

**SCREENING OF TRAFFIC BY EMPLOYING VISION DIRECTED
KNOWLEDGE****K.Siva Shankar¹, S.Anil²**¹M.Tech Student, Dept of ECE, Vidya Vikas Institute of Technology, Chevella, R.R Dist, T.S, India²Associate Professor & HOD, Dept of ECE, Vidya Vikas Institute of Technology, Chevella, R.R Dist, T.S, India**ABSTRACT:**

Numerous different vision-based vehicle detection schemes were developed and are categorized into three classes such as vehicle detection, vehicle verification, as well as vehicle tracking. The computer vision as well as image processing can be functional in numerous aspects for traffic parameter extraction. A new video-based vehicle detection scheme was suggested for expedient, reliable, economic traffic data collection by means of images captured by video cameras subsequently by means of computer vision algorithm to extract vehicle from the video then notice the vehicle, then counting and extracting several other parameters like motion parameters, as well as tracking of multiple vehicles, speed. Proposed System deals with distinguishing the vehicles, counting vehicles on highways. Initially have to capture video of moving vehicles from proper location and this video information is used as input for entire project.

Keywords: *Vehicle detection scheme, Computer vision, Multiple vehicles, Video cameras.*

1. INTRODUCTION:

For the most part of existing applications on traffic monitoring spotlights on monitoring cars on highways. Numerous different vision-based vehicle detection schemes were developed and are categorized into three

classes such as vehicle detection, vehicle verification, as well as vehicle tracking. Video-based systems of traffic monitoring have numeral of benefits over conventional methods [1]. Video-based real-time vehicle detection system by classed background

learning is a scheme developed background subtraction is employed for vehicle detection technique. The key method of video-based vehicle discovery belongs to a classic difficulty of motion segmentation. Real-time vehicle detection within a video stream depends on image processing methods, for instance motion segmentation, edge discovery and so on. Various vision-based vehicle detection techniques were projected by researchers. Even though stereo vision by itself is not dependable enough to carry out precise vehicle detection it is practical to rapidly make object hypotheses which can then be diverse by methods of accurate pattern recognition [2][3]. A Vision based Vehicle counting as well as vehicle speed calculation was put forward which detects the vehicles, counts them and work out speed of each vehicle. A vision based vehicle identification algorithm was put forward which has been developed by means of image processing as well as techniques of pattern recognition. A new video-based vehicle detection scheme was suggested for expedient, reliable, economic traffic data collection by means of images captured by video cameras subsequently by means of computer vision algorithm to extract vehicle from the video then notice the vehicle, then

counting and extracting several other parameters like motion parameters, as well as tracking of multiple vehicles, speed. By means of camera we will constantly capture or constantly record video stream, computes information and transfer compressed video stream to ARM microcontroller.

2. METHODOLOGY:

Modern approaches of monitoring traffic comprise manual counting of vehicles, or else counting vehicles by means of magnetic loops on the road. An economical along with versatile traffic monitor system is projected by means of a vision based approach. In this system, traffic at intersections in cities is observed by means of effortless cameras that are positioned on a high spot somewhere close to these intersections. Proposed System deals with distinguishing the vehicles, counting vehicles on highways. Initially have to capture video of moving vehicles from proper location and this video information is used as input for entire project. The video is taken out to successive frames as well as output image is a colour image. And background extraction is functional to moving images and foreground in addition to background objects is removed [4]. Various counting as well as

algorithm is functional on the parameters extracted. Intel OpenCV library is utilized for image processing. The major intention of this system is to notice the vehicle in difficult environments. To become aware of the vehicle we will employ camera which is interfaced towards a microcontroller. A new video-based vehicle detection scheme was suggested for expedient, reliable, economic traffic data collection by means of images captured by video cameras subsequently by means of computer vision algorithm to extract vehicle from the video. By means of camera we will constantly capture or constantly record video stream, computes information and transfer compressed video stream to ARM microcontroller [5]. This project is on basis of Linux operating system.

