

## Medulance

**Harshit Rochiramani<sup>1\*</sup>, Vrushali Kulkarni<sup>2</sup>, Raana Sayeda<sup>3</sup>**

<sup>1,2,3</sup>Jhulelal Institute of Technology, Department of Computer Science and Engineering, Session 2018-19, Nagpur, India

Available online at: [www.ijcseonline.org](http://www.ijcseonline.org)

**Abstract**— Many application are providing location based services, like Ola and Uber in which they find the nearest ride and allocate that to user and travel to destination. But what in the case of an Ambulance that is in an emergency situation in such cases we need to find the best path possible so that the patient can be assisted immediately reducing the traveling time to minimum. What A\* algorithm does is it connects two paths or nodes together it, while in an emergency situation we need the best path possible we are not challenging to improve the algorithm but we are integrating A\* with some repositories just to be more efficient in finding path.

**Keywords**—:A\*,GeoFire,FireBase,GitHub,API,SQL.

### I. INTRODUCTION

After reading the abstract one may think why to calculate the best path if it's a delay of a minute or two it is fine even when the user is in a hurry. But as we have seen many cases or medical cases where a delay of sec could lead to someones life. Also we are living in the world of optimisation where the user company and organisations needs every thing in an optimised way, so we are merely writing an optimisation of path finding technique.

In our application in which we provide service to user in an emergency situation we are basically contacting the nearby ambulance, fire, police patrolling drivers so that they could provide their best service and in serving our society.

Talking about facts and figure about need of this technique we found that 70% of the total calls are unanswered and when talking about the figures it evaluates to 1.97 lakh of user specifically targeted in Maharashtra and madhyapradesh out of which most cases are of pregnant women. Also ambulance getting stuck in traffic or hospital not being equipped with prior services lead to a huge amount of human death and is not covered in many news media.

Aged people unaware of technology when get stuck by some medical condition usually cant find any help, cases have been seen where there are almost 85% of people are home alone or find difficult to inform nearby people or family members.

Having an Android app which get triggered through a button calling ambulance services immediately by forwarding locations through Google Api's would be a boon to this society.

Also found in the data of All India Institute of Medical Science AIIMS 28% of her are not being provided with ambulance hence reaching them through our application

would be really helpful and this would educate the slum as they would be equipped with android phones.

To remove the problem we are currently facing with direct contact of the user and ambulance service provider.

Developing a pure android based application using Google repositories and Git Hub repositories of high end Api's could creating a useful application assisting user in almost every emergency situation. Continually sensing user location through google API's.

Also using GitHub repository like GeoFire for storing location with string keys for latitude and longitude makes GeoFire a light weight application with realtime database like firebase or sql.

This solution could significantly improve location services and make application lightweight as well as developer friendly.

Applications like Ola and Uber are using Google repository but as they have a business model and a totally other domain they do not take care of the tie required to reach the destination as this would only make their application bulky because o integration of third party application.

Also developing their own solution is also not required because while travelling no one minds a delay of minute of one or two.

#### Summary of Contribution

- No emergency service application available.
- No immediate assistance available.
- Ambulance driver getting unpaid from emergency helplines due to low turnover.

## II. RELATED WORK

According to a news report around 4.7 lakhs of emergency calls only 1.7 lakhs of calls are answered. The emergency calls are made to National Help lines like 102 108.

102 is registered for providing assistance to pregnant women's, and 108 being fire Helpline no also 110 has been introduced by the current government as Emergency number for every situation but still do not help in all cases.

Reports have been found depicting that calls are made to call centre where there is no one amiable t answer the call, this is due to low wages provided to the workers and lack of skills to answer and forward call to local services.

The funds raised by government are utilised for personal use rather than improving services like this.

This leads to thousands or even lakhs of death per year in India.

In this world of growing technology where everyone is using a smart phone, constantly contacting with each other on social media calls and other stuff. We found that this could also be used in an Emergency situation.

Also searching the web and play store even third party apps there is not even a single application available which aids in an emergency situation.

