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Pace Perception by Employing Open CV

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Abstract: ***In this paper I am going to make research on the project speed detection by employing open CV and also called as the speed detection by employing open CV. In this research paper I am explaining that how the computer vision is going to find the pace of the object and deteting it the over speed if the vehicle crosses the speed limit that has been set.***

I. INTRODUCTION

In the early years there is the increase of the vehicles. So we want to follow the traffic rules for our safety purpose itself .And in this research paper I am introducing a very similar issue which is a familiar for everyone. The issue is belonged to the continued accidental situations due to not taking care and not having ability to follow rules of humans in controlling the speed of objects, the vehicles will want to mentain the speed to control the accidents in the areas like school, and hospitals areas and other more crouded areas. So this method is introduced to find the speed of the moving vehicle and to mention the over speed if the vehicle crosses the speed limit in the restricted areas. This will be the bit introduction about the research paper that I am preparing.

II. LITERATURE SURVEY

"Pace Perception By Employing open CV ," in 2009 (IEEE) The conference which is performed on the processing of the images To make them as applications.

1) This survey paper the object sp[eed is found out using the Open CV method while simultaniously the speed of obstacles are calculated with the help of the speed of stumbling block. . If any obstacle is detected in the frame it will detect the speed of the vehicle from the use of open CV method .The corresponding frames are converted into blob which is compared with the pre-trained model. If the speed of the vehicle is less than or equals to 30km/hr then it will mention the leagelness about the speed of the vehicle and if incase the vehicle crosses the speed 30km/h then it will consider it as over speed.

2) This survey paper the moving objects are found out using The open CV machine, gathering in a square shapewdhi minimum tracing minutes of the boxes which will continues tracing up tot camera. Then the object is tracked by applying Kalmans purification method and Flow of optic method. Both the two methods interacts to give rise to concepts of Euclidian manager to apply to thje paper. Then after the pace of the car is calculate the movement of its picture quality(pixel). The algorithm is tested on cars with the pace of 20km/hr and 30 km/hr.

3) This survey paper, the camera will be calibarated on the basis of some general geometry equations. The geometrical equations will be used to calculate the particular result of the vehicle that about iuts speed that is it following the speed limit thatis predicted by the particular gvt .earlier there are more devices to get the speed of the vehicle whih calculates the speed and will want to operate by the humans to detect the speed whih is called as the rader gun. But to reduce the human work it will be used by applying it on the road as like the CC TV cameras it will cap[tures the video of the vehicle and it will detet the speed of the vehicle ,if it crosses the limit of 30km/h then it will shows the over speed message to the particular officer to take a action on such rules braking things.

4) This survey paper is planned for the reason of seeing the working of open CV in finding out the pace of objects, like vehicles. In the above project the complete meaning of open CV is explained that it is embedded with two normal pin 2.0 ports which are embade with combo centere point, which is itself, a normal pin small machine ombined with the one high stream normal pin port on BCM2836. On the side of the software open CV Op;erating system is used with Open CV-pycharm installed in it which is done with the use of the machine learning libraries. On the algorithm part, after starting the system it will read the video first and then conversion of kolor is made to it to ommit the Red, Green, Blue colors that they are declares as sound while finding out thee pixels of the objecst. Then in every screen of the

video the object is found out and coresp0nding speed of vehicle will be solved mathematically at the end. In the result the working skills of open CV is mentioned as 480p,1080p images gives almost the same uttara with the difference in usage of storage is limited. Its end says that it will use 35% of its CPU storage is used and 700MB/2000MB of storage to runa successful computer

5) T his survey paper the speed detection of objects has been executed with o p e n C V . In this situation of electromagnetic waves have been c a p t u r e d a n d transfered and the replay of the reflecti0n of the waves has been recorded with comparable time. By obtaining and detecting the pace of objects, particularly objects in Meter-per-hour, it verifies if the pace is between the limit. If any object obeys the p[ace limuit given pace limit after it will be traced and the message with the p a c e of the pace is presented in Led screen..

