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MONITORING AND RECOGNIZING MOVING OBJECTS WITH THE DNN ALGORITHM

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ABSTRACT

Object identification and tracking have become considerably more common in recent years, and for motion detection, video sequences and clusters of the objects' pixels are utilized. The term "moving object detection" refers to a method for identifying an item's actual movement. An efficient method for moving object detection is used in our study effort. Using this technique, video samples in the audio-video interleave format are collected. After that, the frame differencing was developed to separate the video into frames as well as format or extraction. The RGB colour picture has been transformed into three distinct methods, such as red, green, and blue channels. Now The video's noise level will be determined. It has developed the Gaussian filtration method to remove the noise in theuploaded image frames. It has developed the SURF algorithm to extract the features in the key-points format.In our research for the better output we have used the improved deep neural network algorithm. The experimental results for moving object detection is achieved by MATLAB simulation and proposed work parameters have achieved asthe Accuracy value 99.5 per cent, Precision value 0.97, ERate value 0.09, Specificity value 0.98, FPR value 0.0068, sensitivity 0.59.

INTRODUCTION

The object detection technique's main purpose is to identify and find recognized things in a scene. It's crucial for robotic control systems to restore 3D poses. Making robots do arduous and dull work is the ultimate goal for humanity in order to engage in creative endeavours. There hasn't been a solution for this issue in such a long time, but object detection made it feasible. Using object detection to find a single item is quite straightforward Real-time searching and identification are exceedingly challenging tasks. There are several methods. Background subtraction is the most dependable method for tracking an item. object tracking and detection consists of three blocks they are object Detection ,object classification optical flow in frame differencing It subtracts the current image from the previous Frame .background subtraction Subtracts the current image and background Image this approach detect the moving object for static cameras in more efficient ways .because of Higher detection efficiency we are using optical Flow method.

Object classification:

In image processing object classification is Very important for object trackingthese classification Can be done based on four things. They are

- Motion
- Colour
- Texture
- Shape

Object tracking

Tracking means following to find an object i.e., moving. Tracking can be divided into 3 types. Point tracking, kernel based tracking ,silhouette tracking. Thesetracking process is also used for Problem estimation by identification of objects pointtracking is divide into 3 types Kalman Filter, particle filter ,multi hypothesis trackingKernel tracking moving objects are computed These are of 4 types simple template Machine Mean shift method ,SVM layering tracking, Silhoutee based tracking tells the accurate Shape of the object it also specify various type of shapes of objects they canbe split into two type one is Contour tracking ,shape tracking.

EXISTING METHOD

In existing methods used in MOD are currently ,Background Modelling (BM) and Background Subtraction developed the most popular method for MOD in computer Vision (CV), like Object Recognition (OR) and Traffic control Various BackgroundSubtraction Methods (BSMs) have been overviewed, which are divided into metrics and non-parametric models. Yu, 2019 proposed research on the moving object technique for the digital camera. The globalized movement was expected by following the network dependent on the key-points using the Optical Flow (OF). Ultimately, the compensation movement, the user background model and usage were used for the background model.

PROPOSED METHOD

In this proposed method we are using back ground subtraction in this these extracts current frame to the background image in this we are using some filtration techniques like gaussian filter or median filter to reduce external noise in image In this an efficient DNN algorithm is used to get the output.

Deep neural network is an Artificial Neural Network with several layers between input output. DNN has non linear relationship it is a feed forward networks they cannot return the path. Convolution Neural Network is used in computer vision in surfalgorithm is used to fitting the image.

WORKING PRINCIPLE

It takes the .avi format video as a input sequence then go to the frame differencing method in that it divided the video sequence into frames after it goes forpre-processing step. It is used to improve the visual quality of image and noise removal in that converts the image into RGB planes tracking is the process for finding objects .speedup robust network is used for object recognition ad image registration in this neuron network is used to identify the errors then calculate the performance matricesThen compare the actual parameters to the to the previous parameter.

Parameters	Values
Accuracy	0.99
Sensitivity	0.59
Specificity	0.95
Precision	0.92
ERate	0.09

EXPERIMANTAL RESULTS:

Table 5.1: Parameters of the detected object



Figure 5.1 Detection of Moving object



Figure 5.2 Performance

CONCLUSION

Various applications of moving object detection are video surveillance, social movement analysis, robot navigation, video conferencing and traffic analysis. The applications related to the stationary camera but; with the development of the mobile devices research on the moving digital cameras have developed with a period. Various investigated methods have been classified and identified in the surveyed work. The models are classified under the selection of the scene demonstration where, one is plain and other is various parts that include background subtraction, segmented moved digital cameras, sub-region segmentation and fragmented pictures in blocks. In the proposed work, studied various methods for different moving object detection, tracking, and classification

FUTURE SCOPE

The future scope will implement the Fast Recurrent Neural Network (RNN) algorithm to classify the moving object and remove the interference in the inputvideos. The Fast RNN are fast.

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