3. AN OVERVIEW OF PROPOSED ALGORITHM:

The computer vision as well as image processing can be functional in numerous aspects for traffic parameter extraction. The project adaptive vehicle detection approach in support of complex environments has been effectively considered. It has been developed by integrating features of the entire hardware components as well as

software used. Presence of each module has been reasoned out and positioned cautiously thus contributing to best functioning of the unit. The projected system as shown in fig1 employs linux operating system [6]. Proposed System deals with distinguishing the vehicles, counting vehicles on highways. Initially have to capture video of moving vehicles from proper location and this video information is used as input for entire project. The video input is specified to ARM processor. A live video capture module is expanded to digitize live video signals into image frames from general video sources. Camera is mounted on a lamp post in such a method that occlusion of vehicle moving toward both side is minute. Filtering OpenCV makes available a fast, opportune interface for undertaking morphological transformations on an image. The fundamental morphological transformations are called dilation and erosion, and they take place in an extensive variety of contexts for instance removing noise, as well as joining disparate elements in an image. Foreground extraction is employed for separating moving objects from source video, only if we can effectively segment foreground can following object discovery, recognition as well as tracking procedures be successful.

Vehicle Detection is procedure of identifying vehicle that we extract from background, for identifying every vehicle we require to consider each vehicle with drawing rectangles to identify and count vehicles. The controller draws two regions and the number of rectangles present at initial region shows no. of vehicles present in meticulous region. And controller will track vehicles and work out in how many frames the rectangle will move about from first region to second region gives speed of the vehicle. The most important purpose of this system is to notice the vehicle in difficult environments. To become aware of the vehicle we will employ camera which is interfaced to a micro controller. By means of camera we will incessantly capture or constantly record. The video stream similar to vehicles, no. of vehicles in area, work out information and transfers compressed video stream to ARM micro controller. Currently application is functioning in a standalone system, if we put into practice this application to numerous locations in the town by means of web application then data can be additionally used for traffic controlling as well as planning. The vehicle detection in projected system is robust in variant weather conditions.

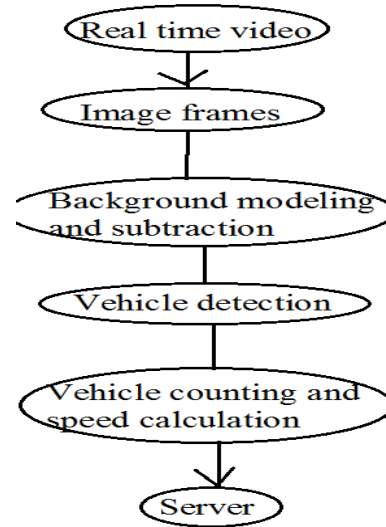


Fig1: An overview of proposed system

4. CONCLUSION:

Modern approaches of monitoring traffic comprise manual counting of vehicles, or else counting vehicles by means of magnetic loops on the road. Video-based real-time vehicle detection system by classed background learning is a scheme developed background subtraction is employed for vehicle detection technique. A Vision based Vehicle counting as well as vehicle speed calculation was put forward which detects the vehicles, counts them and work out speed of each vehicle. The project adaptive vehicle detection approach in support of complex environments has been effectively considered. It has been developed by integrating features of the entire hardware components as well as software used. Even

though stereo vision by itself is not dependable enough to carry out precise vehicle detection it is practical to rapidly make object hypotheses which can then be diverse by methods of accurate pattern recognition. A vision based vehicle identification algorithm was put forward which has been developed by means of image processing as well as techniques of pattern recognition. Presence of each module has been reasoned out and positioned cautiously thus contributing to best functioning of the unit. The projected system employs linux operating system. The video stream similar to vehicles, no. of vehicles in area, work out information and transfers compressed video stream to ARM micro controller. Currently application is functioning in a standalone system, if we put into practice this application to numerous locations in the town by means of web application then data can be additionally used for traffic controlling as well as planning.

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