6) This survey paper the combined use of Open CV is preposed. In this w a w y static screens are seen carefulkly and their size are seperated thus giving some imnportance to four various methods for detection based on comparing with difficult value or mutasting background machinaries. The open CV is the best technique to find the speed of the vehicle .

7) This survey paper a prop0sal requested to improve the existing object pace perception system. This projet includes both hardware and software requirements. T h e Q u a l i t y o f o p e n C V been special made to find out the object in darkness or night time. Scope is also added with a internet card to get the internet which will slow down the speed of internet while operating t h e s y s t e m then after the signal will be obtained corectly.

8) This survey paper open CV is used to find out and trace out objects with accurate result. In this the video recording service system is introduced which will get the status of vehicles. Different images of the vehicle like the plate of vehicle and color of vehicle the same place are traced one by one to find pace of the vehicle. Thus the object separation is done by implementation of edge tracking and at last the finishing point The m a k i n g o f d i v i s i o n i s useful to now different objects like car and other transportation vehicles , and lorries. The terminal model is examined with 85% data and remaining is examined on the basis of result of examined one on the vehicles.

III. PROPOSED SYSTEM

The figure (fig 1) explains the block diagram of a speed detection of object using open CV.

The below block diagram is explained by giving the m o v i n g o b j e c t c a p t u r e d b y t h e o p e n C V . The video inputted will be pre-processed first as the requirements it is needed to process the data. From the sample of the video that has been captured by the open CV method.

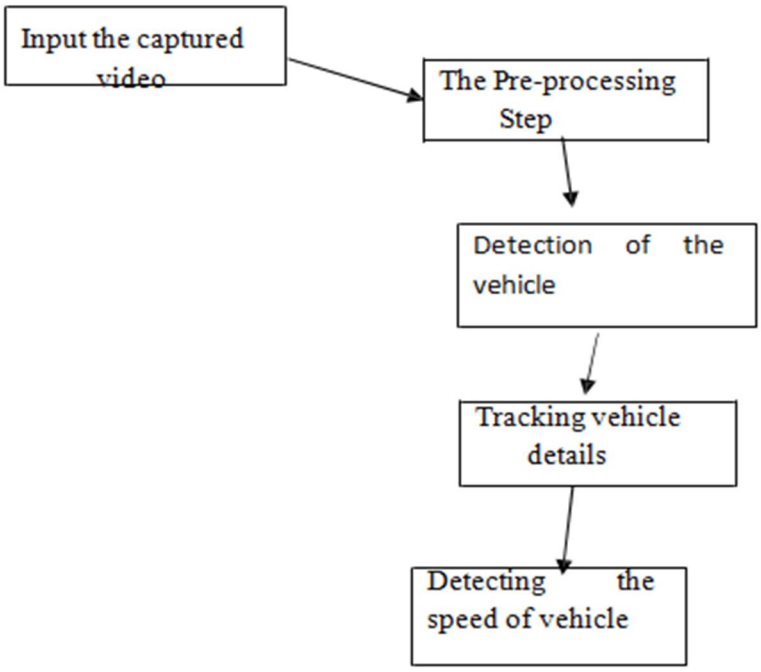

Fig 1: Block diagram of vehicle speed detection using open CV.

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IV. TERMINOLOGIES

A. Input The Captured Video

The video which is captured want to input into the system to detect the speed and to trace the vehicle so that we can easily get vthe clarity to follow the traffic rules ,the video will be captured by the use of the open CV system which will capture the video of the moving vehicle to detect its speed .

B. The Pre-Processing Step

The use of the pre-processing system is to get the clear picture of the vehicle which will be useful for the tracing purpose of the vehicle .if we get the unclarified picture of the vehicle then it will be difficult to fing the details of the vehicle and the exact location of the vehicle so that this will be used for the better experience or getting the clear high clarity of the picture.

