

Personal Assistance: A brief Survey

Kallempudi Sai Sowjanya
M.Tech
Lovely Professional University

Ishan Kumar
Assistant Professor
Lovely Professional University

Abstract:

In the advanced world that we are living in, technology can do things which can eventually reduce the human efforts. One such example is google assistance used in android phone that was developed by google and “SIRI” which is the famous application of iPhone that helps the end user to communicate through voice. But these applications need internet connection to run. How google assistance works is, the input from the user is taken in form of voice or text and returns the output to the user. This system mainly uses the user voice commands that are used by the end user to access the services provided by mobile devices. This application can be widely used anywhere in the world. We don't need much expensive software or equipment to implement this concept.

I. Introduction

Artificial intelligence is one of the foremost tool used in personal assistance. Artificial intelligence means to make the machine to be intelligence and also making the software to be intelligence, in the same way intelligence of the human. For example, robotics is the machine acting as a human without feelings. In robotics by using artificial intelligence, programmer's making the robotic machine to be act as a human.

In the same way by using this technology, personal assistance is developed. In Artificial intelligence development the core contributors are computer science and engineering, mathematics...etc. It is also used in gaming, natural language processing so on

In today's era the technology serving boon for end user, as a result of it's terribly simple to use apps and services from anyplace in geolocation. A lot of utilization and administrations for operating system are given by clients. For example, calendar application, it is used to store festivals, events etc. It can also store the day that we want to remember and all the data is stored in internal storage. This application reminds the day that we are saved in reminders. From play store, app store we can find many applications

Some of the personal assistance and their devices are:

- Google assistance, which is used in android mobile
- Alexa, which is used in echo dot
- Cortana, which is used in windows 10 laptop
- SIRI, which is used in iPhone

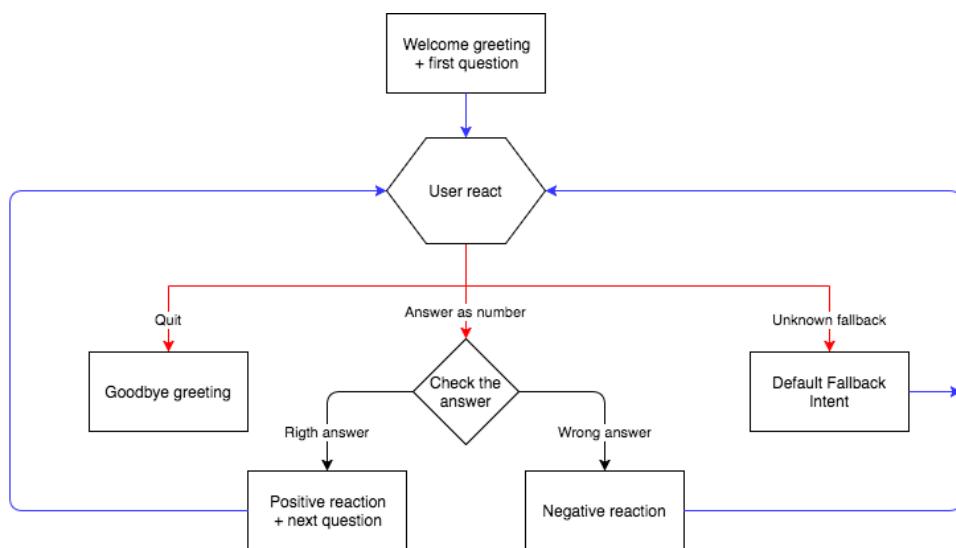


Figure1: Basic Architecture of Personal Assistance

II. Literature Survey

In this paper [1] authors present PIANI, an Intelligent Platform for Assistance of Elderly People able to do activities in outdoor environments. PIANI allows inferring the risk level of the activity that an elderly person is currently doing out of his home. Also, our platform uses the smartphone of the user in order to collect geographic and time information which is used by the PIANIs server to calculate risk through formulas of probability and thus non intrusively determine the action to be performed when there is a high-risk situation.

One of the purposes of Artificial Intelligence (AI) is consent of characteristic discourse among people and machines [2]. Recently, exchange structures, called one of the revolutionary frameworks for understanding are the fastest-growing field of AI. Many organizations have used the exchange expertise to set up different sorts of Virtual Personal Assistants (VPAs) in view of their applications and territories, for example, Microsoft's Cortana, Apple's Siri, Amazon Alexa, Google Assistant, and Facebook's M. In any case, in this proposal, we have used standard exchange frameworks that include at least two client-friendly modes, for example, speech, image, video, contact, gestures, looks, and head and body growth to shape the Next-Generation model of VPAs. The new VPA model will be used to build collaboration between humans and machines through a variety of techniques, for example signal acknowledgment, image / video acknowledgment, speech recognition, dynamic exchange basis and convergence learning domain, as well as a common data base. Alternatively, the new VPA framework can be applied to a variety of other areas of practice, including instructional assistance, medical assistance, mechanical and motor technology, the inability framework, home computer, and security controls.