There are applications which provides remedy or provide symptoms of a disease but are not as much useful unless they guarantee to aid their users like Doctors.

Therefore the only option user is left with is to visit hospital and consult doctor.

Apart from this Google and third party developers are working on location based services.

Google itself is providing hundreds of API's for location dependency application, thus by combing this things we found that we can develop an application that reduces the manual overhead totally and make thing good from worse.

This could be done using services of Google and third party repository available in GitHub combing them altogether and making a single app which could help user in almost any emergency situation.

Situations could be Medical emergency, Accident emergency, Fire emergency and Police emergency in case of burglary fraud murder etc.

User could trigger the application and select the type of services to inform. In case of medical emergency the wages of driver would be automatically e paid by user thus increasing employment and this would also remove the manual overhead.

Thus we can make this as a national application which would improve our recognition in world market. A single application which aids in almost every services.

Later on we found that many NGO's are also willing to help by providing their vehicles and support. Further National NGO's like Robinhood Army and Care are willing to work and collar with this.

This would be a boon to Human society.

## III. PROBLEM STATEMENT

We have seen at the time of emergency most of the calls remained unanswered or the helpline number which is provided is kept on hold and required services are not available. This is the reason many people don't get proper services at time, which results in delay for a particular treatment or they may even loose their lives.

This application will help us providing aid to users at the time of emergency by directly contacting to the driver of the ambulance and not with any third party in middle. Doing this Will require less time as well as will result in decreasing death rate due to emergency situation.

## IV. FLOW DIAGRAM

As the flow diagram depicts the user will trigger. The application in case of an emergency situation and the application will now provide service to user.

This is done by using google support under application as soon as the user triggers the application the application will create a user-id on data base that is firebase in our case and the id will be created along with two values that are the longitude and latitude of the user we are using high end location detection provided by google to get the accurate location of user.

Now as we have latitude and longitude our application will look in the data base for the nearest available ambulance but here the question arise how will the ambulance be located because the position of ambulance can be changing randomly and infinitely how will A\* work now. This is where GitHub repository goofier comes into picture. The repository provide high end service to store latitude and longitude with string values, the constantly updating values of driver location will be updated in the repository database but as soon as a user. Calls an ambulance the data from repository will be saved

immediately in firebase thus the application will use functions to calculate the best ride nearby and immediately book the service for patient.

This significantly reduces the time

- No manual overhead of forwarding the calls to ambulance driver and then not icky up the calls
- Reduces the in application time for assigning drivers.
- Payment can b made directly to the driver of ambulance and no third party included in between.

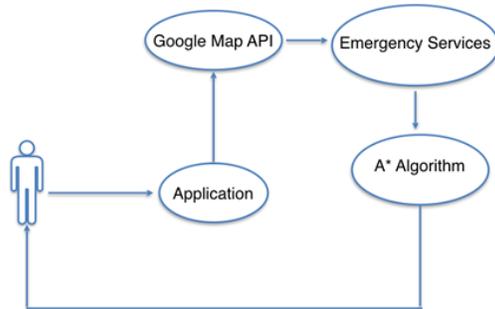


fig.1

## V. PROPOSED PLAN

### A. Triggered application

As soon as the user triggers the application application will look on the database to find the nearest available ambulance or emergency service and divert the control over the service. We will impose a strict restriction on service providers to only update their status as available when they are willing or available to provide the service because when the driver accepts the call we can transfer the control to other drivers as this would only increase the delay in time.

### B. Path Finding

After the river has accepted the calls the next challenge here is to calculate the minimum time so to reach the user or patient in the shortest time possible this would be done using GeoFire and A\* algorithm.

A8 algorithm will provide us with the nodes connecting too users location now its upon us which route should we follow by keeping traffic road conditions and other things in mind, GeoFire repository helps us wit this it finds the best node to select with A\* and in addition minimises the database update made to firebase which makes the application but on one side.

