

MOVEMENT DETECTION SECURITY CAMERA¹B.BALAKRISHNA, ²MD.ASMA, ³K.RAJU, ⁴SRAVANI, ⁵SARTHAK¹Assistant Professor, EEE Department,CMR College of Engineering & Technology²Assistant.Professor, CSE Department,CMR College of Engineering & Technology³Assistant Professor, ECE Department,CMR College of Engineering & Technology⁴⁻⁵B-TECH,Dept.of CSE, CMR COLLEGE OF ENGINEERING & TECHNOLOGY**Abstract**

In Today's world, security is one of the major concerns of every household owner, shop owner or any office owner. The acts of theft and robbery are growing each day resulting in huge loss to such owners. The use of CCTV cameras has played a huge role in helping the owners to know who the intruder was. The potential of image processing can be used to enhance the role of CCTV cameras to generate an alert to the concerned owners or the police officials whenever an intruder is detected in the owners' area. The project aims at developing a security alert system based on motion detection and face recognition techniques in image processing. The frames captured by the camera are analysed to detect the presence of any motion and if the motion is detected for a particular time frame, the intruder's face is matched with the authorized database of persons provided by the owner of the place using face recognition techniques. If the intruder's face is not matched with any other in the database, an alarm is generated and the intruder's image is sent to the concerned owners and security officials. The Basic Idea Behind "Smart Web Cam Motion Detection Surveillance System" Is to Stop the Intruder to Getting into The Place Where a High-End Security Is Required. This Paper Proposes a Method for Detecting the Motion of a Particular Object Being Observed. The Motion Tracking Surveillance Has Gained a Lot of Interests Over Past Few Years. This System Is Brought into Effect Providing Relief to the Normal Video Surveillance System Which Offers Time-Consuming Reviewing Process. Through The Study and Evaluation of Products, We Propose a Motion Tracking Surveillance System Consisting of Its Method for Motion Detection and Its Own Graphic User Interface. Various Methods Are Used in Motion Detection of a Particular Interest. Each Algorithm Is Found Efficient in One Way. But There Exits Some Limitation in Each of Them. In Our Proposed System Those Disadvantages Are Omitted and Combining the Usage of Best Method We Are Creating a New Motion Detection Algorithm for Our Proposed Motion Tracking Surveillance System.

Keywords: CCTV, Smart web camera, Security alert system, Authorized database, Face recognition technique, Graphic user interface, Motion Tracking Surveillance System.

1. INTRODUCTION

First step in visual surveillance system includes motion detection. Motion detection segments the moving foreground object from the rest image. Successful segmentation of foreground object helps in the subsequent process such as object classification, personal identification, object tracking and activity recognition in the video. Our aim is to build a low cost and powerful security camera to detect movement of objects and things. Easy to use because this device sends the photo of detected object to the user. It is a security camera that only records when it detects motion in its field of vision. There are two types of motion cameras, software-based motion, and passive infrared (PIR). PIR uses hidden infrared cameras that detect body heat. So when a warm body crosses the area, the ambient infrared energy levels will change rapidly and it triggers the motion alerts, causing it to record and possibly send an alarm to you. Software-based compares pixel changes between consecutive frames. So if someone passes by, the pixels will be checked and the motion alerts will be triggered.

2. RELATED WORK

Whenever a Robbery occurred in a particular area it is difficult to find the robbers because there is no immediate intimation of the robbery even if there is a CC camera. So to overcome this problem

we came up with a solution “**Movement Detection Security Camera**”. You won't have to spend time watching your recorded footage or camera constantly, instead, your camera will either only record or send an alarm when its motion sensors are triggered. This allows you to be able to do things freely without having to check back on your camera constantly. Recording everything will cause your camera's allocated storage to be filled very quickly so having motion detection camera is a good way to keep your recordings for a long time only when the motion sensors are triggered. As this motion detection camera only records when the motion is triggered, you won't have to watch through the entire recording or even risking skipping something important to you. When the owner of a particular house or an area is not present there and then if there are any important documents stored in that area, if he wants to secure that particular documents, then this is the best method to store them safe. There are many ways to find the robbers which take much time to do so. If there are such solutions, we are sometimes unable to find the problem occurred even if we have existing solutions where they have little drawbacks. Now with the upcoming project we came up with a solution for the above problem.

3. IMPLEMENTATION

Motion detection categorized into three major classes of method as frame differencing, optical flow, and background subtraction.

- Frame differencing is a pixel-wise differencing between two or three consecutive frames in an image sequence to detect regions corresponding to moving object such as human and vehicles.
- Optical flow uses flow vectors of the moving objects over time to detect moving regions in an image. It is used for motion-based segmentation and tracking applications.
- The background subtraction is the most popular and common approach for motion detection. The idea is to subtract the current image from a reference background image, which is updated during a period of time.

Motion in the background: Non-stationary background regions, such as branches and leaves of trees, a flag waving in the wind, or flowing water, should be identified as part of the background.

- **Memory:** The background module should not use much resource, in terms of computing power and memory.
- **Shadows:** Shadows cast by moving object should be identified as part of the background and not foreground.

Motion detection is an important tool for securing your business or building. It alerts you when someone is on your property that isn't authorized. Understanding how this technology helps you set up better motion detection regions and alerts, but do you actually know how motion detection works?

When you set up motion detection, you select a region or area to monitor, say a doorway. The way it works is to compare sequential images from your video and if enough of the pixels have changed between those frames, the camera software determines something moved and sends you an alert.

4. EXPERIMENTAL RESULTS

When there is a movement detected by the sensor inside the model then the camera immediately start taking the pictures. Immediately after taking the pictures it will intimate the owner about the incident so that the owner gets alert about incident.



Prototype



Business Model

5. CONCLUSION

Now a days many people are facing security issues. Even if there are presence of camera they can record the incidence but can't share the information. So, to overcome this problem we came up with a solution "**Movement Detection Security Camera**". It is best to use Movement Detection Security Camera to secure the important documents and properties.

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