An Efficient Virtual Voice Assistant for Physically Challenged People

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***Abstract*-Virtual Voice Assistant (VVA) isbonus for everyone in this current century. It has placed the route for another innovation where we can postquestions to machine also, can cooperate with VVAs as individuals do with people. This innovation pulled the entire world from multiple points of view like smart phones, laptops and computers. Some of the significant VPs are like Siri, Google Assistant, Cortana, and Alexa. Some of the issues such as Voice recognition, contextual understanding and human interaction are not solved yet in theseVVAs. Our proposed model solves some these issues. We designed the new model called Buddy, a Virtual Voice Assistant (VVA) where we combined user-friendly input method with a self-learning AI. In difference to the existing AI we made a much more simple automated Assistance for daily commutes. Currently, also this model can be used with PC**.

Keywords: Virtual Voice Assistant, Speech recognition,

I. INTRODUCTION

The Artificial voice assistant is a voice robot, which perceives the natural human voice and reacts according to the command. It was first discovered by IBM at 1961, IBM shoebox was the first digital speech recognition which perceives sixteen words and ten digits. Several decades later at 1990 Dragon discovered the first consumer speech recognition called dragon dictate for extravagant cost of 9000 dollars. Later on, after seven years they updated the version as dragon natural speaking, which recognizes continuous speech and understands hundred words per minute.

In 1996, Microsoft introduces Clippy, which shows us how natural language in text could be traced and interpreted on the basis to provide us guidance and suggestion. Clippy is the one which allowed speech inputs and helped to find answers and solutions. Though Microsoft got discontinued, Clippy made a precise knowledge of voice assistant, that voice assistant can come forwarded only when it is called, rather than pestering continuously.

With the above knowledge, in 2011 Apple Company introduced the first modern era called Siri into their devices. It was designed to react according to the users command. Following this many introduced voice assistants like Alexa, Microsoft's Cortana and recently by 2014 Amazon's echo was introduced. Google also introduced voice assistance, users on chrome could use microphone to speak for Google search.

We have proposed the new Virtual Voice Assistant (VVA) called Buddy voice assistant. It works same as existing model and also performs additional work such as it can able to answer for computational and geographical questions. Alsothe OS module in Buddy used to operate onthe system OS.

This operation includesselecting folder, rename the folder, open new folder and view the folder path.

ADVANTAGES

Voice assistance allows the user to procure the modern approach of technologies and functionalities. Our VVA Buddy has various advantageous techniques.

- It opens all the system applications commanded by the user.
- It is designed to help the users to send mails and common messages to any other applications.
- It is incorporated with Wikipedia, Web browser and Wolframalpha to answer our commands.
- It also apprises the precise date time and weather.

This following section consists of Literature survey and Proposed System Model.

II. LITERATURE SURVEY

A system based methodology for performing expressions an order through a voice purchaser interface on a bunch of articles. The set is looked over a bunch of things, each having partner object sort at least one tag-peak field is identified with the thing sort and has a relating esteem. The arrangement of items is saved inside the compact PC memory. An expression is non-heritable from the individual and comprises of an order, partner object sort elective, a tag-peak field decision, and a value for the labeled control. Mindful to the expression, at least one thing is recovered from the arrangement of contraptions, the thing of the sort chose through the client and having a value among the tag-peak space decision that coordinates the tag-peak field expense got from the client the order is done on the thing. The article incorporates matter substance that is renewed to voice yield [1]. They envisioned that at some point PCs can recognize language and compute what we need, while and any place we need, and proactively entire duties for our benefit. Notwithstanding, discourse acknowledgment and machine advancing to perceive have persisted to be refined, and basically based records served through bundles and substance providers have arisen. We tend to consider that as pc frameworks end up being more modest and bigger pervasive[2].

The recognizer is intended to change a verbal verbalization from a person into partner substitute approach of information (e.g., text). A handheld individual associate just as a voice-recognizer and a trademark expression processor is uncovered. This clip of information is a thought for the

afternoon, data inside the person's book or data from the person's location book, Such as a flagging [3]. The Most famous use of iPhone is "SIRI" that makes the top shopper confer finish buyer adaptable with voice and it to boot responds to the voice charges of the customer. This is the personal assistance which perceives the voice of the buyer and reacts according to the voice. Additionally, this projected structure will change the technique for interchanges between finish buyers and hence the mobile phones [4]. This paper gives the detailed information about various Virtual assistants along with modules used [5].The paper offers a graph of the VPA applications, and consequently the conventional features and future examples. Virtual Personal Assistant (VPA) is that the exceptional back period of conveyor organizations for movable customers. VPA is acknowledged to be the acceptable progression of organizations to require care of the every now and again expanding request by the moveable experts for versatility and organization. The VPA controls the calls, manages the individual activities through record book, 192 A. S. Tulshan and S. N. Dhage engages the customer to get to his undertaking chairman by recommends that of voice interfaces, and consolidates every last one of the climate of Unified electronic correspondence. The Virtual Personal Assistant (VPA) can enable the customer to item deal with expanding interest of calls, messages, get-togethers and totally various activities.

