

EFFECTIVE TRACKING OF MISBEHAVIORAL DRIVER & OVER SPEED MONITORING WITH EMERGENCY SUPPORT

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Abstract— A Vibration sensor device is fixed on the vehicle. If any accident occurs, vibration is triggered and then the location of the vehicle have been identified using GPS locator. The incident have been intimated immediately to the Life support and Patrol to recover the accident and suspect is to be traced using GPS locator. In particular, we can estimate the vehicle speed by integrating the accelerometer readings over time and find the acceleration errors and thereby leads to more variation between the estimated speed and the original speed. Extensive experiments are conducted so that Sen Speed is accurate and robust on real driving environments. On an average, the real-time speed estimation error on urban road is 2.1 km per hour, and an offline speed estimation error is as low as 1.21 km per hour, whereas an average rate of error in GPS is 5.0 and 4.5 km/hour respectively.

Index Terms—Vibration sensor, GPS, Vibration trigger, Accelerometer, Sen Speed.

I. INTRODUCTION

Internet of Things (IoT) is an ecosystem integrated with physical objects that are accessible through internet. The concept on IoT shows that it could be a person with a heart monitor or an automobile with a built-in-sensors, i.e. objects that have been implemented with an IP address, have an ability to collect and transfer data over a network without an intervention of the user. An embedded technology on the objects helps the user to interact with internal states or the outsource environment, which in turn affect the decisions taken.

II. BASIC DESIGN

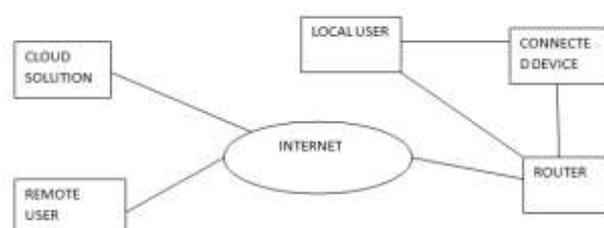


Fig.1.1 BASIC DESIGN

CLOUD SOLUTION: Cloud Solution is a type of Internet-based computing that provides shared computer processing resources and data to the computers and other devices on demand.

REMOTE USER: Operates a hardware device or accessing software from an off-site location.

LOCAL USER: Local user is one whose username and encrypted password are stored on the computer itself.

ROUTER: A router is a networking device that forwards data packets between the computers. Routers are implemented to perform the traffic that direct to the functions on the Internet.

Devices that are implemented on IoT and thereby the local user are integrated with the IoT device. Internet Service Provider integrates with cloud solution

III. RELATED WORK

A lot of research have been carried out in the field of IoT [1] demonstrated about the localization accuracy that exceeded from the available GPS-based inertial guidance systems. The paper have shown that GPS, IMU, and LIDAR data can be used to produce a high-resolution infrared remittance ground map that can be subsequently used for localization. [2] Discussed on Smartphone sensing of vehicle by the driver, which can facilitate many traffic safety applications. [3] made on the Classification of driving behavior, allowed a finer perception of real traffic, as it helped to distinguish and interpret the way that drivers react to different traffic states and situations. [4] have made an impact on Understand and recognize the driving events that fall into these categories that can aid on vehicle safety systems. Potentially aggressive behavior of the driver lead to the cause of traffic fatalities in the United States. More often than not, drivers were unaware that they commit potentially-aggressive actions daily. [5] studied on the vehicle speed estimation based on a single sensor which is one of the hot spots. This paper was integrated on the magnetic vehicle detection technology. The distribution statistics of the vehicle length on urban road network, was then analyzed. Under the reasonable assumptions, the vehicle class composition identification

based on mean speed estimation algorithm had been forwarded.[6] The paper focussed on An effective approach for the reduced traffic fatalities on building automatic traffic accident detection system, secondly, reduced the time between when an accident occurred and the first emergency responders were dispatched on the scene of the accident. [7] Effect on the Automotive traffic monitoring using problem on the vehicles with Global Positioning System receivers had promised on the significant improvements on the cost, coverage, and accuracy. Several approaches had been raised on privacy concerns because they required the participants to reveal their positions to an external traffic monitoring server. [8] The work had been implemented in the carrier's infrastructure with Network Measurement Reports that can be obtained by a base station or on a mobile phone with signal strength reading by the handset and depend on the implementation choices, promised lower energy consumption than Global Positioning System (GPS) receivers.[9] The paper have shown on GPS signal availability and DGPS positioning accuracy for two-dimensional navigation in two types of urban areas, namely a downtown type with buildings up to 50 stories, and a residential area with two-story housing and tree-lined streets, were investigated using three multi-channel C/A code receiver types, including a fast-reacquisition narrow co-releator spacing receiver.[10] In this paper, a three-stage algorithm to calibrate roadside traffic management cameras and track vehicles to create a traffic speed sensor . The algorithm transformed the image that were co-ordinated from the vehicle tracker into real-world coordinates using simple camera model. The final results that were demonstrated the ability of the algorithm to produce good estimate of the mean vehicle speed in a lane of traffic.[11] An effective approach for the reduced traffic problems were, first build an automatic traffic accident detection system, second, reduced the time between when an accident occurred and when the first emergency responders were dispatched on accident .Recent methods were used to built in vehicle automatic accident detection and notification system.

