Abstract

The main objective of this paper is to propose a SIMULINK MODEL to detect moving vehicles. Background subtraction is the technique used in this algorithm. Based on the retrieved information, automatic traffic surveillance can be done. Initially, a recorded video is given directly to the blocks. The main logic is then implemented using various Embedded MATLAB blocks using individual algorithms. The algorithm takes into consideration three main techniques namely Background Subtraction, Edge Detection and Shadow Detection. Background Subtraction block is sub-divided into Selective and Non-selective parts to improve the sensitivity and give accurate background. Edge detection helps to detect the exact boundaries of moving vehicles. This is followed by the shadow detection block that removes the falsely detected pixels that are generated due to shadow of the vehicle. By analyzing the
output of the blocks discussed above, the final mask is generated. The mask along with the input frame processed to give the final video output with the detected object. Furthermore, using a Blob analysis block, parameters such as number of blobs per frame (vehicles) and the area of blobs can be used directly for traffic surveillance. Finally a Blob counting block is used to count and display the total number of cars.

References

- http://www.mathworks.in

Index Terms

Computer Science

Image Processing

Keywords

SIMULINK  MATLAB  Moving Object Detection  Blob Counting Algorithm  Traffic Surveillance