sequences exploiting separability of features from different views and training a linear SVM classifier based on the averaged gait image

**Pedestrian detection**

Pedestrian detection is another important application of human detection, a pedestrian detection system that integrates image intensity information with motion information.

**Fall detection for elderly people**

Automatic detection of a fall for elderly people is one of the major applications of human detection in surveillance videos.

**ADVANTAGES**

The advantages of the unusual crowd detection include faster processing, automation of the identity, breach of privacy, massive data storage, best results, enhanced security, real time face recognition of people in crowd’s areas and colleges, employees at corporate offices, and many more in day to day life.

**DISADVANTAGES**

Few disadvantages in this system include the costing, or the funding, very good cameras of high definition are required, poor image quality may limit the effectiveness of this system, size of the image will matter because it becomes difficult to recognize the face in small images, Face angles can limit the face recognition reliability, massive storage is required for this system to work effectively.

**MOTIVATION**

In public spaces, suspicious activity is unsafe, and may cause significant causalities. Different systems are built on the basis of the acquisition of video frames where motion or pedestrian detection occurs, but those in real time, computers are not intelligent enough to detect suspicious behaviors. For video monitoring and urgent management before any injuries, it is important to identify the scamper situation in real time.

**SCOPE**

Human activity recognition plays a significant role in human-to-human interaction and interpersonal relations. Because it provides information about the identity of a person, their personality, and psychological state, it is difficult to extract. The human ability to recognize another person’s activities is one of the main subjects of study of the scientific areas of computer vision and machine learning. As a result, many applications including video surveillance systems, human-computer interaction, and robotics for human behavior characterization, require a multiple activity recognition system. In image and video analysis, human activity recognition is an important research direction.