# Android Help Alert System using Speech Recognition

[1] Mohit Thulkar, [2] Snehal Kardale, [3] Rahul Sathawane

[1, 2, 3] Rajiv Gandhi College Of Engineering, Department of Computer Technology, R.T.M.N.U.,
Nagpur, Maharashtra, India

**Abstract -** Now a day's people do not seem secure due to increase in the crime rates and specially crimes with women's are increasing day by day. Though, technology can be used at a greater scale to reduce such crimes and with this inspiration we are creating an application by using Android platform that can provide instant help in a better and faster way .The proposed system is using GPS which will take the location from Goggle map .The main concept in this proposed system is voice recognition, the recognition engine (or voice recognizer) takes an audio stream as input and turns it into a text transcription.

*Keywords -* **GPS, Android, Tracking, Voice Recognition.**

## 1. Introduction

The mobile development community is at a tipping point. Mobile users demand more choice, more opportunities to customize their phones, and more functionality. Mobile operators want to provide value-added content to their subscribers in a manageable and lucrative way. Mobile developers want the freedom to develop the powerful mobile applications that users demand with minimal roadblocks to success. Finally, handset manufacturers want a stable, secure, and affordable platform to power their devices. Up until now single mobile platform has adequately addressed the needs of all the parties. In recent years the mobile has become the valuable part of the human beings. It is necessary for human begins to have a powerful device which will provide all the facilities other than basic facility available in mobile phones.

Android provides such functionality which enables the developers to design such applications which will make a simple mobile to smart one. "Android is open source it can be liberally extended to incorporate new cutting edge technologies as they emerge. The platform will continue to evolve as the developer community works together to build innovative mobile applications". The proposed system is going to provide the facilities to the users who is in danger and requires immediate help. We have developed an application for sending messages which uses Google's speech recognition engine. The main goal of our application is to allow user to give input spoken information and send voice as desired text message. The user is able to manipulate text message in fast and easy way without using keyboard, reducing time and effort. In this case speech recognition provides alternative to standard use of keyboard for text input, creating another dimension in modern communications. Another application of proposed system is to track the location of the user and send the location to the 5 persons whose information is saved in the database.

## 2. Literature Review

Recently, v-channel gumrah had created an android based application vith-u that works in the way same as our application, but there are some drawbacks in order to activate the application, you have to double tap on the power icon in that. From that survey, we have concluded that anyone other than the user can double tap on the icon and a false message may be sent. So to overcome this, we have created an application based on vith-u application which will activate only through voice recognition. So whenever the user needs help, he don't have to unlock mobile, search for the application' and double tap on it, instead simply by giving voice as input it gets activate and the help can be provided in a better and faster way.

## 3. Methodology

The process of our software starts when it recognizes the user's voice as input. Voice is recognized using voice recognition concept. Then this user's voice is converted into text. When this text is matched with the text which is stored in the database, and if the condition is true, only then the GPS will automatically activate. As soon as GPS activates, it starts tracking the location of that user who is using the application. After finally the location gets tracked, then GPS will go to find nearby landmark e.g. cafe, restaurant, hospital etc. Then this tracked landmark

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in the form of text and all the information of user stored in his profile is going to send to all the 5 family contacts or to 5 emergency contacts or to 5 email-addresses whose mobile numbers and email addresses are stored in setting by user. But if converted text is not matched with the text stored in database, means the condition is false, only then the process will automatically stop.

Here we have also provided the concept of ring loud to ensure the user that his message is properly sent to all the contacts to which he wishes to send. So, when the message is sent to those contacts saved in database, just after the 5 minutes, mobile of the user will ring loud. Thus the user gets ensured that his message is successfully sent to the saved contacts.
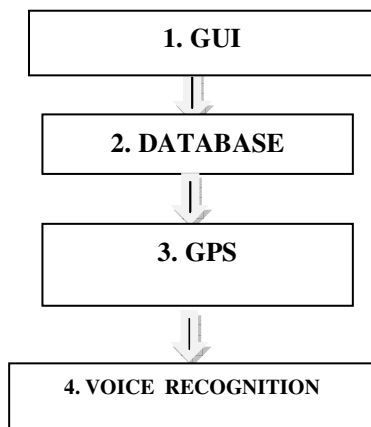
## 4. Modules



