

# A Survey on IoT Based Real Time Healthcare Emergency System by using Biometrics

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**Abstract** - The main idea behind the projected system is to supply a swish own for the machine to accomplish in the hospitals in time and reduce holdup. This system will be useful for monitoring ambulance location using Google map and GPS, as the Numbers of road accidents in India are in huge quantity. To prevent this problems, using advance wireless technology of GPS, it is possible to provide medical facility to accident victim within very less period of time to save accident victims life. Keep of ambulance location and status of patient during the critical hour of patient transportation helps to improve medical care. The main problem at the time of transportation of patient is traffic. It is very important to reach hospital within very short time. System can display live location of ambulance and patient heart beat rate and temperature of patient body and this data send to the hospital. After getting SMS hospital can prepare their staff for proper and fast treatment of coming patient. After tracing the ambulance proposed system convert all signals green. System stores the patients previous health information that will help to get better treatment. Can be to fetch Patient's data biometric device is used which will be available in ambulance vehicles.

**Keywords:** Body Area Networks, Health-Monitoring, Wearable Systems, Biometric sensor

## 1. INTRODUCTION

The ARDIUNO system is employed to change the traffic signal upon its arrival at traffic light junction which might save a lives at crucial time. To avort unessential traffic signal changes. In the current scenario itself, transportation of a patient to hospital in emergency conditions looks quite straightforward however in actual it's terribly troublesome throughout peak hours. Moreover, true is gets worse once emergency vehicles have to be compelled to anticipate alternative vehicles to allow manner at intersections with traffic signals. As the survey aye ninety fifth of the guts attack cases are often treated, if the machine will reach the hospital at current time while not stucking into the traffic. In forthcoming it may get even poor. In this cause Recovery action got to be taken instantly. In our over populated environment, there is a actual need for this paper for the society to make easier day to day transportation. This paper can facilitate to scale back blockage of emergency vehicles in traffic and helps to supply immediate recovery. Mobile app to indicate necessary and non-necessary situation of machine. GPS to trace the closest traffic light post to the machine and to send the app knowledge thereto explicit

signal post. The main objective is distrubution of knowledge between patient and hospital. This info involves patient's medical knowledge, current condition and therefore the most vital issue location of machine. When the patient or his career has precise plan once the machine is incoming, they'll take correct action in step with feedback received. Similarly if the hospital is aware of once the patient is incoming, they'll indurate it with efficiency. The detector is capable of causing ambulances location to a server, from wherever it are often accessed by the hospital and therefore the patient. This is the core part of the proposed Ambulance Tracking System (ATS), which provides real time location updates of ambulance to the hospital and to the patient who has requested the ambulance. In addition to the current, the system conjointly provides the practicality of sharing patient's medical knowledge with hospital, in order that they will take correct measures beforehand.

## 2. LITERATURE SURVEY

**2.1 A survey on wearable sensor-based systems for health monitoring and prognosis**, [2] in this paper development of wearable biosensor systems for health observance has garnered immeasurable attention within the scientific community and also the trade throughout the last years. Mainly intended by increasing attention prices and propelled by recent technological advances in miniature bio sensing devices, sensible textiles, electronics, and wireless communications, the continual advance of wearable sensor-based systems will potentially transform the longer term of attention by enabling proactive personal health management and omnipresent observance of a patients health condition. These systems will comprise numerous styles of little physiological sensors, transmission modules and process capabilities, and may so facilitate low-priced wearable unnoticeable solutions for continuous all-day and any-place health, mental and activity standing observance.[2] This paper tries to comprehensively review this analysis and development on wearable biosensor systems for health observance. A variety of system implementations square measure compared in associate approach to spot the technological shortcomings of this state-of-the-art in wearable biosensor solutions. An emphasis is given to multi parameter physiological sensing system styles, providing reliable important signs measurements and incorporating period of time call support for early detection of symptoms or context awareness. In order to judge the maturity level of the highest current achievements in wearable health-monitoring systems, a collection of great options, that best

describe the practicality and also the characteristics of the systems, has been hand-picked to derive a thorough study.[2]

### 2.1.1 Disadvantage

- 1 It requires more time.