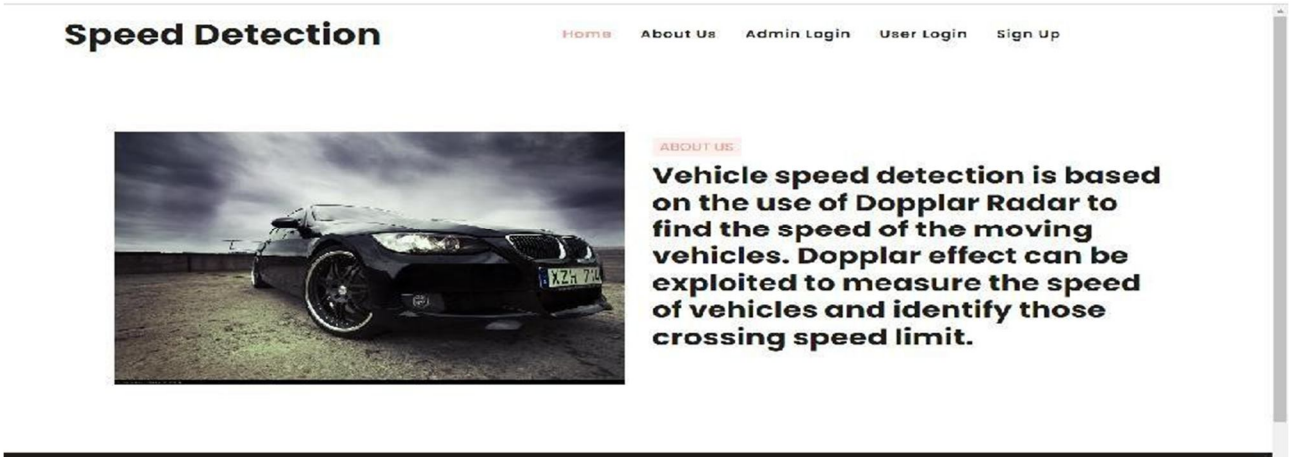
C. Detection Of The Vehicle

The vehicle will be detected or it want to detet the vehicle which crosses the limit of speed .Thevehicle will be detected if it crosses the limit of the speed after vdetetion of the speed of the vehicle it will be moved to next step.

D. Tracing The Vehile

The detection of the vehicle will be done then the tracing of the vehicle will be done for extracting the speed of the speed of vehicle the vehicle will be trtaced and it will be marked the vehicle that the particular object is going to trace now and it will be traced to detect the speed of the object or the vehicle.