Fig.Modules of our project

### 4.1 Module1 GUI(Graphical User Interface)

Very first phase of our proposed system is GUI i.e., Graphical User Interface. In which we designed the menu screen, it contain 4 main buttons, viz..Profile, Setting, Help, About. Profile button contains personal information of the user, who is using the application. Setting button contains 5 contacts of family member as well as emergency services & email-addresses to which message is going to send. Help button contain the information about the application.
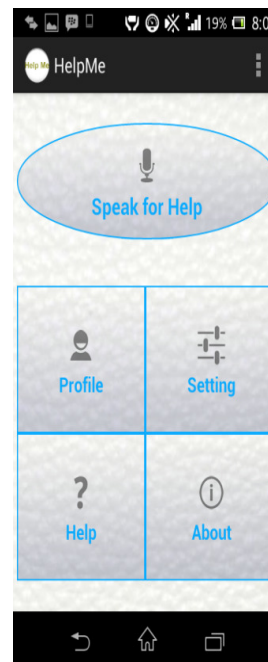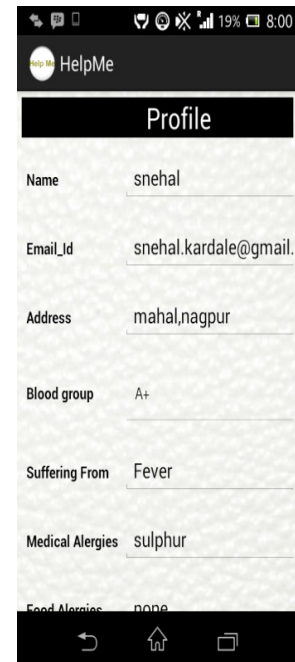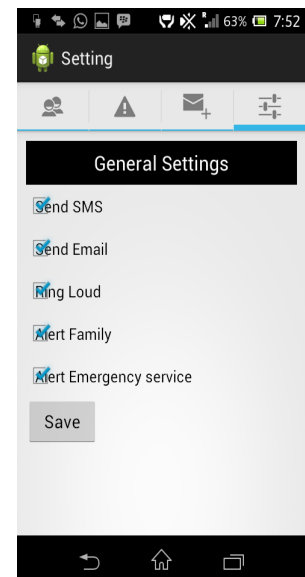
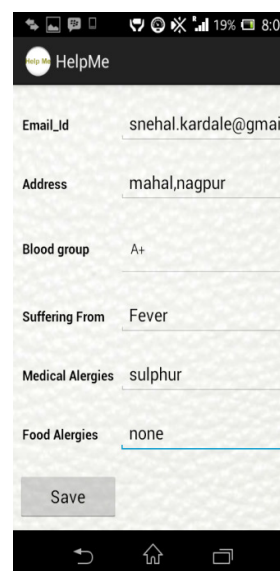

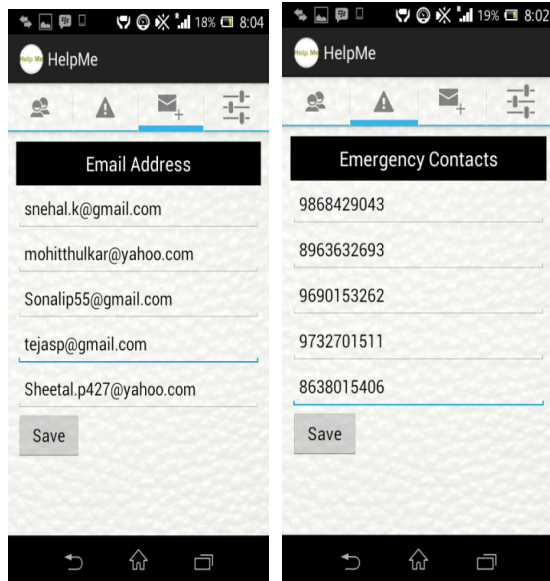Fig1.Menus        Fig2.Profile



Fig3.Settings

Fig4.email  Fig5.emergency contacts

## 4.2.Module 2 DATABASE CREATION

We are creating an android based application that can help a person in an emergency situation. Database plays an important role in proposed system. Suppose that we want to store a word 'help me' in the database, and if any person requires help, he has to give voice as input i.e. when he says the word, our application will get activated and it will start to convert the input voice to text and this text is then matched with the text that is stored in the database. So, as soon as it matches it will continue further processing otherwise it will not do any processing.

