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A Survey on Detection of Accident in Vanet

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Abstract: The Population grows every year, so the use of vehicles also grows drastically. Millions of people around the world use the vehicles for their transportation and this led to vehicle collision with another vehicle, pedestrian, animal and property damage. By this many people die and also many more are stricken. Executions of safety information such as speed limits and road conditions are used in many parts of the world are still in developing stage. This paper will give you a comparative study on accident detection and health monitoring for driver.

I. INTRODUCTION

Among all, the states in India, the Tamil Nadu as the highest accident rates. In 2013, a survey stated that 15,563 fatalities and 14,504 recorded accidents in the Tamil Nadu which is the highest accident rate in India. From 2002 to 2012 there is a list of more accident in the state. According to the report there is two things to cause accident one is technology and other is drunk and drive and other health issues of driver. In India,70 per cent occurrence of death by accident, in war. The more number of vehicles increased in 2007 from 82 lakhs to 1.6 crores in 2012 and there is no appreciable change in infrastructure of the road due to this cause an accident. A survey reported that approximately eight accidents occur at every per hour and 15% of accidents occurs in every country. In Chennai there were 9,663 accidents were recorded by National Crime Bureau. Major factor in traffic accidents is driving inattention. Driver's distraction is more risky than fatalities and leads to crashes. Driving distraction means when a driver needs an action of process of information for safety measurement of driving task because some event activity compelled or to be disposed or inclined in action operation or effect to do something. In foreign countries, there are some methods used for the road research area and profitable an efficient purpose.

This simulation is implemented by using various sensors devices which is used to sense the data and transmits it to base station. Some of the various sensors are Infrared sensor, Ultrasonic sensors, piezoelectric sensors, Alcoholic sensors, and EEG sensors etc. These sensor devices are used to sense the data and transmits to the base station.

A Survey reported the number of accidents which occurred in Tamil Nadu since from the year 2000 to 2016 id given below:.

YEAR	Total No. of accidents	Total no. of peoples killed	Total no. of peoples involved
2000	48923	9300	62706
2001	51978	9571	63853
2002	53503	9939	65069
2003	51025	9275	64517
2004	52508	9507	66790
2005	53878	9706	71727
2006	55145	11009	75350
2007	59140	12036	83135
2008	60409	12784	83035
2009	60794	13746	84250
2010	64996	15409	90854
2011	65873	15422	89667
2012	67757	16175	94523
2013	66238	15563	91244
2014	67250	15190	92915
2015	67250	15642	95343
2016	71431	17218	99381

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II. RELATED WORKS

A. Risky Driver recognition based on vehicle Speed time series.

This paper proposes, traffic accidents are occurring due to risky drivers who are driving the vehicles very rudely on the roads. Risk drivers are the people who droves the vehicles at very high speed in any different roads. In order to avoid accidents caused by these people, in this system one mechanism for measuring the speed of different vehicles. The mechanism is purely based on vehicle's speed and its time series. By making use of this system, it measure the speed and identifying the range of speeds. Then the analysis is made based on the information retrieved. Later finding the risky drivers, the punishments are given to them. The advantage of using this is to reduce the number of accidents occurring in traffic roads. Therefore in this way the risky drivers are recognized.

B. Abnormal Driving Detection Based on Normalized Driving Behavior.

The Accidents not only occurs because of over speed, driver distractions or drunk and drive. The Abnormal behavior of driver will also lead to accidents and cause danger to both public and driver. In order to avoid the accident which is caused by the abnormal behavior of a driver this paper introduces a mechanism to detect abnormal driving. This mechanism is based on abnormal behavior of driver by analyzing normalized driving behavior. It also uses a driver model, driving style to detect and analyze. It hasa proposed system called abnormality index which is used in analysis of normalized driving behaviors to evaluate the abnormity. It is mainly done with help of ordinary vehicle data such as brake pedals, gas etc. The advantage of using this system is to reduce the number of accidents occurs mainly based on the abnormal driving. Hence the abnormal driving is recognized. But this system also has limitations towards longitudinal driving due to limitation of vehicle test data and it will be enhanced in future.

