

## IOT Based On-Road Vehicle Breakdown Assistance

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### ABSTRACT

#### Article Info

Volume 6, Issue 4

Page Number: 517-521

Publication Issue :

July-August-2020

#### Article History

Accepted : 16 Aug 2020

Published : 23 Aug 2020

Our lives got simpler with the Quick accumulation of innovation and framework. The coming of innovation has likewise risen the traffic perils and the road accident occurs over and again which causes gigantic death toll and property on account of the poor emergency offices. Due to chatting/talking on the Cell phone during driving and furthermore because of rash driving of the drivers. Numerous lives could have been spared if emergency service could get accident data and contact in time. Vehicle accidents are one of the most driving reasons for setbacks. The time between an accident event and the emergency restorative work force are dispatched to the accident area is the significant factor in the endurance rates after an accident. By wiping out that time between an accident event and the specialists on call are dispatched to the scene diminishes death rates with the goal that we can spare lives. And another issue in our daily life we don't know when and where we get stuck on the road and we don't know where we are and we also won't be able to find the nearest mechanic location. This project targets to develop an android application that will help the user to register through installing the application and can get access to the nearest mechanics location and contact him personally this uses the internet and messages permissions to go on with the application. This application is an android app which can be run on any android compatible tablets and mobile phones. Now with this day by day advancing technology we get access to the mechanic and mechanic gets access to the location user through the GPS location send to him and them both will save a lot of time and that's how it is done and this can be used anywhere and at any time. In this paper, we are center about all the current framework or analogies for accident revealing and anticipation to order another framework which is improved and succinct of existing properties. Overall, we are pondering the framework which decreases the time of activity, for example, suggestion to police, implication to family, intimation to hospital and a lot more angle.

**Keywords** : Accident Detection, Vehicle Breakdown, Accident Prevention, Location Tracking, GPS/GSM, IoT.

## I. INTRODUCTION

In the daily life we all use android devices in all over the world among them there are many applications which we can use daily. There are two groups of applications that are used for drivers and other people. It is used for health and monitoring navigation. It can optimize fuel detection and road hazards. So in life the first priority of individual is all about the safety. An accident is an event that can happen with anybody. It is an event which we cannot assume and predict anyhow. Accident is a specific type that can happen with any one and incidents have one of the major causes of traffic at daily basis. It is a combination of incidents and accidents. The risk of accidents grows daily by daily. In the system incidents are raised. Accident duration prediction becomes a very important role in life. It is a reliable duration that can help further. The efficiency of the management system is used in this type of problem that can occur daily. The risk of the life is in a very crucial stage. In this paper we can analyze the real time problem. Traffic has become the national occasion of the collision. Poor emergency occurrence is a reason for the high number of traffic and the immense rate increase in our nation. Various mechanical and sociological advances are decreasing traffic fatalities during the older decade of the nation. Every moment that can harm and injure that individual doesn't get that data of efficiency. In this the microcontroller and the GPS, GSM module offers the alarm section of the part. And the alarm message can send that section. Which can be sent to rescue team that can initiate the effort for the people. Be the constraints because the data can send for the help. This is the impact of successful warning and crashes, in this framework find a vehicle that can assist the rescue team. When any incident can occur on that area they can get assist by the team so as to recognize the impact of this project is very high in intensity. As far as the impact of impact warning crash and other moderation of the data are occur then it

will happen. In this framework which would find a vehicle that started to attempt the data of the accident. Mobile software used for all the detection that can save the life of people. It is possible to monitor all the things.

## II. LITERATURE REVIEW

Gradually traffic goes increases due to this accident increases for avoid accident problem several papers have been studied [1]. This paper worked out on accident detection and accident prevention. IR sensors are it detect the accident and alert the people by sending SMS using GSM module. Accident prevention by using IR sensors that could warn the driver about neighbouring vehicles when distance between them beyond the threshold value. This all contain in SDLC methodology which include Analysis, planning, design, implementation and maintenance.

