# A Unique Approach for Smart Ambulance using Intelligent App Control System

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*Abstract—* Today the major issues for any highly crowded metropolitan cities or any small cities is road traffic congestion. Road traffic congestion causes traffic jams, which affects major services and ambulance service is one of them. As a solution, this paper has come up with "Intelligent app controlled GPS enabled smart ambulance". To implement the intelligent control system, it makes use of Machine Learning technology and a unique model of ambulance which adjust its shape according to traffic. The proposed system uses an android app that connects a user (patient) with the nearest ambulance and that ambulance which is fully automatic controlled by server gets the shortest path using GPS and Google maps and then reach to the patient. After picking the user/patient in case of emergency it automatically found the nearest hospital listed on Google map and alert message sent to that hospital. To make aware public about this service, the "Road safety Authority of India" will advertise. Also there will cloud management of the details to avoid misuse. The app is linked with AADHAR so that no one can misuse and also the health track will be stored on cloud. It acts as a lifesaver project as it saves the time in emergency period. Because in 90% cases the death cause is delay in either reaching the hospital or traffic congestion.
*Key words:* Machine Learning, Cloud Database, Mobile App, Automated Ambulance, GPS Tracking System, AADHAR

## I. INTRODUCTION

The main idea is to reduce the delay caused by the traffic congestion and reach the hospital in time. The ambulance which is designed for this is fully automated which works on robotics and supervised machine learning algorithms that can take decisions itself and have a special design. The software installed in ambulance reads the request of user and then find the shortest path to reach there. Then the patient bring into the ambulance and then it automatically drop it to nearest hospital. This could save a life at critical time. The ambulance consist of GPS and backend software that works upon it to manage the requests by the verified app that is linked to the AADHAR of requestee to avoid misuse. The aim of the paper is to get to the hospital in minimum time even through the traffic congestion and lack of manpower because it is fully automatic and user friendly. This aim can be achieved by two technologies: - Mobile app with cloud access- to authenticate conditions and automatic ambulance that can work in absence of drivers.

## II. LITERATURE REVIEW

With the increase in Industrialization, Population and urbanization day by day there has been an immersive growth in the number of vehicles on the road resulting to tremendous traffic congestion. With the growth in traffic, there is need to provide with better traffic management by implementing several smarter methods to control traffic congestion on roads and at intersections. The earlier existing system proposed in [1] makes use of embedded technology for Intelligent Traffic Control. In this, we design a smart ambulance that work on supervised machine learning means that can take decision itself. The main aim is that whenever there is any ambulance needed the user/customer/patient/requestee open the app and make request .Then the smart ambulance find the route itself using machine learning algorithms and reach to the patient door.. Now the patient enter the OTP send on the app and then the smart ambulance automatically drop to the nearest hospital using Google Map listing and Machine learning. This proposed system doesn't have any other alternative method in case of technology failure such as embedded technology is mostly hardware based and failure in hardware would outcome into complete system failure. The proposed work in [2] makes use of Image Processing Technique. Over here, at first a film of lane is captured by smart camera which decides the traffic and congestion on the road and adjust the shape. In order to have information about the traffic density these images are processed efficiently using the matlab software and the controlled on these basis. The use of GPS-GPRS vehicle tracking system was designed and developed in [3]. Also in this model AADHAR no. is used to verify the user as all the details about the user is stored in Cloud when they install or sign up. This will help to track the records and data mining about the user information and also to avoid the misuse of this service.

## III. TECHNOLOGIES

The intelligent app control system comprises of:

*A. Android App*

It has four options: -
*1) Register*
The user/customer/requestee sign up after successful installation.
*2) Request of Ambulance which is of two types.*
*3) Emergency*
In case of an emergency the automated ambulance find the shortest route and reach to the patient/user, Pick up and find the location of nearest hospital and drop there and also send the emergency message to that hospital's server.
*4) Non-emergency*
In this case, the user/customer/requestee request for an ambulance, ambulance reach to the destination, pickup done and drop them to the hospital which they choosen on the app while requesting for by paying the genuine fare.
*5) AADHAR*
It is a unique identity of any citizen of our country which help the app to get all the information of user using a single data. That help our government in data analysis in medical science

field. It also consist of sever benefits that would be updated timely.

