A Survey on Stopped Vehicle Detection Using Video Surveillance

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Abstract- Today most of the cities of the world are dealing with advanced electronic systems. This chapter presents a review and systematic study on stopped vehicle detection and surveillance of the video as they are important and challenging task in the present circumstances. Our focus is on systems where the camera or video switching devices is mounted on the vehicle and also being fixed such as in traffic is mounted in the system. The paper also presents the concept of real-time implementation computing tasks in video surveillance systems. In this review paper various methods are discussed were evaluation of order to access how well they can detect moving object in an outdoor/indoor section in real time situation.

Keywords- Support Vector Machine, Stopped Vehicle.

I. INTRODUCTION

Video police work is a vigorous analysis topic in pc vision tries to notice and track objects over a sequence of pictures and it additionally makes a shot to know and describe object behavior by commutation the aging recent ancient methodology of observation small Cameras by human operators Object chase is that the strategy of locating associate object or multiple objects over time using camera[1]. The high supercharged computers, the availability of top of the range and low-cost video cameras and additionally the increasing wish for automatic video.

Object detection or recognition involves locating objects within the frame of a video sequence. Each trailing methodology needs associate objec t detection mechanism either in each frame or once the item 1st seems within the video. Object trailing is that the method of locating associate object or multiple objects over time employing a camera. The high supercharged computers, the supply of prime quality and cheap video cameras and therefore the increasing want for machine-controlled video analysis has generated an excellent deal of interest in object trailing algorithms[2]. There square measure 3 key steps in video analysis, detection fascinating moving objects, trailing of such objects from every and each frame to border, and analysis of object tracks to acknowledge their behavior , that plays a serious role in detection. Therefore, the employment of object trailing is pertinent within the tasks of, motion-based recognition.

II. RELATED WORK

The main objective of the current analysis is to develop AN algorithmic program which will find moving objects at an exact distance for object following applications. The remainder of the paper has been organized as follows: Section two covers the literature survey, section three covers the detection of moving a vehicle, Section four presents the experimental results, section five concludes the paper and references square measure given at the tip. In this review paper, the movements of human during a video is known by exploitation the world GIST feature. This feature is employed to trace the corner of the moving body in every frame. The results for varied videos involving single or 2 Persons square measure summarized. The human movement identification may be a difficult half and that they square measure to be trained with an outsized variety of datasets.

The dataset involves the action of one or 2 persons. The Gist feature descriptor and skeleton detection have sensible potency to search out the versatile movements of the body within the unknown video. Within the future work is to spot the clash and non-clash between 2 individuals or many folks and indicating a censor as violence on the actual clash video. Swat gossans, Jagbir Gill "a novel approach to enhance object detection using integrated detection algorithms" International Journal of Computer Science and Mobile Computing, Image processing plays an important role in the detection of object [3].

The object detection is very necessary. In the object detection many technologies are used. But there are some reasons due to which the detector may face some problems

in object detection. These problems are: congestion, noise effect and so on. Hence to remove these distortions, we are going to use the region prop along with skull detection. It helps to remove the distortions coming while we detect an object. It recognize a particular object not the noise or any other distortion. Tomasz Kryjak, Marek Gorgoń "Real- Time Implementation of Moving Object Detection in Video Surveillance Systems Using Fpga". The article presents the concept of accelerating computing tasks in an advanced video surveillance system and the implementation of background generation and segmentation of moving objects module in a reconfigurable device. Research has shown that the implementation of this type of processing is entirely possible, does not require large FPGA [4] resources and allows to offload the computer's CPU whose processing power can be used in later stages of image analysis.

In addition, the results show that the use of colour images, even though it requires the execution of approximately three times more calculations and use of three times more memory, can improve the performance of the segmentation of moving objects. Rupesh Kumar Rout "A Survey on Object Detection and Tracking Algorithms" Department of Computer Science and Engineering National Institute of Technology Rourkela Rourkela.

In every chapter the object detection and tracking methods are being surveyed. This thesis has examined methods to improve the performance of motion segmentation algorithms and Block matching technique for object tracking applications and examined methods for multi-modal fusion in an object tracking system [5]. Motion segmentation is a key step in many tracking algorithms as it forms the basis of object detection.

Improving segmentation results as well as being able to extract additional information such as frame difference, Gaussian of mixture model, background subtraction allows for improved object detection and thus tracking. However a strength of and aids in main training identity of the tracked object, and provides tracking system with an effective means [6]. The simulator and the simulation parameters used for the experiments are disscussed. We have shown the simulation results in the form of images.

In this paper, the author uses the detecting independent motion using directional motion estimation. Thetechniques expressed in[7] vary from terribly basic a lgorithmic rule to state of the art printed techniques categorized supported speed, memory requirements and

accuracy.
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They used ways like frame distinction techniques, time period background subtraction and shadow detection technique, adaptive background mixture model for time period pursuit technique. They used algorithms range from varying levels of accuracy and computational complexity.
[8] Some of them can also deal with real Time challenges like snow, rain, moving branches, objects overlapping, strength or slow objects. The problems of achieving a high detection rate with a low false alarm rate for human detection and tracking in the video sequences are to maximize performance and improve response time.

A ballroom dancing process resolution that is, human detection, and human tracking with two novel pattern classifiers presented in [9]. There square measure 3 basic phases in video examination: detection of attention-grabbing objects in an exceedingly video scene, tracking of such objects from frame to frame, and analysis of object tracks to recognize their activities. Detecting humans from the video is a challenging problem owing to the motion of the subjects.

In [10] they developed a detector for moving folks in videos with presumably moving cameras and backgrounds, testing several different coding schemes of moving an object and showing that orientated histograms of differential optical flow give the maximum performance. Motion-based descriptors are combined with a Histogram of Oriented Gradient appearance descriptors.
Achieved detector is take a look on many databases includes a difficult test set taken from video and containing wide ranges of position, motion and background imbalance, including rotating cameras and backgrounds.
[11] In [12], they have analyzed moving object detection techniques, frame difference and the approximate median method. The frame differentiating has been adopted for the reference frame and the step length. They have suggested moving object detection and object tracking by using the modified observation. This method is an experiment on almost ten videos and the results are quite satisfactory. Object detection & tracking [13] the background subtraction method which is used for framing the moving object from its background which requires the following steps: a) Reference frame selection (RFS): Init the initial frame is selected as the reference frame.
b) Step Length: applicable step length has been elite on the idea of experimental results.
c) Removing Noise: Noise is affecting the accuracy and performance of the system so it has to be removed. d) Moving object detection (MOD): to detect the moving object from the frame difference with the help of background subtraction methods like Frame difference,

approximate median, and Modified frame difference methods.

e) Suspicious Activity: The bounding box is built within the isolated space of interest from the video sequence and also the object is caterpillar-tracked in step with its movement.

f) Rise alert: After tracking an object the recorded sound will be generate for an alert.

In [14] cascade-of-rejecters approach with the Histograms of oriented Gradients options to attain a quick and correct human detection system. The options used square measure Histograms of selection, it identifies the appropriate set of blocks, from a large set of possible blocks. It uses the integral image illustration and a rejection cascade that considerably speed up the computation [15]. The system will method five to thirty frames per second counting on the density during which it scans the image whereas maintaining associate accuracy level similar to existing methods.

III. CONCLUSION

The literature survey that have done during the research work is related work of many researchers has been discuss the most of research papers related to Moving object detection, human object detection and police work has been shown that is concerning totally different methodology and formula to diagnose the police work of video.

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