

# Intelligent Android Voice Assistant - A Future Requisite

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**Abstract**—The common way by which people communicate in daily life is through the speech. If an android smart phone can listen to the user for the request of daily news affair, calling a person, messaging a person, playing music, opening an application, etc and give the appropriate response and perform related actions, then the smart phone can be called even more smarter. The mobile phone users are increasing day by day and improved version of existing ones are releasing in a row. This paper focuses on the existing systems and what new can be added to it for the enhancement of Intelligent Voice Assistant systems. There is need to formulate innovative techniques that facilitate our interaction with these devices for users so that the need for constantly glancing at their screen reduces. This technology uses the Speech to text and text to speech interaction between user and the android smart phone. A supplementary unique attribute is that, it also offers offline access as any commands given by a user are processed and executed locally on the device.

**Index Terms**—Android, Voice recognition , Voice Assistant , Language option.

## I. INTRODUCTION

The smart phone market is one of the most competitive markets in the world today with various competitors such as Samsung, Google, Sony, HTC etc. As the users increase day by day, facilities are also increasing. In recent years, smart phones have placed a rising emphasis on bringing speech technologies into mainstream usage. The purpose of voice assistant systems is the exchange of information in a more interactive approach using speech to commune.

It is estimated that smart phones captured 44% of all mobile phone sales in the December 2012 quarter with Android smart phones taking 31% of all mobile phone shipments and iOS in second place at 9%. Android smart phones grew 88% year over year with iOS at 23%. So, it is preferable that the application should be made on android platform as more number of people can be facilitated by the personal assistants.[1]

According to a survey, 54% of users agreed that AI personal assistants make their lives easier. 31% said that AI assistants are part of their everyday lives. 65% agreed that they have many different uses. Looking forward, the result of the survey also unfold that 65% of users said that they regularly ask general questions to their AI personal assistants. 40% use them to get directions while they drive. 25% use them to make calls. 23% dictate texts or emails through those assistants. 17% use them to receive updates. And 9% use them in other ways, like for weather alerts and appointment reminders.[2]

This paper presents an Intelligent Android Voice Assistant system using speech recognition technologies of mobile devices for every common user who is interested in AI personal assistant.

## II. LITERATURE REVIEW

Omyonga Kevin and Kasamani Bernard Shibwabo proposed that his solution is able to process voice commands offline allowing users to cut down on the cost of data bundles. And this offline voice recognition makes the application faster than the Apple's Siri. They also made that application work in background with the help of wakeup services so that user need not to push any button. They suggested that future work can be done in considering accuracy especially if the application is used by uttering commands in noisy environments. In addition, new language packs for local languages could be developed thus allowing users such as those living in rural areas to have access to voice operated software without necessarily having to learn a new language and/or accent.[3]

Sutar Shekhar, Pophali Sameer, Kamad Neha, Deokate laxman has developed an application, in which client can easily send a message with their voice command and also tried to use most of the inbuilt application with voice command. They also tried to make this application useful for visually impaired people. Objective for future development was to make a voice engine which can also work for recognising the other local language like Hindi or Marathi.[4]

Miss. Priyanka V. Mhamunkar, Mr. Krishna S. Bansode and Prof. Laxman S. Naik suggested an application which will help the user to retrieve the meaning of the word in the form of voice.[5]

Sinora Ghosalkar , Saurabh Pandey , Shailesh Padhra , Tanvi Apte has proposed an application which is beneficial for visually impaired person during examination so they do not need any extra facility from the university such as a writer . In addition, they also suggested that their application can also be beneficial for the sighted student during the exams.[6]

Rahul Anwani , Usha Santuramani , Deeksha Raina , Priya R.L has proposed an application which will help us to deal with the mailing service by voice command. Using this application user will have the control to use e-mail by just using certain keywords like Read, Send, Compose Mail, etc without any guidance and the application will perform the provided actions

accordingly. VMAIL can also be helpful for the visually impaired person so that their dependency on other person can be diminish.[7]

Yu Zhong, T.V. Raman, Casey Burkhardt, Fadi Biadsy and Jeffrey P. Bigham claimed that their application is the first voice control application that provides augmentation to all applications existing in a mobile system by synthesizing instructions set from on-screen context. They also proposed that it supports chaining of several commands in the same speech which enables more natural and flawless communication experience.[8]

