International Journal of Scientific Research in Science, Engineering and Technology
Print ISSN: 2395-1990 | Online ISSN : 2394-4099 (www.ijsrset.com)
doi : https://doi.org/10.32628/IJSRSET207426

Smart Accident Detection Device

Hare Krushna, Nusrat Mohammad, Susmita Mundhe, Suhas Kothawale

Department of Computer Engineering, JSPM's Imperial College of Engineering and Research, SPPU, Pune, Maharashtra, India

Article Info
Volume 7 Issue 5
Page Number: 30-33
Publication Issue :
September-October-2020

Article History
Accepted : 20 Sep 2020
Published : 30 Sep 2020

ABSTRACT

(We live in a society where accidents happen daily and regularly due to which people loss their lives because they didn't get the medical assistance at right time. In India more than one and a half lack persons die due to road accidents per year. Ina solution to this we have developed Smart Accident Detection Device (SADD) which provides medical assistance in time and save the valuable human life. This gadget can be fitted into Vehicles like Bus, Car and so on. Whenever any type of accident is detected this device inform to the nearest Hospital as well as police station, then after identifying patient it also informs to the Patient's family member, through which we can save the human life).

Keywords :- Accident Detection, Vibration Sensor, Impact Sensor, GPS, GSM, Finger Print Scanner, Micro-controller.

I. INTRODUCTION

Car accidents happen daily and regularly these days due to which people lost their lives. The major reason behind these accidents is carelessness and fault of the driver. Another reason behind this type of accident is our developing technology for example Mobile phones etc. While using a mobile phone many people get distracted, means they don't give their 100 percent concentration on driving and miss traffic signals, because they are not really concentrating on driving. The way toward dialing or picking up the telephone can cause them to lose control of the vehicle too. According to the research, about 3000 + people died per year in road accidents every year while millions are injured or disabled each year. To solve this type of accident problem we have developed a Smart Accident Detection Device (SADD) which is helpful for detecting an accident and taking appropriate action on it by sending SMS to the nearest Hospital and Police Station by using the K-NN (K-Nearest Neighbors) Algorithm.

This Smart Accident Detection Device detect automatically whether the accident happened or not and it also detect its seriousness. Seriousness of accident means that whether there is actually need of Medical assistance or not, because it may happen that a minor accident happened which can be avoidable.

II. LITERATURE SURVEY

Several researchers have been introduced in the same field of research as the SADD system. Some of them are as follows.

The authors in [1] implemented auto-detection unit system that immediately notifies an Emergency Contact with the help of GSM and also send location using GPS. GPS will trace the accident place and GSM will send that location to the nearest hospital. It can use GSM modem to send the accident location to the Alert Service Center.

In 2] authors presented a methodology that accelerometer; gyroscope and force sensor measure the behavior of the car and inputs the data to the embedded processor where the signals are processed. The processor at that point, utilizing the Bluetooth module, sends the aligned information to the Smartphone. The fuzzy logic decision help – customized in the mobile application – receives the handled information and makes a decision of detection or no detection. At detection, the Smartphone application, through the data network, sends a text message to a third party (emergency contact/public safety). The instant message incorporates the GPS area, the time and the date of accident location.

In the 3] the authors have made an attempt to develop a car accident detection and communication which will inform the hospital system.

III. EXISTING SYSTEM

The existing system which is available for detecting the accident is by using Smartphones, which will detect whether the accident happens or not by using sensor which can take action as per their values varies randomly. Smartphone based accident detection application have both advantages and disadvantages. Creating a Smartphone based accident detection system is difficult or complicated, because phones can be dropped and the phones are not directly connected to the vehicle. The drawback of this type of system is that it sends the message to the alert Service Center or registered mobile number. Then alert Service Center contact nearest hospital by using accident location information., which makes delay.

IV. LIMITATION OF EXISTING SYSTEM

1. When an accident is detected the alert message sent to the Service Center then they contact with the nearest hospital, it makes delay. 2.Relatives of that specific patient didn't get any information about the accident. 3. Seriousness of accident cannot be determined using current method. 4. They doesn't provide any guarantees that ambulance reach to the exact location where the accident happened.

V. PROPOSED SYSTEM

In this proposed system we have implemented a Smart Accident Detection Device. This system detects an accident automatically and also its seriousness. Seriousness of accident means that whether there is actually need of Medical assistance or not, because it may happen that a minor accident happened which can be avoidable. Whenever accident happens this Smart Accident Detection Device provide medical assistance in right time and save the valuable human life.

In the proposed system we have created one website on which all the Hospitals and Police station have been registered. And also, User has to register them on this website with basic information which is useful at the time of treatment of patients.

In this Proposed system we have use following concept.

1. GPS and GSM.
2. Vibration Sensor.
3. Impact Sensor.
4. Finger Scanner.

Proposed system works in a three module which are as follows:

Module 1: Vehicle Module

When an accident is happens the vibration, sensor detect it and send the SMS containing location to the nearest hospital and police station using the GSM and GPS.

One impact sensor is also fitted in the Vehicle which will detect the seriousness of the accident.

Module 2: Ambulance Module

This module mainly focuses on finger print scanner, the finger of the patient is scanned through scanner to identify the patient. It helps to fetch all the information which is already registered on website, which is helpful in patient's treatment. With the help of GPS location ambulance is capable to reach at the accident location to get the patient.

