



A SURVEY ON TRANSPORTATION CRIME CONTROL SYSTEM

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Abstract: The advanced technology used for the Transportation (Traffic) Crime Control System is the subject of this article. It is not possible for traffic cops to keep the radar gun at all times. Various developers and researchers have come up with a variety of techniques. The main goal is to research and classify the various types of (apparatuses), applications, and hardware that are used in the technological field.

In recent years, automatic vehicle control has become a very pressing problem. It's been crucial, and various systems have been employed so far. However, as technology advances, various government agencies are challenging any kind of computerised technology to address the issue of excessive speeding. In this case, we propose a method to track vehicles that are travelling faster than the posted legal speed limit on the streets or highways. Much of this can be accomplished by the use of Internet of Things technologies (IOT).

Keywords: - IoT, Smart vehicle over speeding sensor Radar gun, Image Processing, Gaining and Transferring

1. INTRODUCTION

The most serious issue with a traffic accident is that it is a natural occurrence that can occur anywhere at any time and necessitates urgent attention in order to avoid collisions. According to the Association for Safe International Road Travel, about 1.30 million people die and 60 million people are injured each year on the world's highways. In India... Various reasons of road crashes reveal that drivers are negligent 4,037 times, passengers are negligent 40 times, overtake 150 times, speed 700 times, drink and drive 800 times, mechanical problems 295 times, animals are 20 times, and road conditions are 60 times. To address these issues, several car manufacturers have proposed speed limit strategies to maintain a reasonable distance between vehicles. Adversarial Speed is a factor in one-third of all deadly accidents. A sonar sensor is used to calculate the speed of moving vehicles in vehicle speed estimation. A radar gun can be used to track vehicles that are exceeding the speed limit by measuring their speed. The most critical aspect in deciding speed is the frequency difference between the transmitted and reflected high-frequency waves. The Radar Gun-based speed detector can be attached to a microprocessor-based computer for measurement and comparison. The system's HD camera can be used to see the lane in real time. The device can be linked to a server via the internet, and photos from the path can be sent to the server for analysis.

Under modern networks, the Internet of Things (IoT) refers to the interconnection of readily recognisable fixed computer appliances. The Internet of Things (IoT) is a smart networking of networks, utilities, and machines that applies the M2M (Machine to Machine Interactions) protocol and covers a wide range of domains and applications. The aim of this project is to propose and create a new Smart Vehicle Over speeding Detector that uses IoT technologies to warn information about over speeding vehicles, which is critical for human safety. This research provides an overview of a smart vehicle speeding detector based on IoT technology.

2. LITERATURE REVIEW

In literature we have studied various details about vehicle monitoring system.

i. Radio waves are used in radar.

If the vehicle is approaching the radar gun, the second section of the wave moves a shorter path before being reflected than the first segment. As a result, the wave's peaks and valleys become compressed: The rate of occurrence rises. A radar gun can measure how fast a vehicle is heading toward or away from it based on how often the frequency varies. When a radar gun is used inside a running patrol car, the vehicle's own action must be taken into account. If the police car is travelling at 60 kilometres per hour and the gun senses that the target is speeding forward at 20 kilometres per hour,



the target is not moving toward or away from the police car, and the target is running at precisely 60 kilometres per hour. For more than 50 years, police officers have been chasing speeders in this manner. [1]

ii. Doppler Effect-based Automated Speed Detection System

In order to charge a fine, researchers developed an Automated Speed Detection System that can track a vehicle's speed and, if overspeeding occurs, delete the vehicle's licence number and mail it to a Toll Plaza. For speed measurement, the Doppler Effect observable fact is used. If excessive speeding is detected, a camera automatically detects a vehicle's image, and DIP (Digital Image Processing) techniques are used to delete the licence number.[2]

iii. Used an IR Sensor to Detect Rash Driving on the Highway

This paper outlines a device that can track and warn traffic officials if rash driving is observed on highways. Many devices have been established in the past to detect rash driving on highways. The majority of the procedures require intense focus and a considerable period of time to complete, making them difficult to carry out. In this article, we will design a method for detecting and alerting hazardous vehicle driving habits associated with rash driving early on. An IR transmitter, an IR receiver, a control circuit, and a buzzer are all needed for the whole setup. The speed limit is imposed by the police, who employ a device that takes into account the traffic at the time. The control circuit calculates the time it takes the vehicle to drive from one fixed point to the next and shows it on seven section displays. A buzzer also sounds if the car exceeds the speed limit, alerting the officers.[3]

iv. Traffic Signal Control Using Camera Sensor

A camera sensor-based adaptive traffic signal control has been proposed. This project results in a vehicle counting device that can detect traffic density. PCA is used to categorise cars into different groups. The Hear training approach is used to feed vehicle function data into the device. In general, previous work has two goals: to detect and count the number of moving vehicles captured by CCTV and to improve the quality of the footage. The cumulative number of vehicles within a given time period is considered to be the intensity. [4]

v. Measuring vehicle speeds with on-board Doppler radar Using FFT

Methods for estimating vehicle speed that are currently in use A. Used on-board Doppler radar to measure vehicle speeds the framework for the above-mentioned approach is built on millimetre wave frontends (61 GHz) and digital baseband signal processing using FFT. On a frame, the device is applied. A procedure for estimating the Doppler frequency sensor model is built on FFT techniques, and model-based algorithms are used for post processing. The term "post processing" refers to the correlation of observed Doppler spectra with theoretically determined spectra. The signal processing algorithm is implemented on two Motorola DSP 56001 DSPs with 24-bit fixed point arithmetic. The first is merely an interface to a 14-bit A/D converter with a conversion rate of 540 kHz. The use of costly DSPs and a complicated FFT strategy is a detriment. [5].

3. PROBLEM STATEMENT

To search and locate the over speeding car, a variety of methods are being used. However, no automated technology has yet been created that can execute the tasks of speed detection and vehicle identification without the need for human intervention. The below are the main concerns of the current environment:

- The number of injuries is rising day by day as a result of excessive car speeding.
- Using human resources takes time, so me hours are no longer important.
- Commercially available systems are prohibitively expensive and impossible to deploy.
- After the traffic police chalan, speeding vehicles have been detected using various radar guns or infrared sensors. The driver's chalan is produced based on the information from the system.
- As a result, drivers who do not obey the law or the speed limit will quickly flee, and traffic cops do not have enough evidence to catch them. Due to a lack of true proof or evidence



4.OBJECTIVES

The biggest goal is for drivers to obey traffic laws, and the most common causes of accidents are signal violations and excessive speeding. Our project's aim is to resolve the questions that have been raised.

The objectives are as follows:

- We have developed an automatic and multipurpose mechanism to solve the problems of excessive speeding without involving human resources.
- Using image recognition, track the over speeding vehicle's speed and provide the victim with the reality proof.
- IoT technology is used to share information between them.
- And, using Firebase, the data would be saved on the cloud.

5. CONCLUSION

This study looks at the problem of conducting accurate vehicle overspeed identification in an urban environment using IoT technology to aid evolving automotive applications. The Smart Vehicle Over Speeding Detector detects the driving conditions to achieve good detection accuracy. Over speeding vehicles are tracked and reported to the relevant authority using the proposed device., thus avoiding accidents.

6. FUTURE SCOPE

The following are the future enhancement that may be done into the proposed system through developing hardware implantations, interfacing sensors and software algorithms:-

- Solution for emergency vehicle's speed control.
- Solution for Rash-Driving.
- People will follow the traffic rules
- People will not able to argue with the police because of the truth evidence.

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