

IOT BASED ANTI –THEFT FACE DETECTION AND VEHICLE TRACKING

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Abstract—Nowadays rate of vehicle theft is very high all through the world and the situation are even worse in developing country. Therefore, protection of vehicles with an intelligent, reliable, effective and economical system is very important. The existing technologies for vehicle security have a number of limitations including high false alarm rate, easy deactivation and high cost. In this Project, an Anti-Theft Vehicle Security System (ATV2S) has been design and implemented utilizing sensor-network system, which employ Global Positioning System (GPS) and Nodemcu to track the vehicle. The cutting edge technology of this project is capable to protect, monitor and track the vehicle even within a minute. And we are using face detection system by using ESP32cam we can find theft face and complaint to police.

Key words— Ship Data, Network, Opnet, QOS

I. INTRODUCTION

GPS tracking unit is a device that uses the Global Positioning System (GPS) to determine the precise location of a vehicle, person, or other asset to which it is attached and to record the position of the asset at regular intervals. The recorded location data can be stored within the tracking unit, or it may be transmitted to a central location data base, or internet-connected computer, using a cellular (GPRS or SMS), radio, or satellite modem embedded in the unit. This allows the asset's location to be displayed against a map backdrop in either real time or when analyzing the track later, using GPS tracking software

II. LITERATURE SURVEY

In this 21st century, there's a rapid increase in the number of vehicles so that the number of car theft attempts also increases, locally and internationally. With the invention of strong stealing techniques, owners are in fear of having their vehicles being stolen from the common parking lot or from outside their home. In this proposed vehicle security system face detection system (FDS) is used to detect the face of the driver and compare it with the predefined face. Real-time vehicle security system supported computer vision provides an answer to the present problem. The proposed vehicle security system performs image processing based on real-time user authentication using face detection and recognition techniques. As the person enters the parked car to the driver's seat of the vehicle activates the hidden camera fixed in an appropriate position inside the vehicle. As soon as the image is acquired from the activated camera, the face of the person is detected. The extracted face is recognized using the LBPH. If the face of the person is detected as unknown then this integrated system will be sent the image of the person to the device of the owner via mail and the ignition system remains lock. When there will be authenticated person will seat on the driver sit then this ignition will unlock.

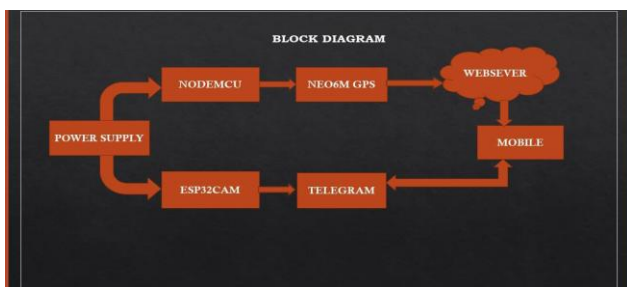
1.1. GPS AND GSM BASED VEHICLE TRACING AND EMPLOYEE SECURITY SYSTEM

A GPS & GSM Based Vehicle Tracking and Employee Security System combine the installation of an electronic device in a vehicle, with purpose-designed computer software to enable the company to track the vehicle's location. In vehicle tracking systems we use Global Positioning System (GPS) technology for locating the vehicle. Vehicle information can be viewed on electronic maps via the Internet or specialized software. Due to recently happened mishaps such as burglary, rape cases etc., the employee safety, esp. for the women employees, has become a number one priority for most of the companies. Even though the companies take good precautions to ensure that its employees are safe, there are some serious loop holes in the existing system. Firstly there is no full proof mechanism to track the outsiders to avoid this kind of problem we are going to implement a system that provides more security to the employee. The car Unit is placed inside the car .When the car picks up the employee; he/she needs to swap the RFID card. The micro controller matches the RFID card no. with its database records and sends the employee's id, cab id & the cab position co-ordinates to the company unit via GSM module. The GSM Modem will receive the message through GSM in the company unit. If employee finds himself/herself in a problem, he/she will press the button. Microcontroller will detect the action & sends a signal to the GSM which will coordinate with to the company unit and police. Microcontroller will also send a signal to the relay which will turn off the car ignition & stop the car. The GSM Modem will receive the message. This message will then be transferred to the computer through the serial port. The employee name, employee id & cab position coordinates (longitude and latitude) get displayed on computer. Once the data is obtained on the computer, it can be used for further analysis. In this way the company unit keeps a track of the vehicle. This will be a much simpler and low cost technique compared to others.

III. PROPOSED METHOD

Node MCU is an open source IoT platform, contains firmware which runs on the ESP8266 Wi-Fi SoC from Espressif Systems and the hardware is based on the ESP-12 module. One of the speciality of NodeMCU is that it can be simply programmed using Arduino IDE. NodeMCU have the advantages of both ESP-8266 and Arduino. It got enough I/O pins and can connect to computer using a micro USB cable. If we compare NodeMCU with a normal ESP8266-01 module- the ESP8266-01 module's I/O pins are limited to 2 and you cannot connect ESP8266 directly to your computer without an additional add on board. And if we compare NodeMCU with Arduino, NodeMCU have inbuilt Wi-Fi where Arduino don't have any inbuilt hardware for internet connectivity. So it's easier to use NodeMCU for the applications where it need less GPIO pins and also needs to connect to WiFi network.

Here in this IoT project, we will interface at GPS Module with NodeMCU ESP8266 and display the GPS data (Latitude, longitude, date and time) on a local webserverAnd by forwarding the port in the router, this webpage can be accessed from anywhere in the world to monitor the location of tracking vehicle where this system is installed.



V. RESULTS

In this the gps tracker is attached to the vehicle. Whenever the vehical is theft we can see in the map where the vehical is going with the help of GPS tracker attached to the vehicle.



Fig.1. GPS Tracker with Directions Shown in the Map

VI. CONCLUSION

In this project, an embedded automotive security system involving face detection is presented. The system can be used to reduce the increased vehicle theft and allows the owner to identify the theft face and location thereby having the vehicle under his/her control. The results obtained through the face detection shows that it can be relied upon to ensure safety of vehicle. The system is also reliable to be used in other authorization applications involving robotics, border management, banking security involving ATMs etc

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