E. Detecting Speed Of Vehicle

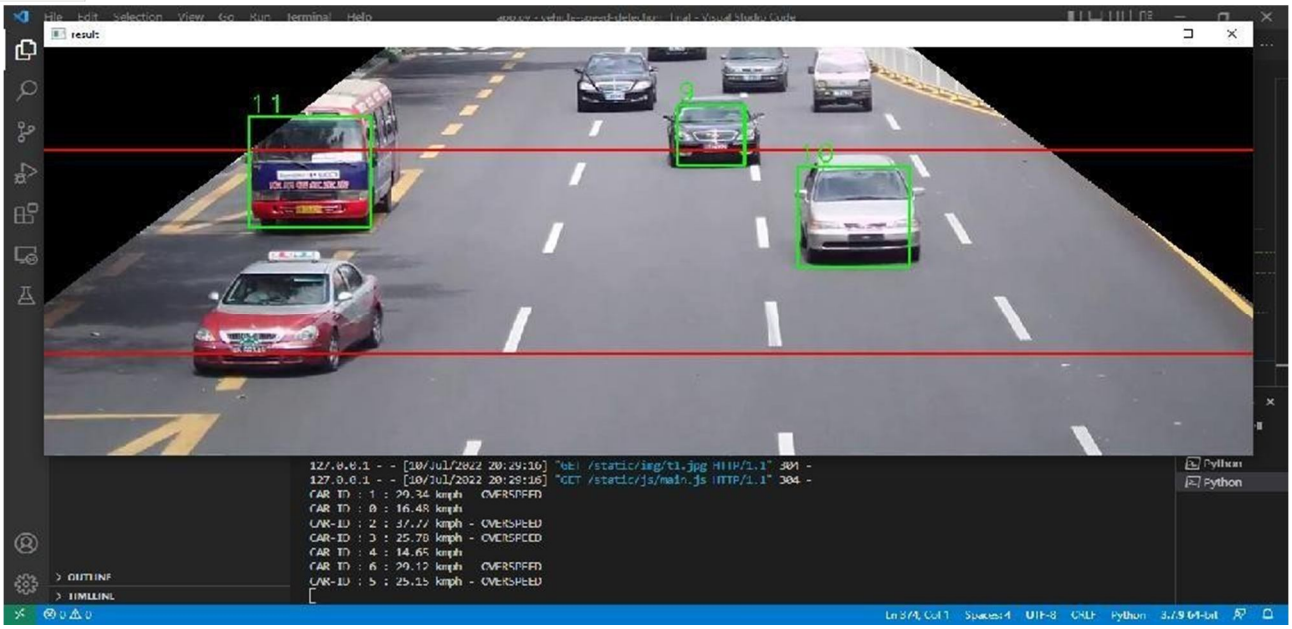


The vehicle speed is detected if and only if the tracing of the particular vehicle is done for speed detection the last step which is the detection of the speed of the vehicle ,if the vehicle crosses the li8mit of speed which is 30km/h it will gives the message that the vehicle is in the over speed and this is the process it will follow to detect the speed of vehicle using open CV.

V. RESULT AND ANALYSIS

The result of the tracing the speed of the vehicle will be shown by the below snap and will show the traced details of the vehicles and it will take the or captures the vehicle when it comes into the red coloured box that will be the range of the camera to capture ,and it will selects the picture of the object which is nearer to the range of the camera .

The result will shows the vehicle will want to follow the speed range which is 30km/h or else it show the over speed message the result will be helpful to the tracking iodf the vehicle so that they can extract the exact details of the vehicle and the previous cases on the vehicles owner like the traffic rules braking and other. This system will be applied only where the accidents are occurred previously that are called as the accidental zones .So that to be safer they will use the such technologies .