Tong Lai Yu, and Santhrushna Gande, Ronald yu have developed an Android application, with the help of open source or free tools, that helps students who are physically disabled to write programs. The producer-consumer paradigm is used to synchronize tasks in the client, which runs in an Android phone.[9]

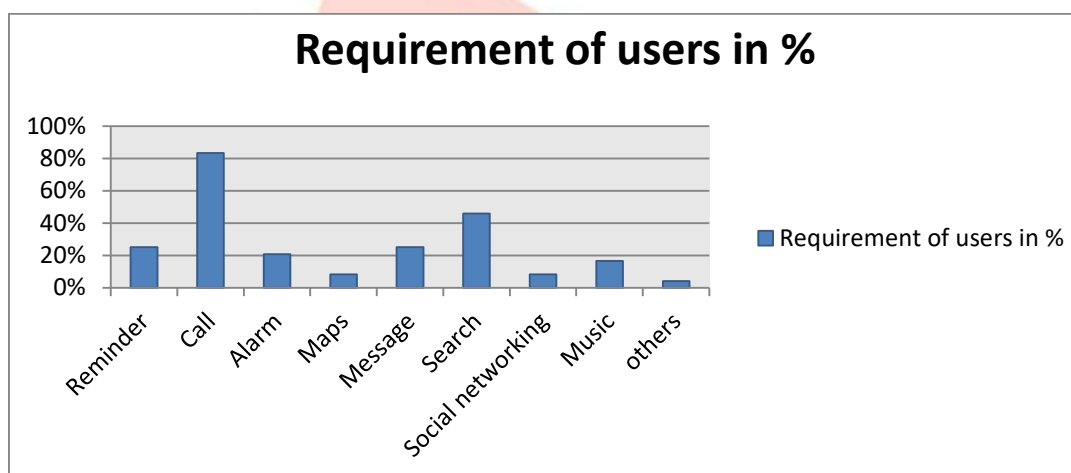
Santosh K.Gaikwad, Bharti W.Gawali, Pravin Yannawar reviewed and discussed the technique developed in each stage of speech recognition system. Through this review they concluded that MFCC is used commonly for feature mining of speech and GHM and HMM is best among all modelling techniques.[10]

### III. SURVEY OF ANDROID USERS

Analysis of 100 android users were taken to understand the need of voice assistant in their day to day life. The users were consisting of 3 different sectors that is Academics , Corporate, General sector with 41.66% , 37.5% and 20.83% respectively.

Voice assistants are the next big thing. There are several users who are really fascinated by the voice assistants and when we asked them that what are the basic things that they do daily and want them to get completed through voice commands. The replies were very common and they suggested that they want this type of system for the simple uses.

After the analysis of all the commands it can be concluded that there was a highest demand for calling with voice command and in it 83.33% people were interested, following with 45.83% people interested in surfing online with voice, 25% in each message and reminder, 20% in setting alarm, 16% in controlling music with voice, 8% in controlling maps, 9% in social networking and 4.16% in others which again consist of meaning, weather, settings, mail, calculations, news, notes, language option, camera, etc. The survey is also represented in **graph 1.1**.



Graph 1.1: Illustrate the results obtained from the survey. It consist of the users requirements and the percentage of users interested in that feature.

### IV. FUTURE PLAN

Based on the survey we recommend that an android application should be developed which accomplishes the desire of different users. The main reason that the user wants to use the voice assistant is to make their life easier, so by implementing the below mentioned features the user can be facilitated.

- Language option.
- Read the news – from sports to technology.
- Control your music by voice.
- Find what you need using Google.
- Translate anything to Spanish, German, French, Italian and over 70 other language.
- Connect with social media like Facebook, Twitter and WhatsApp.
- Use of attractive graphics and animation.
- Get weather forecasts for any location.
- Manage your calendar – quickly find out what your day looks like.
- Take notes.
- Find the best restaurant or bar in town.
- Get directions and navigate to friends, restaurants and stores.
- Quickly find locations on Google Maps.

- Set alarms and reminders, alerting you at a specific time if needed.
- Read and send text messages, emails.
- Make phone calls, find contact details.
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## V. CONCLUSION

From the initial discussion of this paper, we can conclude that in future there will be centre of attraction on implementation of application which will provide language option. This application will also make life easier for those who are physically disabled and every common user who is fascinated by voice recognition. In addition, this will provide Indian accent which will be beneficial for the Indian who can't speak in US accent.

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