Visual Technique Using Visual Instance Based Detectors

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Abstract- *In the background subtraction technique we will first select the video for which we have to extract the foreground. We will convert the normal video into the grey code. Then we will divide the video into frames. After that we will extract the foreground from the normal video. In the existing system the positive sample will change when we move to different frames and there will be lot of noise in it. In the proposed system the positive sample will remain in the same place even if we move on to the nth frame and the noise production will be less when compared to the existing sample.*

Keywords- Open CV, MAT LAB, Background Detection, Grey Scale, ELDA detectors.

I. INTRODUCTION

One of the most efficient ways to remove the foreground part from normal video is background video subtraction. It is primarily used for foreground object extraction from the background part in video analysis. The output of background subtraction from the normal video is often subjected to analysis by other higher level processes such as object tracking, behaviour analysis, video profiling, face detection, etc., The more computational time and power a particular modelling algorithm reserves, it is said to be a good algorithm.An adaptive background modelling framework for a multi-modal background is also proposed to adaptively update the pattern-less background model. By using this system, it is possible to easily detect the moving objects from the objects that are constant through a sequence of images extracted from the video. The proposed algorithm proves to be an efficient one since it captures both the computational time and also the power in an efficient way.

II. EXISTING SYSTEM

A reference frame is initially used and considered as background information. While a new object enters into the frame, the foreground information and background information are identified using the reference frame as background model. Most of the times, the shadow of the background information is merged with the foreground object and makes the tracking process a complex one.

The algorithm involves modelling of the desired background as a reference model for later used in background subtraction to produce foreground pixel which is deviation of the current frame from the reference frame. In the approach, morphological operations will be used for identifying and removed the shadow. The occlusion is one of the most common events in object tracking and object centroid of each object is used for detecting the occlusion and identifying each object separately. Video sequences will be captured and will be detected with the proposed algorithm.

III. PROPOSED SYSTEM

The proposed system uses the ELDA detectors to detect the background accurately. If we compare the first frame with the second frame, then will not be any changes in the background, only the foreground object changes it position. In a similar way, if we check the first frame and even the nth frame, there will not be any change in the positive sample.

The noise will be reduced in this proposed system as the positive sample is fixed all over the n frames of the video. In this system, the foreground object is the only part of the frame that changes and hence it is detected. The object in the background is constant between 1 to n frames and hence it isn't detected. In this way, only the changes in the sequence of n frames of the video can be detected.

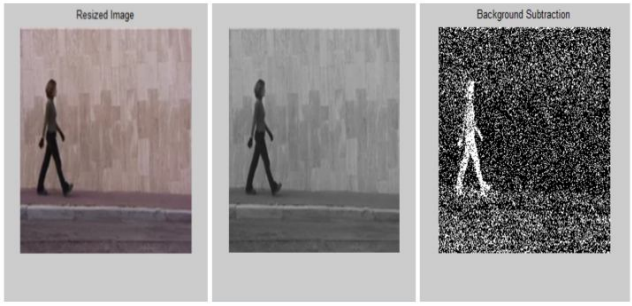

Fig 1 – Foreground object detection

IV. ADDITIONAL FEATURES

The additional features in VISUAL TECHNIQUE USING VISUAL INSTANCE BASED DETECTORSare:

1. Video Acquisition is a process of getting an input video for Background Subtraction.
2. Frame splitting-Split the videos into number of Frames for the process of background subtraction. Because the background subtraction is carried out at frame by frame process of input video.
3. Coarse-to-fine detection theory algorithm based on background and foreground models represented by binary descriptors is used to extract foregrounds. The foreground extraction problem is formulated as coarse-to-fine binary hypothesis-testing problems in the coarse (Region) and fine (Pixel) levels, respectively. By estimating the maximum posterior (MAP) probability of the testing regions and pixels with respect to the hypotheses, we can decide the labels of regions and pixels by using the detection theory.

These are some the additional features that enhance the efficient working of the proposed algorithm.

V. TECHNOLOGY USED

MATLAB is a high level language where there is an interactive environment which is used by millions of the students and the scientists worldwide. This is mainly used for the machine learning, image processing, etc. Built-in graphics make it easy to visualize and gain insights from the data. It also has easy to use graphics commands that make the visualization of results immediately available.

MATLAB code can be integrated with other languages, enabling you to deploy algorithms and applications within web, enterprise and production system. Some applications are collected in the packages and these packages are referred to as the toolbox. The toolbox is also available for control theory, symbolic computation, simulation, optimization, and several other fields of applied science and engineering.

VI. CONCLUSION

This application can be implemented for the right path for the career. The task in tracking is to search for a specific object instance, rather than an object category as in detection. And we believe that object exemplar-based method is more appropriate for visual tracking. Most previous tracking-by-detection approaches considered it as a general object category detection problem. In view of this, we have proposed a new tracking framework based on exemplar detectors, different from the other discriminative tracking-by-detection methods. We build an ELDA tracker by taking exemplars during the tracking process, and updating both the object and background models in an online manner. Consider combining the part-based tracking approach with our method to further deal with some specific challenges, e.g., the OCCs and the object DEF.

VII. FUTURE ENHANCEMENT

We also present some qualitative results in the images with the presence of similar objects, which are pedestrians and faces. It can be seen that our tracker is quite robust for this challenge, in terms of precision and SR.

REFERENCES

[1] Y. Wu, J. Lim, and M.-H. Yang, “Online object tracking: A benchmark,” in Proc. IEEE Conf. CVPR, Jun. 2013, pp. 2411–2418.
[2] 2.J. Kwon and K. M. Lee, “Visual tracking decomposition,” in Proc. IEEE Conf. CVPR, Jun. 2010, pp. 1269–1276.