In our application when user is going to stored his personal information in the profile and contacts it is directly stored in database file.A portion of the database contains the information of 5 persons related to family or emergency services and in this way, the message will be sent to those people (which is nothing but the voice recognition step).

## 4.3.Module 3 GPS(GLOBAL POSITIONING SYSTEM)

Global Positioning System (GPS) is a mobile service that has the capability to provide real time information based on the user's current location. Geographic Information system(GIS) is the main part of global positioning system. System which has been developed and act as collection centre, storing and supplying the geographical information for being calculated by the application. Data which stored in the system will be used for making the decision. Through this, data is collected to trace each unit

location and each and every unit also update any additional information.GIS integrates hardware, software and data for capturing, manipulating, analyzing and displaying all forms of geographically referenced information. This will allows us to View, understand, question, interpret and visualize data in various ways that reveals relationships, pattern and trends inThe form of globes, maps, charts and report. The architecture of the location-based alarm called GEOALERT consists of several segments that are sufficient to Create a fully functional unit. The absence of any of these Parts means at the same time the impossibility of developing the system.
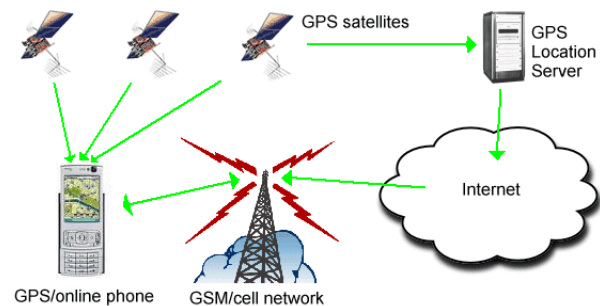


Fig. 6.System Architecture of GPS
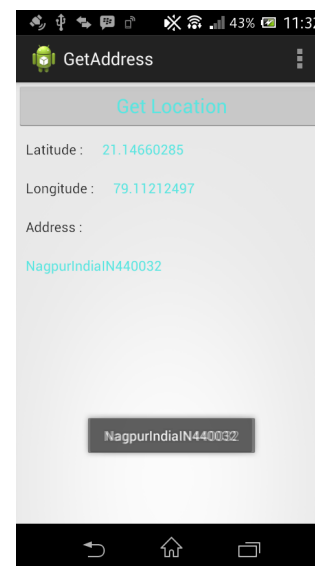


Fig7.GPS module

## 4.4. Module4 VOICE RECOGNITION

Voice recognition, the recognition engine (or voice recognizer) takes an audio stream as input and turns it into a text transcription. Elements of Speech to Text
1) Speech Acquisition

2) Speech to text conversion
3) SMS transmission

This system allows us to give our voice as input and produce text as an output. Systems use "training" where an individual speaker reads text. These systems check the person's specific voice and use it to fine tune the recognition of that person's speech, resulting in accurate transcription. The speech to text conversion system is the ability of Smartphone to identify the words which is in the spoken language and translation of it into the readable form (text). Many speech recognition software available in the market which is available for limited vocabulary of words or if the words spoken very clearly.
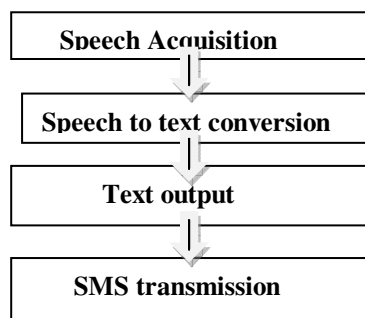


Fig.8.Elements of speech to text conversion

## 4.4.1 SPEECH ACQUISITION

Every speech-to-text conversion system require acquisition of speech at the real time During speech acquisition, speech samples are obtained from the speaker in real time and stored in memory for pre-processing. Speech acquisition requires a voice recorder in mobile phone that has the proper amplification to receive the voice speech signal, sample it, and convert it into digital speech. At any time prior to or during the recognition process, the application can issue Controls to each of the modules, effectively becoming a partner in the recognition. The result of speech acquisition where the speech input is taken at the real time and the text understandable by the systems shows as the output. Every computer system has its own voice recognition system and hence it produce output. Example- if computer recognise incorrect output as per given input then it requires training.

