

IOT BASED VECHICLE LICENSE TRACKING SYSTEM

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Abstract--*In this examination work, we investigate the vehicle discovery method that can be utilized for traffic observation frameworks. This framework works with the coordination of CCTV cameras for recognizing the vehicles. Beginning advance will consistently be vehicle object discovery. Haar Cascades are utilized for recognition of vehicle in the film. Viola Jones Algorithm is utilized in preparing these course classifiers. We adjust it to discover one of a kind articles in the video, by following every vehicle in a chose district of intrigue. This is one of the quickest strategies to effectively distinguish, track and tally a vehicle object with precision up to 78 percent.*

Keywords-- *Digital image processing, automatic traffic, Computer vision, Haar-like features, Cascade classifier, Vehicle detection, Traffic management.*

I INTRODUCTION

In this exploration paper, we will talk about the remarkable vehicle distinguishing proof and following in a chose area of enthusiasm with most exact outcomes. Vehicle discovery and checking play and significant piece of numerous frameworks that help to oversee and control traffic in urban communities. Fundamental target is to distinguish and check the vehicles with greatest exactness and to have the option to do as such on streets, expressways and in little paths and so forth. Our technique utilizes frontal area objects, i.e. Haar falls to distinguish the autos, which accepts contribution as video or a picture and procedures it to give the exact tally of vehicles seen in it. A video or live video film is separated into outlines. These outlines were changed into dim casings and these dim edges were given as a contribution to the framework. At that point a particular area was chosen as an area of intrigue. By utilizing Haar-like highlights vehicle was identified. Each edge is contrasted and the past casing, if the vehicle is available in both the edges and contrast in their x and y facilitates is not as much as max (Width, Height) pixels then we think about it as an equivalent vehicle. On the off chance that the thing that matters is more than max (Width, Height) pixels, at that point we think about them as 2 isolated vehicles.

II LITERATURE SURVEY

Proposed a superior traffic the executive's framework utilizing Raspberry pi and RFID innovation. The vehicle has a raspberry pi controller fixed in it which is interfaced with sensors like gas sensor, temperature sensor and

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stun sensor. These sensors are fixed at a foreordained an incentive before mishap. At the point when a mishap happens, the estimation of one of the sensor changes and a message to a predefined number (of the rescue vehicle) is sent through GSM. The GPS module which is likewise interfaced with the controller additionally sends the area of the vehicle. At the point when the message is gotten by the rescue vehicle, an unmistakable course must be given to the emergency vehicle. The rescue vehicle has a controller ARM which is interfaced with the RFID tag sends electromagnetic waves. At the point when a rescue vehicle arrives at the traffic signal the RFID peruser which is put on the joints distinguish the electromagnetic rushes of the tag. On the off chance that the traffic signal is red, at that point the perusers experiences the database in portion of seconds and turn the red light green. Furthermore, naturally in such condition the RFID on inverse joints turn the contrary sign red. This gives a reasonable course to the rescue vehicle[1].

Built up an accelerometer based System for driver security. The framework has the upside of following or recognizing vehicles area just by sending a SMS or email to the approved individual. The framework is planned by utilizing Raspberry Pi (ARM11) for quick access to accelerometer for occasion recognition. Is there any occasion is happens the message sent to the approved individual so they can make prompt move to spare the lives and lessen the harms. Pictures caught by the camera on the vehicle are messaged to the concerned individual (for instance the proprietor of the vehicle) alongside the sort of mishap and the hour of the mishap[2]. Proposed an Automatic Vehicle Accident Detection and Messaging System Using GPS and GSM Modems. AT89C52 microcontroller is utilized in the framework. At the point when the framework is turned on, LED is ON demonstrating that force is provided to the circuit. At the point when the IR sensors that are utilized sense any hindrance, they send hinder to microcontroller. The GPS gets the area of the vehicle that met with a mishap and gives the data back. This data is sent to a versatile number as a message. This message is gotten utilizing GSM modem present in the circuit. The message gives the data of longitude and scope esteems. Utilizing these qualities the position of the vehicle can be evaluated [3].

Portrayed the techniques for vehicle impact identification and remote caution gadget utilizing Arduino. Key highlights of this plan incorporate constant vehicle checking by sending its data with respect to position (longitude, scope), time, and point to the observing station and to the client/proprietors versatile that should assist them with getting medicinal assistance if mishap or the burglary happens. Likewise client/proprietor has an entrance to get ongoing situation of a vehicle continuously. At whatever point mishap happens, MEMS and vibration sensor recognizes and sends the signs to microcontroller, by utilizing GPS specific areas where mishap has happened is discovered, at that point GSM sends message to approved individuals[4]. Item acknowledgment is a technique grown additional time by potential calculations for ID of different articles that we run over in our everyday life. We effectively arrange and perceive these items in pictures however this errand is especially hard for machines continuously [5]. Regardless of whether the Object is mostly unmistakable it can in any case be perceived and recognized effectively in the event that the prepared calculation is sufficient [6]. In current life, we need to confront numerous issues, one is traffic blockage, which is turning out to be increasingly risky step by step [7].

Because of the expanding vehicle traffic, numerous issues risen, for instance, car crashes, traffic blockage, and so on. Various ways are there in which we can follow, recognize a vehicle on street like by introducing specific ID labels on them, by Picture Processing, by identifying their movement and so on [8].

Vehicle or traffic thickness is determined. This information can be imperative in numerous studies and have a significant impact in vehicle traffic the executives. This is a standout amongst other present day techniques that nations are trying to bring into the traffic framework [9]. Along these lines you can tally the quantity of vehicles in most exact manners.