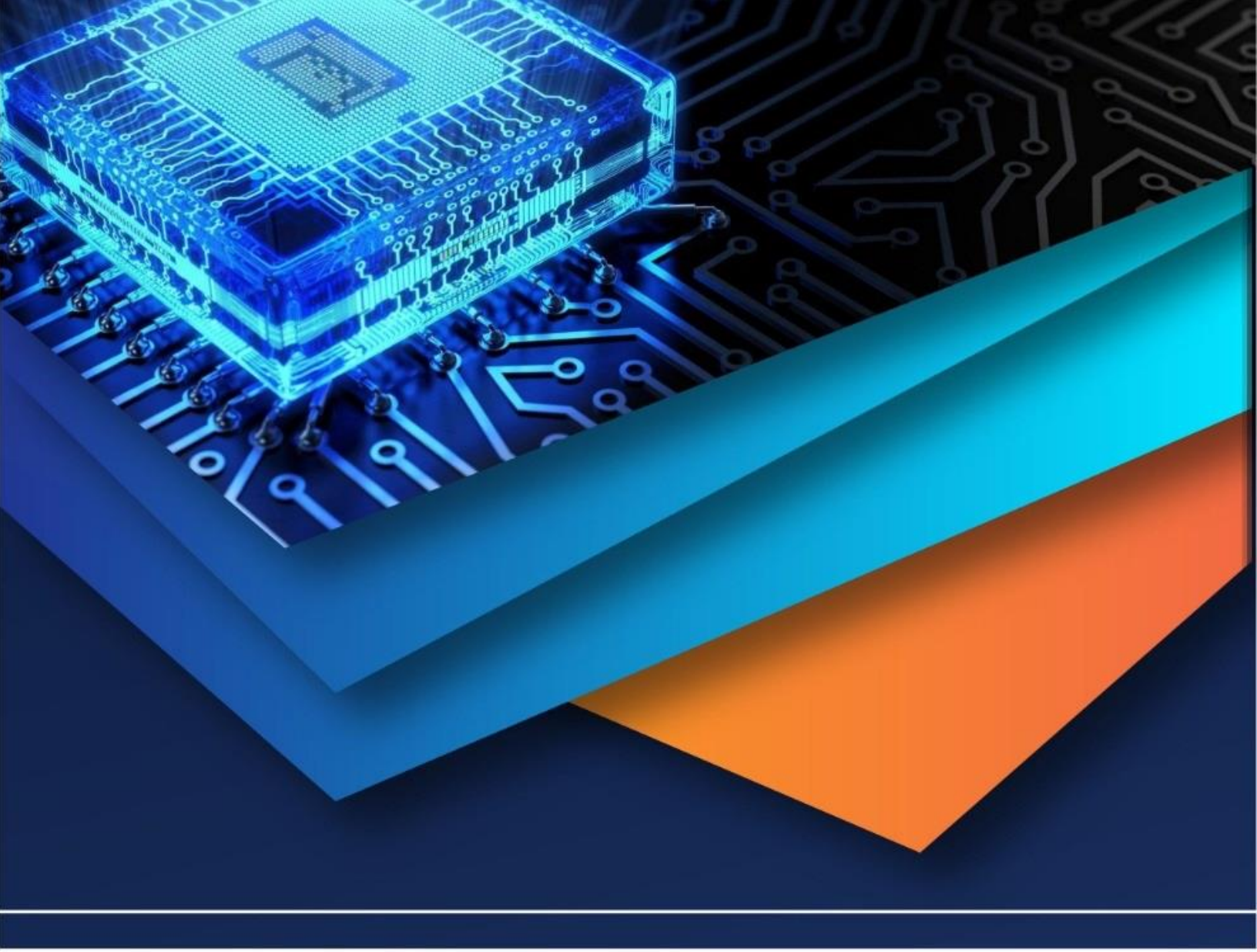
This will be the result and analysis of my research paper which will shows the safety measures to follow it to traffic rules and it will results in the improvement of the tehnologies to develop our country.

VI. CONCLUSION

The conclusion of the research paper is to follow the traffic rules in the cities ,and to drive safely in the areas like schools and hospitals that there will be the people who are walking or crossing the roads in ritial conditions so it is necessary to follow the rules of drive vehicle s slowly. The people want to take care of the crossing of the roads and need to follow the signals to cross the road and to use the zebra crossing to avoid the accidents. This is my research paper of speed detection using open CV. It is the one of the best technologies in the world and thanks for giving the opportunity to conclude the paper.

REFERENCES

[1] Accident Avoidance Based on vehicle speed Detection Using Open CV by DR. S.S. Lokhande, Sonal Darade, Pranjali Deshmukh, Neha Joshi, Dept. Of Electronics and Communication, Sinhgad College of engineering.
[2] Vehicle speed detection using open CV to follow the safety measures , Jozef Gerat, Dominik Sopiak, Milos Oravec, Jarmila Pavlovicova, Faculty of Electrical Engineering college.
[3] Video of the vehicle speed detection using an open CV method for better expirence. Arash Gholarni Rad ,Department of civil engineering Malaya.
[4] Vehicle speed detection using video and image processing system.software Hakan Kovunc Computer engineering department.
[5] For avoiding accidents enhance thevehicle speed detection , Abhrajit Chattopadhyay, Gunda Ravichandra, Vivek,sienceand technology in Chennai.
[6] Tracking and Classification of vehiclre speed by the speed detecting System with a Convolution Neural Network(CNN), HungJun Kim.
[7] Speed of vehicle detection and tracing the vehicle Himanshu Dwivedi Computer Science and Engineering Department,BPIT Delhi.



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