LEARNING OBJECT MODEL FOR MOVING FOREGROUND OBJECT DETECTION USING REGRESSION METHOD

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Abstract - Changes detection provides a classification of the pixels in the video sequence into either foreground (moving objects) or background. A common approach used to achieve such classification is background removal, sometimes referred to as background subtraction, where each video frame is compared against a reference or background model, pixels that deviate significantly from the background are considered to be moving objects. We propose a classification model that is based upon a small number of correspondences between a candidate value and the corresponding background pixel model. Second, we explained how it can be initialized with a single frame. This frees us from the need to wait for several seconds is to initialize the background model, which is an advantage for image processing solutions embedded in digital cameras and for short sequences. Finally, we presented our last innovation: an original update mechanism. Instead of keeping samples in the pixel models for a fixed amount of time, we ignore the insertion time of a pixel in the model and select a value to be replaced randomly. Key terms - foreground detection, image comparison, matrix construction.

I. INTRODUCTION

Foreground detection is an important task in many vision-based applications like video surveillance, video-conferencing, teleconferencing etc. Primarily, foreground detection is implemented by modeling background with Gaussian model or codebook model. Recently, neural networks (NN) entropy estimation and low-rank model are introduced to foreground detection. Although these methods achieve good results, some challenges still remain.

First, many foreground detection methods model background through a training phase, where the training sequences are assumed to contain no foreground objects. However, the clean training set assumption may be violated when the surveillance cameras are installed in busy areas. In such video streams, the foreground objects may frequently appear in initial frames, influencing background modeling.

Second, dynamic background in video streams may violate the static background assumption, which makes background modeling difficult. When dynamic background and frequently appeared foreground exist together, the problem becomes more challenging.

We aim to address the above challenges by using the regression based foreground detection method. This is done...
by matrix construction and updating the matrix regularly.

II. PROPOSED METHOD

Moving Object Mining

Background subtraction is a popular technique to segment out the interested objects in a frame. This technique involves subtracting an image that contains the object, with the previous background image that has no foreground objects of interest. The area of the image plane where there is a significant difference within these images indicates the pixel location of the moving objects. These objects, which are represented by groups of pixel, are then separated from the background image by using threshold technique.

By analysing the characteristics of motion detection, we combine the projection operator with the previous methods. This can eliminate the impact of the shadow to a certain degree. Then we analyse the vertical projection value and set the threshold value (determined by experience) to remove the pseudo-local maximum value and the pseudo-local minimum value of the vertical projection to determine the number and width of the body in the motion region, we will get the moving human body with precise edge. We assume that people in the scene are all in upright-walking state.

III. BLOCK DIAGRAM

Fig 1. Block Diagram

The data is passed to the database through input screen. Raw video, determine their geolocations, and automatically insert them into a dynamic scene visualization. We have developed robust routines for detecting moving objects and tracking through a video sequence of temporal differencing and template tracking. Detected objects are classified into semantic categories such as human, human group, car, and truck using shape and color analysis, and these labels are used to improve tracking using temporal consistency constraints. Further classification of human activity, such as walking and running, has also been achieved.
IV. SIMULATION RESULT

V. RESULT:

A new method for detecting and tracking moving objects is proposed, where moving objects are identified by their color and spatial information. The proposed method works for static and dynamic background. The correct identification rate highly depends on the correctness of the moving object detection and feature representation to enable new services it enhances the
video monitoring service with the addition of a high performance, continuous video recording solution. The new solution captures a 24x7 stream of what’s happening at a property and provides cloud based streaming and video clip access for 24/7 video recording, bandwidth optimizion.

VI. REFERENCES