### B. Smart Ambulance

This ambulance is quite different from other ambulances as it is smartly designed that can move fluently in heavy traffic .It have Robotic Features that help it to detect road width, traffic congestion. Route tracking and Location.

### C. Cloud

It stores both smart ambulance and app data. It also provides access to the cloud whenever needed detection would be done using GPS and Google Map that works according to algorithms.

### IV. ARCHITECTURE



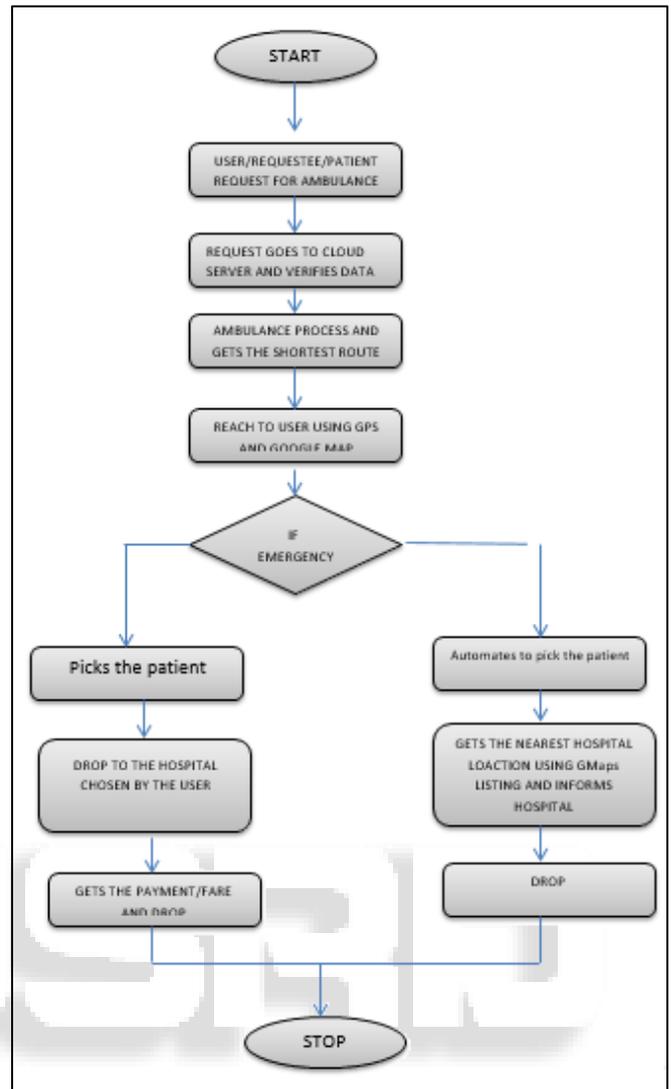Fig. 1: Proposed Models for Smart Ambulance



Fig. 2: Flow of Control

Patient's data which includes all the medical essentials is sent to the cloud. In case of emergency there would be much instant processing and also it itself decide the hospital nearest to the user/patient location. It instantly send alert message to the same hospital. Also if there would be no emergency then it drop to the hospital chosen with genuine fare. This model is comprised of so much supervised machine learning that it could automate using their own Artificial Intelligence. The app will block the user if data of AADHAR is not verified. This app will help to access the ambulance hassle free and work in absence of drivers or helpers.

### V. CONCLUSION

Human life is very precious and we must take safety measures to protect it. This also applies to ambulance services. In the proposed system, by using smart ambulance system we can get uninterrupted traffic flow by making the system automate. It can be only possible using AI and machine learning. This system has multiple usage, it is cost effective and is deployed using IOT which is more efficient. This system will save lives of the patient as well as of those who meet with an accident as they huddle to give way to the ambulance to pass by. This

life save project should be implemented in the traffic signal system to aid the public for the better.

## VI. FUTURE SCOPE

This system can be extended to implement the shortest distance from the accident site to the hospital Using drone based ambulance so that the patient reaches the hospital in very minimum time or by making live treatments. Also, the patient's information could be sent to the hospital before the ambulance reaches the hospital. By doing so, the arrangements could be made in the hospital according to the patient's condition and the treatment could start as soon as the patient reaches the hospital. Information of several patients could be stored in the cloud server for a long period of time.

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