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Report on Virtual Personal Assistant

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Abstract: *A virtual personal assistant (VPA) is a helper or agent of the owner or the operator to whom it belongs too, it is a special type of assistant with is skilled in doing variety of tasks assigned to it. Such as giving response to mobile facilities in the form of assistant which perform tasks, responding to emails, messages and many other functions by speech recognition. It works as offering administrative services to clients from a remote location, usually from home or office, it manages basic tasks such as calendars also. The capabilities and usage of virtual personal assistants (VPA) are expanding rapidly, it also controls automotive devices via voice recognition. Now the Virtual Personal Assistant (VPA) does not refer only to a machine but an Artificial Intelligence, person whose primary job is to help his employer to do a specific online job virtually.*

Keywords: VPA, Speech Recognition, Administrative Services, Automotive Services, Artificial Intelligence

I. Introduction

Now a days human to human interaction in giving the services are being olden enough and the dependency on each other for the services are reduced. Due to digitalization the use of human-to-human interaction is reduces, the day-to-day activities can be handled smartly by using Virtual personal assistant (VPA) it is an efficient way to carry out the tasks and which can take care of day-to-day tasks efficiently. As we know that computers, Laptops, mobiles have became essential in once life in everyday activities, it can carry out simple calculations, can give exact date using Calenders and other tasks, Virtual personal assistant uses voice recognition to perform its task, it follows the tasks assigned by the user such as scheduling appointments, making phone calls, making travel arrangements, and managing email accounts. Virtual personal assistants (VPA) are an important achievement done by the innovators to perform many casual and essential tasks, which have become a day-to-day part of human life. These virtual personal assistants can be seen in all smart gadgets such as smartphones, tablets and also smart watches such as band watches and other gadgets. It is specialised in giving the optimum results through its services. The application of Virtual personal assistants (VPA) is growing fast in our personal and professional life. Some VPAs can understand and respond to human speech using synthesized voices. Users may use voice commands to request their Virtual personal assistant to answer the Questions and perform the further process, it detects the background uneven noise and admit the process to get stopped as it can affect the search process which as been assigned by the user. Today we can talk to machines by the help of Virtual Personal Assistant, it follows the procedure to interact human and machine smartly. This type of Technology of Virtual personal assistant is useful for old age, blind and physically challenged people.

Virtual personal assistant are software programs that help you ease your day-to-day tasks, such as showing weather reports, creating reminders, an many other functions. They can take commands via text (online chat bots) or by Voice.

II. Related Work

Each company developer of the intelligent assistant applies his own specific methods and approaches for development, which in turn affects the final product. One assistant can synthesize speech more qualitatively, another can more accurately and without additional explanations and corrections perform tasks, others can perform a narrower range of tasks, but most accurately and as the user wants.

Obviously, there is no universal assistant who would perform all tasks equally well. The set of characteristics that an assistant has depends entirely on which area the developer has paid more attention to.

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Since all systems are based on machine learning methods and use for their creation huge amounts of data collected from various sources and then trained on them, an important role is played by the source of this data, be it search systems, various information sources or social networks

The amount of information from different sources determines the nature of the assistant, which can result as a result. Despite the different approaches to learning, different algorithms and techniques, the principle of building such systems remain approximately the same. The main technologies are voice activation, automatic speech recognition, Teach-To-Speech, voice biometrics, dialogue manager, natural language understanding and named entity recognition.

III. METHODOLOGY

Virtual Personal Assistant works on real time as it gives us response quickly depending upon the command we are giving. It uses speech recognition feature to recognize voice command and perform task as requested by the user. It is also capable of filtering command when something is asked, but if there is lot of disturbances the we have to repeat the command as it will respond "I am not able to understand".

- **Speech Recognition Module:** The speech recognition helps us to talk to the system in order to respond to our commands. This helps us for the conversion of voice command to text to make to understand to the system. It gives us hand free control for the system as we are giving voice command and with the help of this module system is able to understand it.
- **Content Extraction:** Content Extraction is use for automatically getting information in a machine-readable document.
- **Python:** The Python is easy to use and it is syntax free programming language. Using Python, data fetching time complexity as well as space complexity will be reduced at some extend. There is various package available in python which will help to build a stable fast and secure working AI.
- **API:** API stands for Application Programming Interface. An API is a software intermediary that allows two applications to talk to each other. We can also say, an API is a messenger that delivers your request to the provider that you're requesting it from and then delivers the response back to you.

IV. SYSTEM ARCHITECTURE

```
import speech_recognition as sr
import webbrowser
import datetime
import wikipedia
import os.path
import re
import sys
from gtts import gTTS
import tk
import tkinter as tk

import tkinter as tk
tts = gTTS('hello', lang='en')
```

- **Google Text-to-Speech Module:** Google Text-to-Speech is a python interface for google Text-to-Speech API. gTTS powers applications to read aloud (speak) the text on the screen. This package interface with google translates API.
- **Web Browser:** To perform Web Search. This module comes built-in with Python.
- **Datetime:** This module also comes bulit-in with python. It is used to show date and time.

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- **Wikipedia:** We use Wikipedia to get the information for our project. As we know Wikipedia is a big source of knowledge, so if we ask any information, we get it from Wikipedia.
- **Os.path:** This module show us the path we are linking with the operating system. It gives us a type of access to the operating system.
- **Re:** This module provides regular expression matching operations.
- **Sys:** It is called system specific parameters and functions. This module provides access to some variables used or maintained by the interpreter and to functions that interact strongly with the interpreter.
- **Tkinter:** The tkinter package ("Tk interface") is the standard Python interface to the Tcl/Tk GUI toolkit.

V. CONCLUSION

This paper describes one of the most efficient ways for voice recognition. This system uses machine learning. It overcomes many of the drawbacks in existing solutions. Virtual Assistant make life easier to humans as it is less time consuming. It provides us a new way of communication by giving command in the form of voice to the computer. Assistant can perform various task like playing music, fetching information, giving us weather update, play movies, can perform calculation and many more task.

REFERENCES

[1]. P.Praddeep, P.Balaji, S.Bhanumathi, "International Journal of Recent Technology and Engineering", ISSN: 2277-3878, September 2019

[2]. Dr. Kshama V. Kulhalli, "Personal Assistant with Voice Recognition Intelligence", ISSN 0974-3154 Volume 10, Number 1, 2017

[3]. C. Gaida, P. Lange, R. Petrick, P. Proba, A. Malatawy, and D. Suendermann-Oeft, Comparing Open-Source Speech Recognition Toolkits. The Baden-Wuerttemberg Ministry of Science and Arts as part of the research project, 2011

[4]. G. Bohouta, V. Z. Këpuska, "Comparing Speech Recognition Systems (Microsoft API Google API And CMU Sphinx)", Int. Journal of Engineering Research and Application 2017.

[5]. Microsoft Corporation (2016) Historic Achievement: Microsoft researchers reach human parity in conversational speech recognition", https://blogs.microsoft.com.

[6]. Deepak Shende, Ria Umahiya, Monika Raghorte, Aishwarya Bhisikar, Anup Bhange" AI Based Voice Assistant Using Python" JETIR February 2019

[7]. Hirschberg, Julia, and Christopher D. Manning. "Advances in Natural Language Processing." Science 349 (6245): 261–266. doi:10.1126/science.aaa8685.