## 4.4.2 SPEECH TO TEXT CONVERSION

The main requirement of speech to text conversion system is a database which will compare peach with frequencies. If we develop the system which will convert the speech

into text that is for any user it is very difficult task because the frequency of giving input of any user is different as that of other. If the system is global hence we are creating it for the mobile user means our task is much difficult there are millions mobile users and sound frequency and peach comparison is again difficult. Hence we need to use database which is already provided by "Google". If we try to create the database it will create time and space problem. Instead of creating a database for this system we need to use existing database which is available at the web server. Speech input is collected in the container and then send it to the peach and frequency comparator and recognition takes place. To get correct text which is spoken we need training on input file for that neural network (NN) is used and output is collected in the text file and SMS is ready to send.

## 4.4.3 SMS TRANSMISSION

During SMS sending stage the speech samples which is converted into text is send as a SMS to the other device. In this stage two android emulators are used to send and receive the SMS. From first emulator we consider as mobile one text massage is send and other device receive it at the inbox. Here we are using AndroidManifest.xml to add the two functions - SEND_SMS and RECEIVE_SMS. Next we have added here main.xml to get phone number of sender. Next, in the SMS activity, we wire up the Button view so that when the user clicks on it, we will check to see that the phone number of the recipient and the message is entered before we send the message using the sendSMS() function, which we will define . To send an SMS message, we use the SmsManager class. Then we will call the getDefault() static method to obtain an SmsManager object. The sendTextMessage() method sends the SMS with a PendingIntent. The PendingIntent object is used to identify a target to invoke. For example, after sending message, you can use a PendingIntent object to display another activity. In this case, the PendingIntent object (pi) is simply pointing to the same activity (SMS.java), so when SMS is sent, nothing will happen. When an SMS message is sent, the first BroadcastReceiver's onReceive event will fire. The second BroadcastReceiver's onReceive event will fire when an SMS is successfully delivered.

## 5. Conclusion

Thus we have successfully created our voice and GPS modules, as soon as we are giving the voice as a input it is tracking the location of the person who needs help and successfully performing the proposed work. We have

future plans like instead of receiving the information of the location as text one can receive image of the location so it become easy to track a person needing help in a faster way.

## References

[1]     Y.Liu,E. Shriberg, A. Stolcke, D. Hillard, M. Ostendert, and M. Harper, "Enriching speech recognition with automatic detection of sentences boundary and disfluencies," IEEE transaction Audio, Speech, Language, process, vol-14, no-5, pp. 1524-1538, sep-2006.

[2]    Ms. Anuja Jadhav, Prof. Arvind Patil, "Android speech to text converter for SMS Application," IOSR Journal of engineering, vol-2(3), pp. 420-423, Mar.2012.

[3]    Ryuichi Nisimura, Jumpei Miyake, Hideki Kawahara and Toshio Irino, "Speech-To-Text Input Method For Web System Using Javascript", *IEEE SLT, pp 209-212,2008.*

[4]    Panikos Heracleous, Hiroshi Ishiguro and Norihiro Hagita, "Visual-speech to text conversion applicable to telephone communication for deaf individuals" 18th *International Conference on Telecommunication,  pp 130-133,2011.*

[5]    Brandon Ballinger, Cyril Allauzen, Alexander Gruenstein, Johan Schalkwyk, "On-Demand Language Model Interpolation for Mobile Speech Input", INTERSPEECH *2010, Makuhari, Chiba, Japan, pp 1812-1815, 26-30 September 2010.*

[6]    L. Nguyen, T. Ng, K. Nguyen, R. Zbib, and J. Makhoul, "Lexical and phonetic modeling for arabic automatic speech recognition,"i*n Proc. of Interspeech, 2009.*

[7]    Anderson, S., Liberman, N., Bernstein, E., Foster, S., Cate, E., Levin, B. *"Acoustics, Speech, and Signal Processing"*, 1:145-148,1999.