### 2.2 Health Monitoring and Management Using Internet-of-Things (IoT) Sensing with Cloud-based processing: Opportunities and Challenges,

In this paper, Among the array of applications enabled by the net of Things (IoT), sensible and connected health care may be a significantly necessary one. Networked sensors, either worn on the body or embedded in our living environments, change the gathering of made info indicative of our physical and psychological state. Captured on a continuous basis, aggregated, and effectively mined, such info will evoke a positive transformative modification within the health care landscape. In explicit, the supply of knowledge at heretofore undreamed scales and temporal longitudes in addition to a brand new generation of intelligent process algorithms can: (a) facilitate an evolution within the practice of medication, from the present post facto diagnose-and treat reactive paradigm, to a proactive framework for prognosis of diseases at AN inchoate stage, in addition to bar, cure, and overall management of health rather than illness, (b) change personalization of treatment and management choices targeted significantly to the precise circumstances and wishes of the individual, and (c) facilitate cut back the cost of health care while simultaneously improving outcomes. In this paper, we highlight the opportunities and challenges for IoT in realizing this vision of the future of health care. [3]

### 2.2.1 Disadvantage

- 1 No device or sensor in ambulance for checking patient health.

### 2.3 Internet-of-Things Security: Denial of Service Attacks,

Internet of Things (IoT) may be a network of sensors, actuators, mobile and wearable devices, merely things that have process and communication modules and may connect with the web. In a few years time, billions of such things can begin serving in several fields among the conception of IoT. Self configuration, autonomous device addition, Internet connection and resource limitation features of IoT causes it to be highly prone to the attacks. Denial of Service (DoS) attacks which have been targeting the communication networks for years, will be the most dangerous threats to IoT networks. This study aims to research and classify the DoS attacks which will target the IoT environments. In addition to this, the systems that try to detect and mitigate the DoS attacks to IoT will be evaluated. [4]

### 2.3.1 Disadvantages

1. No tracking device in ambulance so ambulance location unknown.

### 2.4 Hybrid GPS-GSM Localization of Automobile Tracking System [5].

An integrated GPS-GSM system is projected to trace vehicles exploitation Google Earth application. The fig show remote module includes a GPS mounted on the moving vehicle to spot its current position, and to be transferred by GSM with alternative parameters nonheritable by the automobile's data port as AN SMS to a recipient station. [5]

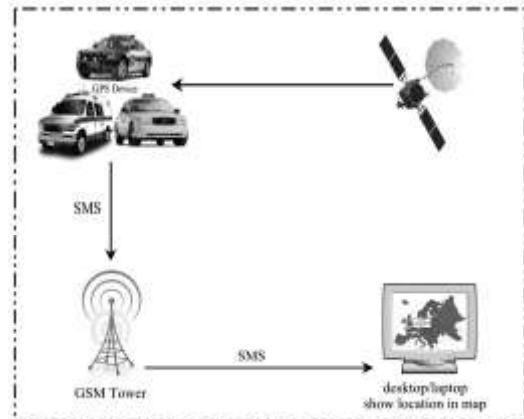


Fig 1. The block diagram of GPS tracking system

### 2.4.1 Disadvantage

- This system only monitor current location, not using wireless health care sensor.

### 2.5 Smart Real-Time Healthcare Monitoring and Tracking System using GSM/GPS Technologies, [6]

Health observation systems have rapidly evolved recently, and good systems are projected to observe patient current health conditions, in our projected and enforced system, we tend to target observation the patients blood pressure, and his body temperature. Based on last decade statistics of medical records, death rates because of hypertensive heart condition, shows that the vital sign may be a crucial risk issue for hardening of the arteries and ischaemic heart diseases; thus, preventive measures should be taken against high blood pressure which provide the ability to track, trace and save patients life at appropriate time is an essential need for man kind .Here in this system it can track, trace, monitor patients and facilitate taking care of their health; therefore economical medical services may be provided at applicable time.[6]