The creator portrays how existing man-made reasoning methods are straightforwardly material to taking care of the human interface issue of home computerization items in any event, when the 'framework insight' is broadly disseminated among various items sharing a typical home system [3]. It is called attention to that home mechanization items can utilize methods from all regions of man-made consciousness: language handling, master frameworks, design acknowledgment, and learning.

Man-made consciousness (AI) has a long convention as a logical field, with colossal accomplishments achieved in the decades behind us. Simultaneously, over the most recent couple of decades, we have seen a rising fame of intuitive PC games and multi-client virtual situations, coming about with a huge number of clients occupying these virtual universes. This paper manages the crossing point of AI and virtual universes, concentrating on AI specialists and investigating the potential ramifications toward the human-level AI [4]. It offers a one of a kind multidisciplinary way to deal with the subject, so as to give a far-reaching view on the expounded issues and the manner in which they are interrelated. Advantages

originating from this sort of expansive investigation are twofold: on one hand, explore on cutting edge AI operators in the virtual universes is the essential element of their further advancement; and then again, the virtual universes speak to an astounding stage for look into on various issues identified with the difficult field of AI.

III. Methodology of the Voice Assistance

Personal assistance delivers its results spontaneously and it works right away. The input given to the personal assistance is in the form of voice or commands through mic and then it changes to text format or directly we can give text also and if we want to process another request then after completion of first request it will process. After changing voice to text format then checks in database or local disk whether the data is present in that or not. If data is present then it processes and gives the output on the screen and if data is not present then it will give invalid input or try again. Witai is a device used for converting content and it stores the history of personal assistance that already processed [5].

IV. Hardware Components which makes a assistance work:

Raspberry Pi 3

Raspberry Pi 3 was released in February 2016. The Raspberry Pi 3 will cost the same as its predecessor, but it features much more powerful hardware. For the first time Bluetooth will built into the board, and is equipped with a Quad Core Broadcom BCM2837 64bit ARMv8 processor.

MIC

Mic is a transducer type device which is used to change the energy from one form to another form. It is used to take the input from the user to personal assistance, so it is called input device

SPEAKER

Speaker is a transducer which converts the energy from one form to another form. It is a output device, it is used to give output to the user after processing.

Simulations and results

We will take the input from the user in the form of USB mic to get output like make a call, play music, open maps etc. After taking the input from the user, it will give high beep sound. It gives command to the hardware and it gives low beep sound later it checks whether the data is matched with the database or not. If the data matched then it gives the results out from the speaker.

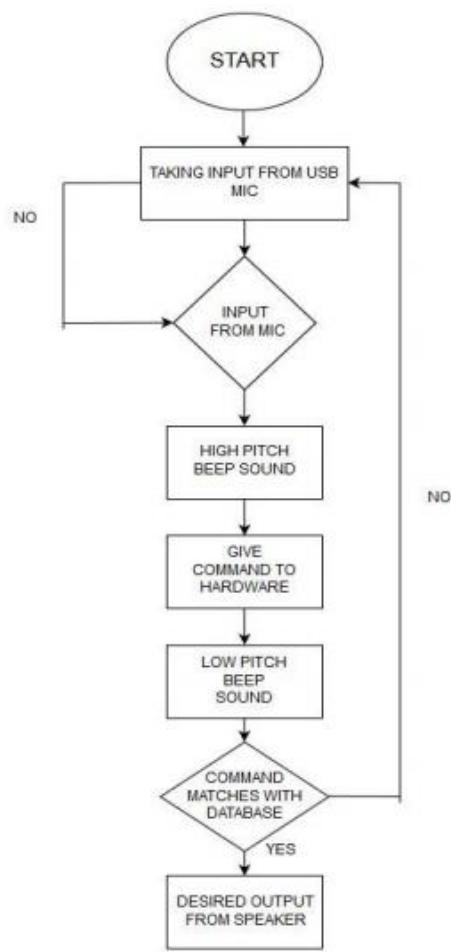


Figure 2: Working Flow chart of Personal Assistance [6]

Conclusion

Personal assistance is for Blind people who are fully based to work with voice and gets the output. It works when the internet connection is there. It provides communication of all the application in the mobile with the help of voice assistance. It is mainly used to reduce efforts of the human. The future scope of this application is to work without internet connection and also device should be responded with their voice only.

References

- [1] Mejia, M. E. L., Montalvo, J. R. G., Mena, F. M., & Ramirez, F., "Intelligent platform for assistance of elderly people." IEEE Latin America Transactions, Vol. 14(5), pp 2433-2439,2016
- [2] "Digital Personal Assistant for the Enterprise", Intel White Paper, 2013
- [3] Comerford, L, Frank, D, Gopalakrishnan P, Gopinath R and Sredivya J., "The IBM Personal Speech Assistant Acoustics, Speech, and Signal Processing", International Conference on Speech and Signal processing, 2001
- [4] Paul Taylor, "Text-To-Speech Synthesis", University of Cambridge, pp 45-56,2007
- [5] E.C. Lupu, D.A. Marriott, M.S. Sloman, and N. Yialelis, "A Policy Based Role Frame Work for Access Control" Gaithersburg, USA, Dec. 1995.
- [6] "Language modeling for What-with Where on GOOG411," Proc. of INTERSPEECH, 2009.