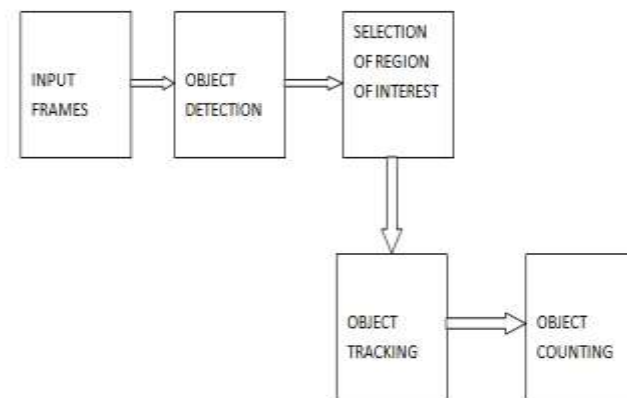


Figure 1: Block Diagram

III INPUT FRAMES

Input to the System the system uses an existing video sequence. The video is divided into frames, further the frames are transformed into gray level frames and gray frames are given as an input to the system.

IV OBJECT DETECTION

Car Detection Using Haar Cascade Classifier Haar Cascade Classifier is a method utilized for detecting object, also called as Viola Jones method due to its introduction by Paul Viola and Michael Jones for face detection. This method has 4 points for detecting an object, such as Haar-like feature, Cascade Classifier, Integral image and AdaBoost learning Haar-like feature is a rectangular feature providing specific indication to an image. Figure 2(a), Figure 2(b) and Figure 2(c) are the examples of common variety of Haar-like feature. Haar-like feature offers high speed computation depending the number of pixels inside the rectangle feature and not depending on each pixel value of the image [9]. The SIM900A is a dual-band GSM/GPRS solution. SIM900A delivers GSM/GPRS 900/1800MHz performance for SMS and Data in a small form factor with Low power consumptions. It controlled [23] via AT commands. In obtaining object detection value, Haar-like feature value was calculated using integral image. Integral image could calculate values accurately and relatively quick by creating new presentation of image by using value of region previously scanned by specific Haar-like feature as shown in Figure 3 [11]. The value of integral image was obtained by sum value of previous index, started by left top until right bottom; moreover, Integral image system.

V OBJECT TRACKING

Object tracking was used to obtain the specific position (x,y) of object inside the frame to be compared with list of previous positions of tracked objects; however, new positions or positions not including on the list of tracked object positions was added as a position (x, y) of a new object[5]. If the new position was included in the list of positions of previous tracked objects, it would be used as a new position of a recognized object. Vehicle tracking is composed of identifying the detected vehicle continuously in a video sequence, It is done by marking the boundary around the detected vehicle [12]. The general process of object tracking is presented by the flowchart

VI OBJECT COUNING

Every passing vehicle object inside ROI (Region of Interest) was tracked based on its position and would be compared with the list of tracked object positions. For a new position or position not including in the list of tracked objects, it was added as a new object and should be counted[6]. If the new position was included in the list of positions of previous tracked objects, it means the position had already been counted as a recognized vehicle. The general process of object counting will be illustrated by the flowchart in Figure 9.

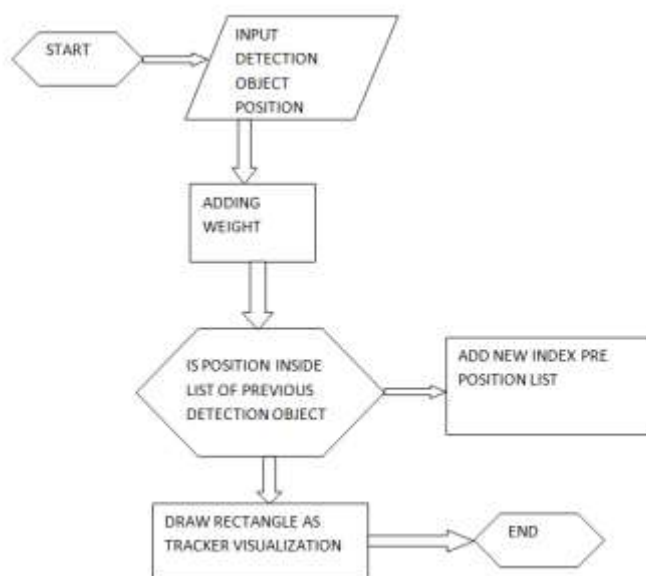


Figure 2: FLOW CHART

VII PROPOSED SYSTEM

In the present work, other than following the area of the vehicle, data of motor temperature to forestall the start/sparkle, data about the state of the driver, for example, Drunk/Drowsiness is recognized. Thus the present work includes further properties as talked about underneath.

- i. At the point when the driver is smashed, the vehicle stops and offers insinuation to the proprietor.
- ii. At the point when the driver rests/feels sluggish, the vehicle consequently stops and hint to the proprietor.
- iii. At the point when the motor temperature crosses the limit level then an alert is sent to the driver to make vital strides so the vehicle temperature returns to typical temperature in this way forestalling any debacles.

VIII CONCLUSION

This examination structures a characterization framework to decide object as explicit sort of vehicle. Haar Cascade Classifier is utilized to decide object as vehicle and checked the quantity of passing vehicles on the particular street utilizing traffic recordings as info. The identification pace of this framework is influenced by the scale factor esteem, distinctive scale factor esteem giving differed identification rates. In getting high discovery rate, the scale factor esteem giving the best execution to classifier ought to be resolved. . Later on, giving capable and vigorous vehicle location framework will be a difficult assignment in this field.

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