C. Detection of Drive vigilance Level Using EEG Signals and Driving Contexts.

In Today's the accidents occurs very often and one of the important factor that cause accident is driver's vigilance level. The Estimation of vigilance level will prevent accidents and improves safe driving. To improve the driving and to reduce the accidents this paper introduced a mechanism which uses EEG Signals to detect the driver's vigilance level. The proposed system is a combination of using EEG signals and driving contexts. This System classified into two different categories based on the inputs and analyzes each category separately to evaluate the vigilance level. This system mainly used to reduce the road accidents based on the vigilance level of the driver. The main advantage is to detect the vigilance level of the driver and it would come to know about moods of the driver and necessary precautions are taken. The limitation is mainly based on the probation of errors. Driving straight or on curves ill contribute for prediction accuracy of driver's vigilance level. Hence the vigilance level is detected.

D. Vehicles of the Future: A Survey of Research on Safety Issues.

The automobile industry has huge transformation over two centuries ago. This transformation mainly significant in the developments of information and communication technologies (ICT). This system mainly encompasses both the accident detection and health monitoring for driver. This system was mainly proposed to reduce the accidents which occur on roads and highways. There are many areas for development such as drowsiness detection, collision avoidance, and vehicle detection etc. This system checks the lanes while driving and its status is sensed by using different sensors and stored and necessary actions are taken. By doing like this, the system can reduce the road accidents and also collision which occur on road. Therefore the future of vehicles are recognized.

E. Driver Inattention Monitoring System for Intelligent Vehicles.

The major factor in highway crashes is driver inattention. The driver inattention is classified into two categories, they are distraction and fatigue. The common definition for driver inattention is "diminished attention to activities that are critical for safe driving in absence of competing activity". This system is mainly used to reduce the accidents on highways and this driver inattention system is also installed by top auto companies like Toyota, Nissan, and Volvo etc. This mechanism measures different factors such as driver biological measures, driver physical and performance measures. This is helpful for doing analysis and it is also used to reduce the driver distraction while driving. Driver inattention mainly increases risk driving. The advantage of this system is mainly to reduce the accidents which occur due to the driver's distraction. The Disadvantage of the system is we need to consider the natural disasters also such as weather conditions, type of roads and traffic density. Hence, new system will be proposed to overcome the above problem.

F. Reason for communication Delay and Driver Reaction Time.

In Today's world the traffic flow control are congested. Then it leads to be a bottleneck for mobility.

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To avoid this congestion by using the Linear Quadratic regulation to obtain a design of Connected Cruise Control (CCC). The proposed system supports the vehicle-to-vehicle communication from multiple vehicle ahead. But the drawback of the propose system is not to increase the performance of car. To analyze the performance of arising connected vehicle system both auto and human driven vehicle. The advantage of using the non-Connected Cruise Control, the preceding vehicle is driven at constant velocity, but also the non-Connected Cruise Control vehicle also covers the same velocity. Therefore this paper consider to applying the plant stability non-Connected Control Cruise vehicle.

G. Road Detection Based Algorithm and Evaluation.

Road detection is of high relevance for road departure warning, and supporting the pedestrian detection. In this road detection the system are using an image control; the road detection algorithm is supports algorithms like illuminant-invariant features space and likelihood-based classifier. The incoming images are analyzed by illuminant-invariant space, and the road design is estimated. The results are shown in map format. The result is presented in the form of small hole from middle to the bottom part of the images. The road detection evaluation is validating from the illuminant-invariant algorithm. It perform in three row process, in first row it contain the original images, in second row it contains illuminant-invariant image, in the third row it contains detected road and finally in the bottom row it shows the comparison against hand-segmented results which will be displayed in (Yellow). The correctly classified pixels (Green) falsely detected road pixels (Red).

H. Real Time Detection of Driver Cognitive Distraction using Support Vector Machine.

In Today's world, everyone uses the in-vehicle information (IVISs) such as cell phones, satellite radios, navigation system and driver distraction which becomes an important aspects for safety concern. A Survey says that, between 13% and 50% of crashes taken place because of the driver distraction resulting as 5000 fatalities and $40 billion in damages each year. Due to this, a mechanism was introduced to overcome the driver distraction problem. In this System, the strategy called Support Vector Machines (SVM) which is a data mining method for detecting the distractions using driver's eye movements and performance. The Data were trained and tested in both SVM and logistic regression model. This system tracks the eye movement and measures number of distractions. The main advantage is that it is used to decrease the occurrence of accidents and ensure safe driving. The disadvantage v difficult of tracking the eye which may lose the accuracy when vehicles travels on rough roads or on lighting conditions. Therefore these drawbacks will be enhanced in future.