IV.GPS AND ANDROID CONNECTIVITEY

GPS is an ingenious design. GPS satellites are "low-earth-orbit" satellites. Each satellite broadcast on a specific channel, so that the mobile phone can intimate immediately which satellite it receives the signal.

In this project we have implementing GPS for tracing out the location of the vehicle, GPS is often integrated with the Android mobile phones about the receive of the location information at remote place.

Mobile phones with a GPS receivers have communicate with the units among 30 Global Positioning Satellites on the system. The built in receiver releates the current position using the data from at least three GPS satellites and receiver.GPS can determine the exact location by performing the calculation based on the intersection point of overlapping spheres determined between the satellites and the receiver to create overlapping "spheres" that intersect in a circle. The cross point of signal is the exact location on the ground.

V. PROPOSED SYSTEM

The Proposed system of the Project is to analyze the location of the accident and trace the location of hit and run off the driver.

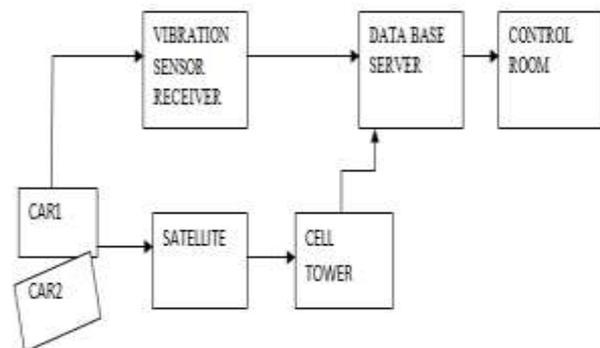


Fig. 1.2 PROPOSED ARCHITECTURE

Vibration trigger are implemented on the vehicle, when two vehicle colloid each other the vibration trigger is ON state and the busser in the vehicle gets into an active state .

When one of the vehicle is turned OFF state and other is in active state,then some accident has occurred , the location of the car is monitored by using the data in the database server.

The location of the accident is then informed to the control room and the location of accident is forwarded to the ambulance and sent to the police to trace the hit and run off the driver.

The location and condition of the car are monitored using Gyroscope.

Gyroscope: Gyroscope is a technology which is used in the vehicle, mobile phones etc. It is implemented for finding the location angle of the car.

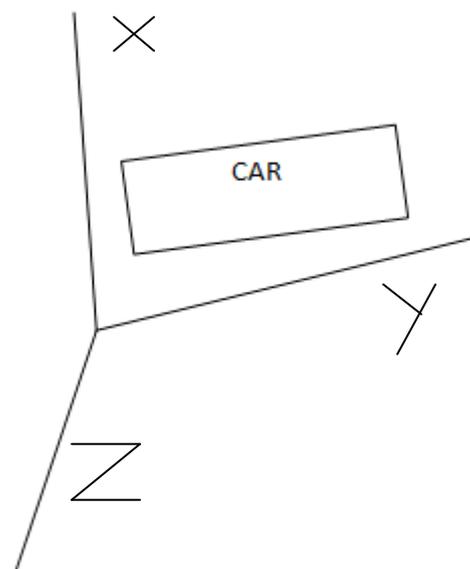


Fig.1.3 GYROSCOPE CO-ORDINATES

VI. PROPOSED WORK

In the proposed project, the details of the vehicles are collected in the form of data sets. The datasets contains vehicle number, driver name or owner name of the car. The database are implemented by using MySQL Administrator and MySQL Query Browser.

MySQL Administrator: Database Administrators (DBAs) use specialized software to store and organize data. The process may include capacity planning, installation, configuration, database design, migration, performance monitoring, security, troubleshooting, backup and data recovery.

MySQL Query Browser: MySQL Query Browser is a free official GUI for the popular MySQL database server. It fulfills the gap in MySQL Administrator by allows us to implement queries directly onto any schema that we choose. We can either write the queries by hand or use the limited query generation that is the process of MySQL Query Browser.

In the proposed project, the database is implemented for data set entry in the database server, if any accident occurs between two vehicles the vibration sensor trigger is activated and the database server receives an alert message, in which vehicle details ,location of accident are intimated to the ambulance for life support and to the patrol to trace hit and run off the driver.

VII .Conclusion

In this paper, we address the problem of performing accurate vehicle speed estimation in urban environments to support pervasive vehicular applications. We employ smart phone sensors to sense natural driving conditions to achieve high estimation accuracy. In particular, we propose a system, identifying the location of accident and tracing the location of hit and run off the driver.

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