### C. Payment

Google has made everything easy for developers by the additional functionalities we haven't taught about the payments gateways, but we will be surely going with google

After the ride has been completed and patient is assisted in Hospital for treatment the member present with patient will ay the driver in hand cash or online cash.

This solves the call centre overhead and drivers not getting payments.

## VI. CONCLUSION AND FUTURE ENHANCEMENT

### A. Conclusion

Thus we can say that a minor optimisation in finding path and updating database could be made just by adding a third arty support to an application. And if A\* is combined with such repositories it adds performance by a bit but is greatly required many emergency cases.

In this project , an idea is proposed to save patient's life in faster as possible.

It is beneficial for users in case of emergencies as it saves time. Traffic sensing technique will shift the control to nearby driver and this will provide the help more quickly. Special key will reduce the effort of registration or an other procedures to access the app

### B. 2 Future Enhancement

As such if the repository changes or updates it is likely to have an effect on all the application using that support, but charges can be propagated in the application too. Integrating various NGO's which will be providing various facilities there are several national NGO's who already to prove their emergency vehicles and staff or volunteers for this purpose. This would add to the application in a n great manner. As we are talking about this kind of optimisation we haven't taught about the mobile phone requirements the RAM required or space required we are optimising current algorithms used to reduce app time for fining services.

Although application will always need an update accordingly through changing API's and repository update also making the application more user friendly and optimised.

We would like to acknowledge Raana Sayeda our guide and Mandar Deshpandey for guiding us throughout the topic and project and our team members Kajol Khatwani and Bhawna Vasiyani for contributing in the research.

## REFERENCES

- [1] <https://developers.google.com/android/guides/api-client>
- [2] [https://business.paytm.com/?gclid=Cj0KCCQiA3b3gBRDAARIsAL6D-N-gLD14aUcK5-e3NF6hVhSZUhhZuclkeER1fDiNfcoK-OT2voyGu8YaAmn0EALw\\_wcB](https://business.paytm.com/?gclid=Cj0KCCQiA3b3gBRDAARIsAL6D-N-gLD14aUcK5-e3NF6hVhSZUhhZuclkeER1fDiNfcoK-OT2voyGu8YaAmn0EALw_wcB)
- [3] [https://firebase.google.com/?gclid=Cj0KCCQiA3b3gBRDAARIsAL6D-N\\_486UICtZH9HZ4SIwxjTmkksGYKWrvEmqyonFm8ZbvoZPftKspCcYaAliqEALw\\_wcB](https://firebase.google.com/?gclid=Cj0KCCQiA3b3gBRDAARIsAL6D-N_486UICtZH9HZ4SIwxjTmkksGYKWrvEmqyonFm8ZbvoZPftKspCcYaAliqEALw_wcB)

- [4] <https://cloud.google.com/maps-platform/>
- [5] <https://developers.google.com/>
- [6] <https://github.com/firebase/geofire-java>
- [7] [https://developer.here.com/lp/mapAPIs?cid=API-Google-MM-T4-Dev-Brand-BMM&utm\\_source=Google&utm\\_medium=ppc&utm\\_campaign=Dev\\_PaidSearch\\_DevPortal\\_AlwaysOn](https://developer.here.com/lp/mapAPIs?cid=API-Google-MM-T4-Dev-Brand-BMM&utm_source=Google&utm_medium=ppc&utm_campaign=Dev_PaidSearch_DevPortal_AlwaysOn)
- [8] <https://developers.google.com/maps/documentation/android-sdk/map-with-marker>  
<https://www.quora.com/topic/Quora-API>
- [9] [https://business.paytm.com/?gclid=Cj0KCQiA3b3gBRDAARIsAL6D-N-gLD14aUcK5-e3NF6hVhSZUhhZuclkeER1fDiNfcoK-OT2voyGu8YaAmn0EALw\\_wcB](https://business.paytm.com/?gclid=Cj0KCQiA3b3gBRDAARIsAL6D-N-gLD14aUcK5-e3NF6hVhSZUhhZuclkeER1fDiNfcoK-OT2voyGu8YaAmn0EALw_wcB)