Module 3: Patient Module

Third module is the Patient module which consist one website, the customer who are going to purchase SADD has to register themselves on this website. Customer give all the needed information like name, blood group, finger scan, emergency number and etc. This all data is stored in database, which can be accessed by ambulance module.

VI. PROPOSED SYSTEM ARCHITECTURE

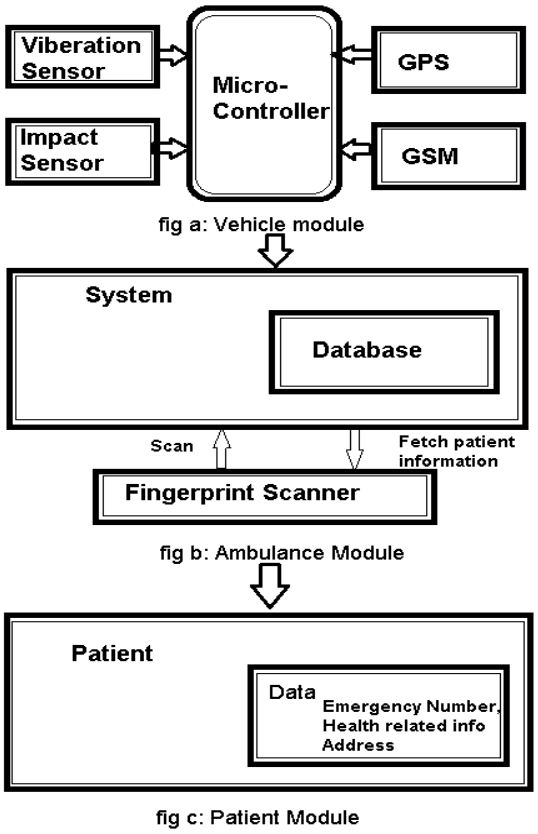

Fig: Proposed system architecture

VII. CONCLUSION

Thus, we have developed a SADD system-an automated system which detect an accident and sent SMS to the nearest Hospital and Police station. This system provides medical assistance in time and save the valuable human life. This gadget can be fitted into Vehicles like Bus, Car and so on. GPS provide the exact location of accident so the ambulance reach to the patient as soon as possible. This system also provides some basic information by scanning the finger of the patient on Finger scanner which gives us the basic information which is helpful for the patient treatment. Thus, the developed system provides a better solution in case if an accident is detected. The Ambulance tracking system help in saving many lives. It also sends current location using GPS system to the server database. The server thus sends location and status data to the doctor.

VIII. REFERENCES

[1]. Md. Syedul Amin, Jubayer Jalil, M. B. I. Reaz, "Accident Detection and Reporting System using GPS, GPRS and GSM Technology.
[2]. Asad Ali and Mohamad Eid "An Automated System for Accident Detection".
[3]. Nagarjuna R. Vatti,Prasanna Laksmi Vatti, Rambhau Vatti Chnadrshekhar Garde. "Smart road accident detection and Communication system".
[4]. Dr.D.Selvathi, P.Pavithra, T.Preethi, "Intelligent Transportation System for Accident Prevention and Detection".
[5]. Osamu Takizawa, Masafumi Hosokawa, Ken'ichi Takanashi, YasushiHada, Akihiro Shibayama, Byeong-pyo Jeong, "Pinpointing the place of origin of a cellular phone emergency call using active RFID tags".
[6]. Lella Sai Krishna1, Samineni Vijay, M.Pushpavalli, P.Sivagami," Advanced Automation Control in an Ambulance under Emergency Condition".
[7]. Dhruvesh H. Patel, Parth Sadatiya, Dhruvbhai K. Patel, Prasann Barot, "IoT based Obligatory usage of Safety Equipment for Alcohol and Accident Detection".
[8]. Naji Taaib Said Al Wadhahi, Shaik Mazhar Hussain, Kamaluddin Mohammad Yosof, Shaik Ashfaq Hussain, Ajay Vikram Singh,"Accidents Detection and Prevention System to reduce Traffic Hazards using IR Sensors".
[9]. Prakash K. Ukhalkar, Dr. Rajesh N. Phursule , Dr Devendra P Gadekar, Dr Nilesh P Sable. (2020). Business Intelligence and Analytics: Challenges and Opportunities. International Journal of Advanced Science and Technology, 29(12s), 2669-2676
[10].Sable Nilesh Popat*, Y. P. Singh," Analysis and Study on the Classifier Based Data Mining Methods" in Journal of Advances in Science and Technology | Science & Technology, Vol. 14, Issue No. 2, September-2017, ISSN 2230-9659.
[11].Siddharth Tripathi, Uthsav Shetty, Asif Hasnain, Rohini Hallikar,"Cloud Based Intelligent Traffic System to Implement Traffic Rules Violation Detection and Accident Detection Units".

Cite this article as :

Hare Krushna, Nusrat Mohammad, Susmita Mundhe, Suhas Kothawale, "Smart Accident Detection Device ", International Journal of Scientific Research in Science, Engineering and Technology (IJSRSET), Online ISSN : 2394-4099, Print ISSN : 2395-1990, Volume 7 Issue 5, pp. 30-33, September-October 2020. Available at doi : https://doi.org/10.32628/IJSRSET207426
Journal URL : http://ijsrset.com/IJSRSET207426