

# Multiple Objects Tracking and Segmentation in Real Time Video Sequence: A Review

Swati Gavande  
M.Tech Scholar,  
NCOET Nagpur

Prof. Shyam P Dubey  
Asst. Professor & Head  
NCOET Nagpur

Prof. Nilesh Chaubey  
Asst. Professor  
MIET Gondia

**Abstract:-** Digital video is now a day's widespread on the World Wide Web and in multimedia databases. Unfortunately, the usefulness of such large amount of information is limited by the effectiveness of the retrieval method. In image processing image segmentation is very important part. It has various application in medical science, engineering, scientific research and many other areas. The success of image analysis depends on reliability of segmentation but an accurate partitioning of an image is generally very challenging. Segmentation process subdivides the image and should be stop when we reach to the area of interest. Segmentation determines the eventual success or failure of computerized analysis procedure. Motion detection and object segmentation these two are an important research topic for image-video processing and computer vision

**Keyword:** Pyramid segmentation, optical flow method, image tracking

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## I. INTRODUCTION:

The conventional approach to object tracking based on the current image and background image. With image segmentation we can detect all objects in image no matter whether they are moving or not. In this approach we are introducing the **Celmon Detection Algorithm** in which moving object detection involves identification of an object in consecutive frames where as object tracking is use to monitor the movements with respect to the region of interest. As we know text documents are self-describing, digital video does not give any explicit description of its content (see for a review on video indexing). Moreover,

### 1. Motion-Based Segmentation

In imaging application motion arises from a relative displacement between sensing system and the scene being viewed. In this system objects are continuously present in the system and objects also move. The common approach for motion segmentation is to partition the dense optical flow field. This is achieve by

transmission of video requires high compression rates to make it viable. By exploiting the object-based representation offered by MPEG-4 [2], video shots can be encoded as a stationary background mosaic – obtained after compensating for camera motion – plus moving objects (MOs) represented individually. This allows to achieve a high compression rate in the background (which does not change) are sent only once.

Transmission of the sequence, since all the information about the

decomposing the image into different frame. for this we use two technique

**a) Spatial technique:** - in this technique we compare two images pixel by pixel for example we refer the image containing stationary component comparing this image against subsequent image but including moving object which result in two different frame.

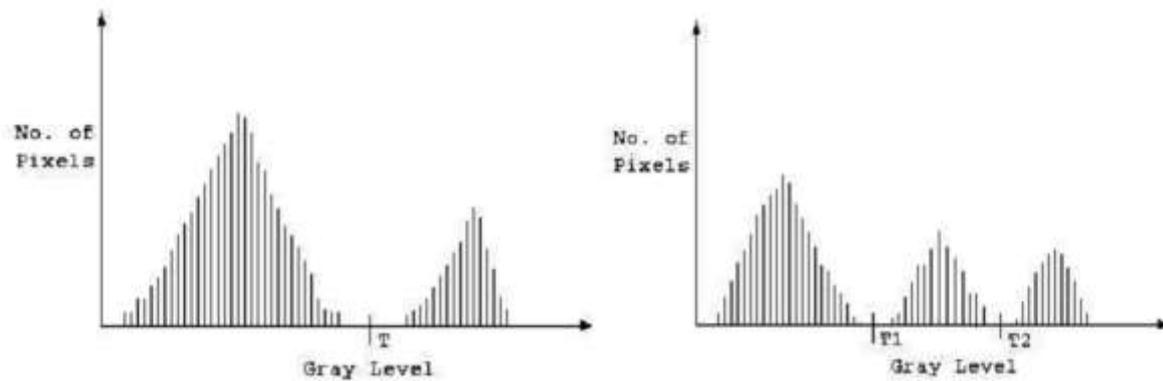


Above fig shows the sequence of 48 frames by the surveillance video at airport  
From left to right are the 1st, 24th and 48th frames. Notice that the escalator is moving  
The objective is to segment the moving people automatically without extra input

**b) frequency domain technique:-**In this technique we consider the problem of determining motion estimate via fourier transform formulation. In other words this

process yields a complex sensoid with frequency.

fig shows the no of pixel having different grey level at different frequency domain



## II. LITERATURE REVIEW

Mostly the thresholding technique is used for the multiple object tracking. It extracts the image and finds the object of the image. It observes the movement of the object and tracks them. Differencing of adjacent frame in video sequencing is used for object detection in stationary cameras. Any motion detection system based on background subtraction need to handle critical situation such as gradual lightning in the scene, small movement of non static object such as objects blowing with the wind, image source ,noisy image due to poor quality of image source etc.

In optical flow method we use velocity field for image segmentation. The area with the motion field is regarded as object and the other area is regarded as background. Hence this method does not require scene information. A simple adaptive filter has been used in to update recursively the statistics of the visible pixels. In the Kalman filter is used to model adaptively the background pixel according to known effects of the weather and the time of day on the intensity values.

### PROPOSED PLAN OF WORK:

In propose plan of work we have following three important procedures:

- 1 Segmentation
- 2 Background Subtraction
- 3 Feature Extractions and Object Tracking

**SEGMENTATION:** this process involves the operation such as thresholding, boundary detection and connected component labeling. The segmentation process is used for image compression, image look-up, image editing and image recognition.

### III. BACKGROUND SUBTRACTION:

This procedure is used to separate the foreground and the background of an image. In which foreground consist of the

object of interest there are different methods for this separation.

- a) **Gap mountain method:** It is used to differ the image that are moving and those are not moving: A gap is a sequence of consecutive Black pixels and mountain is a sequence of consecutive white pixels. If width of a mountain in a particular row is greater than a preset threshold then we assume that a moving object is present in that row.
- b) **Use of difference image:-** In this technique we subtract the objects that are moving and those are not moving .the result will be another grey image called as difference image

**FEATURE EXTRACTION AND OBJECT TRACKING :-** he next step to extract useful from sequence of frame and the features like centred dispersion, grey scale distribution, object texture are used for image tracking.

In this project we use the Calman filtering technique for tracking the moving objects. it identify the position of the moving objects.In multiple thresholding images or objects are tracked.

## IV. CONCLUSION:

We presented a review which produces an object-based representation of a video shot, and, in particular, we addressed the problem of multiple objects segmentation and tracking. We have also proposed new approach for object detection in dynamic background. This approach will suitable for detection of object in indoor and outdoor environment

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