III. COMPARTIVE STUDY

For ensuring safety in driving and to detect and prevent the accidents various approaches and mechanism are been proposed. The vehicle to vehicle system is more efficient among all because it communicates between one vehicle to another vehicle and this reduces number accidents as the alert messages are transmitted.

IV. CONCLUSION

In this paper, a survey of literature is presented for safe driving accident detection for intelligent vehicles. This survey is mainly based on the study of how the accidents are detected and prevented. This also ensures the safeness of the driver as well as public. The survey discussed various solution approaches such as collision, congestion, highway road accidents and it also gives brief information about the driver assistant system has been discussed.

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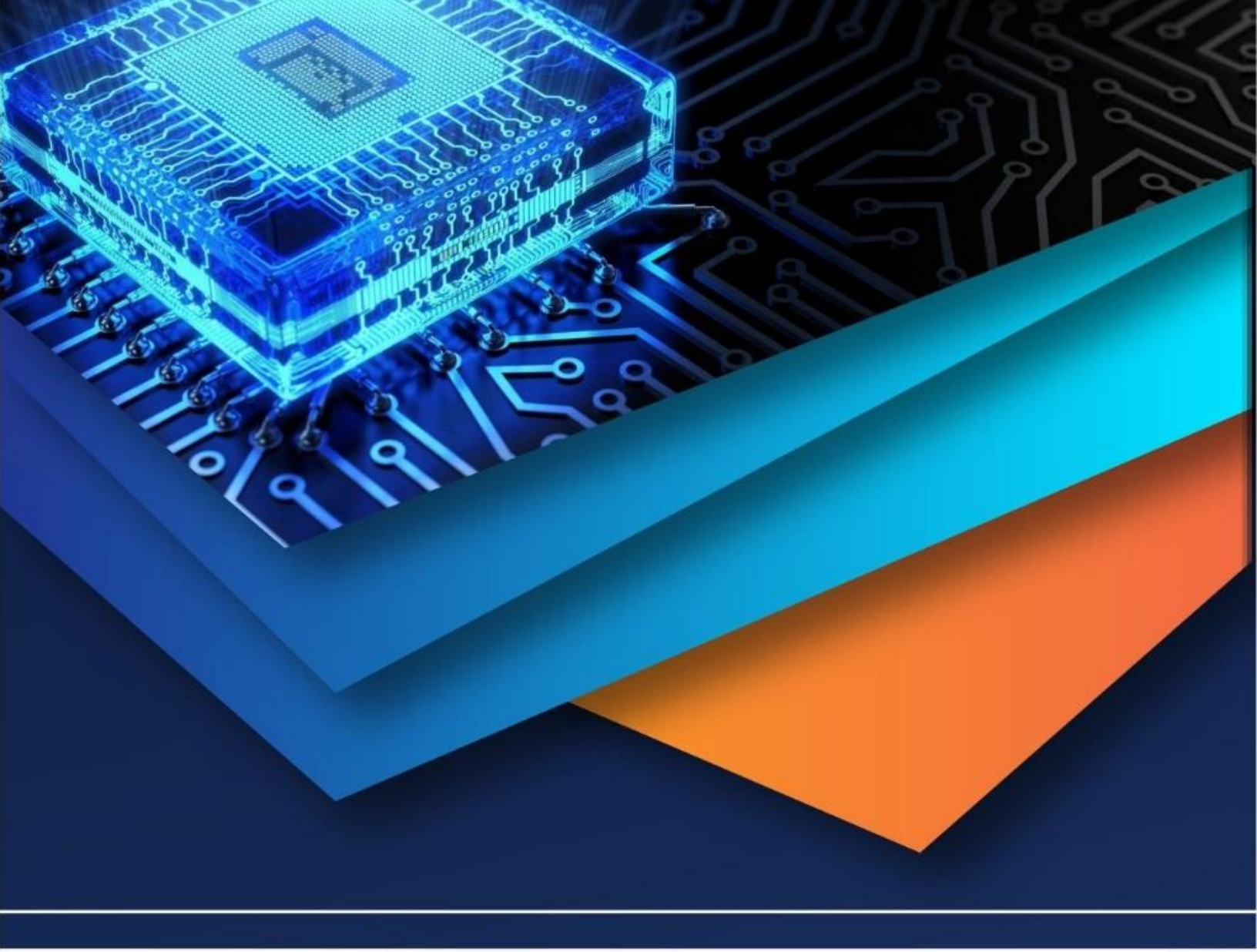

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