### 2.6 Design and Evaluation of an IoT enabled Secure Multi-service Ambulance Tracking System,[7]

The Internet of Things (IoT) systems enable the communication of a diverse suite of one secure channel(SMS),through which key exchange occur and objects., When we known that security is one of the major problems in these systems. It is the mainly due to the fact that IOT devices work with energy budget and very limited computational power and conventional cryptographic techniques will be too expensive .At this end, they propose a novel hybrid security protocol and demonstrate its suitability through a real time ambulance service tracking application. First, discuss practical problem that is of lack of information shared during transfer of a

patient in ambulance to hospital. Here we provide a solution to this with an IoT enabled ambulance tracking system. Second, we provide a secure protocol to tracking system for IoT device. This protocol uses implementation of AES-CCM optimized for IoT devices. AES-CCM provides the basic communication requirements such as confidentiality, authentication and data integrity. The system work in a Server-Client model and we use dual channel for communicate to the IoT module. One insecure(Internet), through which encrypted data is transferred and one secure channel(SMS), through which key exchange occur. In finally, we present the evaluation metric of the proposed system including memory energy consumption and memory footprint. [7]

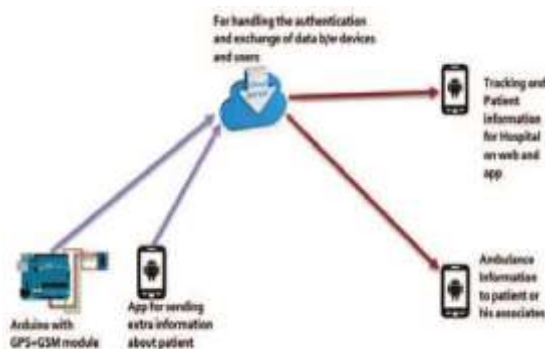


Fig 2. Layout and data flow of the Ambulance Tracking System.

**2.7 Distant Auscultation System for Detecting Lung Sounds of Patients on Ambulances**, [8] The sound of the siren of the ambulance is for the safety of the road transportation, interferes the auscultation of the lung and heart sounds. The system implementation is include by (1) ACER Aspire 17 notebook as a server in right side; (2) HwaWei Amazing A6 smart mobile as a hot point in the middle; and (3) ACER Aspire 5 notebook as a client which the settings include IP address of host computer, and client, read and, write privileges to the data sockets, and running of NI data socket manager, and data socket server. Therefore, the parameters in the real-time DAS are verified as the better for prepare to the services on the ambulance. [8]

**2.8 Delay-Aware Accident Detection and Response System Using Fog Computing**, [1] IoT based Systems have begun to be used to detect and report roadside incidents. The systems designed for this purpose involve the use of the cloud to compute, manage, and store information. It define the problem of latency, fog computing has emerged as a middleware paradigm that brings the cloud-like resources closer to end devices. An Android application is developed that uses smartphone sensors for the detection of incidents. When an accident is detected, a plan of action is start. At the beginning nearby hospital is located using the Global Positioning System &#40;GPS&#41;. The emergency department of the hospital is notified about the accident that

directs an ambulance to the accident site. In addition, the family contacts of the victim are also informed about the accident. All the demand of computation is performed on the nearby available fog nodes. Moreover, the proposed scheme is simulated using iFogSim to evaluate and compare the performance using fog nodes and cloud data centers. [1]

**2.8.1 Disadvantages**

1. System only monitors current location, not using wireless health care sensor.
2. Based on same technology different Hospitals monitoring unit are not connected to each other using GPS and GSM module.
3. Need to solve the problem of traffic to get the medical facility to accident victim within short period of time.
4. No device or sensor in ambulance for checking patient health

**3. CONCLUSION**

The aim of system is helpful for crucial patient data simply resolve. It provides transportation unit data and additionally as patient health data, that is helpful in any emergency treatment for doctors. The motorcar chase system will facilitate in saving several lives. It can even send current location mistreatment GPS system to the server information. The server in turn sends location and status information to the doctor.

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