In one of the papers [2], established the connection between OBD-II adapter and Bluetooth. Vehicle connect to the OBD-II adapter for diagnose the data like fuel efficiency calculator, maximum distance cover in minimum amount of fuel. OBD-II adapter connect with Android smartphone from Bluetooth. Adapter collect the data and show specific data on android screen. It can detect the location of parking and fault in vehicle. It can detect vehicle crashing and incoming call automatically disconnected. It also instructed where it has to change the gear of vehicle. Paper [3], In this paper Author proposed new smart vehicle over speed detector using IOT give the alert information to concerned authorities while over the speed limit. It measure the vehicle speed with speed app using radar. It recognised the road accuracy based on road name inserted in Google map. It used Electronic tracking device runs in 12 V lithium batteries with network of GPS sensing and IOT implementation.

Paper [4], This paper aims to investigate the design and development of next generation roadside assistance services for ITS and future smart cities. IoT and M2M communications are considered as two main pillars of smart cities [2]. Thus, we propose an IoT Framework for intelligent roadside assistance system that can provide wide range of assistance to drivers and passengers. We have identified research and engineering challenges related to the proposed IoT framework. Our research contributions in this paper are - (i) creating a coexistence of distributed data analysis (ii) horizontal IoT application development (iii) IoT and Web of Things (WOT) standard based implementation to break data silos and (iv) open interfaces and APIs allowing third party developers to create inexpensive roadside assistance application. The paper focuses on the IoT based next generation roadside assistance services for ITS and smart cities. The currently deployed such services pose many challenges and must be upgraded to an open, secure and standard system. This will unleash the true consumer potential of such services. As for future work, we would evaluate the performance of the complete prototype and deploy it in a real test bed.

Paper [5], In this paper, we are dealing with Telematics/ITS service based on new IT technologies using smart roadside server in smart road systems, and we focus in particular on the system architecture and components including service processing algorithm and issues. This paper is given as follows: Section II introduces the state of the art related to project using roadside server in ITS part. In section III, we proposed a smart road side server's framework and two applications based on traffic and weather conditions. Here, we suggest the system model about roadside server, processing algorithm and the methods for driver assistance/safety alarm in section IV and V, respectively. In section VI, we state the conclusions of this paper and provide perspective for future work.

### III. PROPOSE SYSTEM

The proposed design can consist of various component such as IR sensor, crushing switch, GSM module, LCD, LED and RF module transistor and receiver. The IR sensor and crushing switch is responsible for detecting the accidents and sends the command to the microcontroller. GSM and GPS are the device that sends sms and location to the users. Our system is coupled with an android app called vehicle break down assistance. Our system has the facility where machine and users and register themselves. If there is any vehicle break down the user can raise a request and nearest mechanical can assist them on the spot this online machine locator reduce work and can easily find the Mechanics from various location.

Our system has the feature to detect the over speeding whenever speed of the vehicle will go above 80 km hr the buzzer will be raised thus alerting the driver. Our system has a special function called DND mode in this feature the mobile of the driver will automatically change to salient mode, when the speed of the vehicle cross the 15 km hr mark it will be switch to normal mode when the speed will be reduce below 15 km hr. In case of accident of vehicle the alert msg will be send to the nearest hospital, police station, and one of relative of the driver. This feature very crucial for providing early medical assistance to the victim.

### IV. CONCLUSION

An accident is an unexpected and inadvertent occasion. In this day and age road accidents perspective among the main source of human death, Road wellbeing for driver is a fundamental necessity of society, As the Number of vehicles increment step by step, Collision of vehicle additionally increments broadly, in this circumstance this paper satisfies the reason for sparing lives first by

examination the escape clause in the current frameworks. A framework is required which the framework which decrease time of activity, for example, suggestion to police, implication to traffic police, insinuation to family, hint to hospital and a lot more viewpoint. In this paper, we presented the design and implementation of android application called IOT based On-Road Vehicle Breakdown assistance system, with which providing emergency road side breakdown assistant on the spot. It is easy to use & free of cost on android store. Thus, it is time a time saving as well as cost efficient application. So, we can conclude that the proposed system can be used to reduce human efforts and luxuriate human lives, hand in hand, with the modern technology.

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**Cite this article as :**

Megha Dongre, Shalini Verma, Achal Dighore, Sanjeevani Tumdam, Kalyani Dhote, Prof. Milind Tote, "IOT Based On-Road Vehicle Breakdown Assistance", International Journal of Scientific Research in Computer Science, Engineering and Information Technology (IJSRCSEIT), ISSN : 2456-3307, Volume 6 Issue 4, pp. 517-521, July-August 2020.

Journal URL : <http://ijsrcseit.com/CSEIT20631059>