Yash Mittal el al. As created the multi-functional `Smart Home Automation System' (SHAS) that can be adapted to a user voice and to recognize the voice-commands, independent of the speaker's personal characteristics such as accent. An Arduino microcontroller board is used for processing and control which makes this system cost effective. Thus for converting existing homes into a smart home this prototype i.e. Smart Home Automation System (SHAS) can be used [6]. Prerna Wadikar, Nidhi Sargar, Rahool Rangnekar, Prof. Pankaj Kunekar, “Home Automation using Voice Commands in the Hindi Language”: As present the Home Automation in Hindi language Voice commands was to implemented the dedicated hardware i.e. Arduino Uno and using voice recognition module that makes the system more cost-efficient and robust. The system can work without visual interaction with the various connected devices. This system allows users to make decisions and to regulate the home appliances with the help of voice assistants [7].Steve Joseph, Chetan Jha, Dipesh Jain, Saurabh Gavali, Manish Salvi , “Voice based E-Mail for the Blind pepole”: They design the system for sending emails for the blind people without the need of visual interaction with the screen. Speech-to-Text Based Life Log System for Smartphones [8], the technique used was Microphone of smart phone(Speech-To-Text). From this the user are able to search files using Text.

Aditi Bhalerao, Samira Bhilare, Anagha Bondade, Monal Shingade, Aradhana Deshmukh , “Smart Voice Assistant: a voice control solution for non-visual access to the Android operating system”, design the voice control solution for the mobile device through which user can do their task without visual interaction with the screen mobile screen[9].Chen-Yen Peng et al. [10] designed and built a tailor-made function for users without their attempt. Commands are taken from Google Home’s voice recognition and Bluetooth signals are transferred to Raspberry Pi to control the connected devices. This paper mainly focuses on combining characteristics of Google Home with Google Assistant Personal Voice Assistant using machine learning. KALYAN KUMAR, K. PAVAM KUMAR REDD “CORTANA (Intelligent Assistant)”, describing the general language and processing the capabilities of the Cortana are derived from Tell me Networks and combined with a Semantic search database called Satori which is very much used for searching the data11].

III. PROPOSED SYSTEM MODEL

Our proposed model of VVA named as Buddy is shown in the Figure1. This model receives user’s voice command through microphone. The voice commands are recognized through google speech recognition system which has the ability to recognize a word or phrase and converts them into machine language. The Voice commands are received by our model as Natural Processing Language (NPL), and then the NPL contentsare converted as a text and voice based on the user requirement. When the user is blind, he may looks for voice content and when the user is deaf, he may looks for text content. Our model solves both purposes. Whenever the user gives the command, AI checks whether it is the question or an action. Suppose, the command is action, it is performed by the voice assistance and output is given to the user via speech synthesis voice. Suppose, the command is a question then AI will search the question in the Google Clouddatabase and it responds to the user by via speech

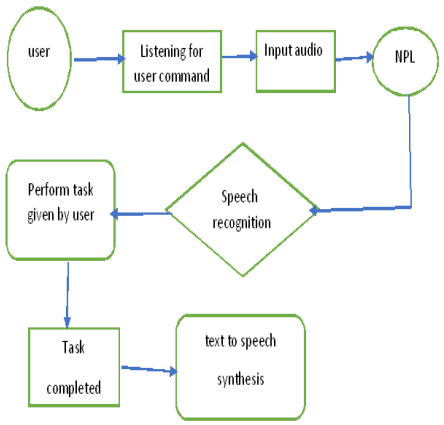

Figure1: System Flow ofVirtual Voice Assistant (VVA)

Synthesis voice. Our voice assistance uses“Google text to speech API” to understand all the words spoken by the users.

A. Virtual Voice Assistant

The VVA is used to make the user’s work easier. Whenever the user gives the request to the VVA, it accepts our nature of language using Google speech recognition. It has mainly two modules

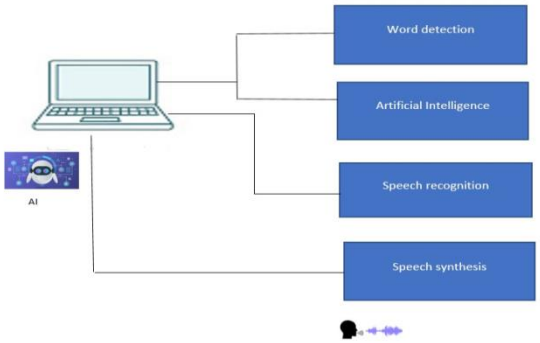

Figure2: System Design of Virtual Voice Assistant (VVA)

B. Speech-recognition module

Speech recognition module supports for several engine and API on both online and offline. Google speech recognition modulehelps to recognize the natural human language and convert it into machine language. It recognizes only the English language. This module perceives the speech as the input and delivers it in text format.

*C.*Wakeup word detection module

This module used to wake up the voice assistance by wakeup word. If we call the wakeup word voice assistance will start to listen for user command. In this model the wakeup word is buddy. When you call this name the system start to run and listen.

IV. CONCLUSION

VVA helps the users with hand free voice control of their system. Speech recognition is the technology which provides the new way of human interaction with machine. As existing Voice assistant this model also saves the time. It is very much helpful to the physically challenged people. It addresses al user queries. In this we combined user-friendly input method with a self-learning AI. It is different from the existing AI by supporting simple automated Assistance for daily commutes. Currently, this model can be used with PC. In future , it can be implemented in all the devices.

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