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The Voice Assistant

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ABSTRACT: Voice control is a major growing feature that change the way people can live. The voice assistant is commonly being used in smartphones and laptops. AI-based Voice assistants are the operating systems that can recognize human voice and respond via integrated voices. This voice assistant will gather the audio from the microphone and then convert that into text, later it is sent through GTTS (Google text to speech). GTTS engine will convert text into audio file in English language, then that audio is played using play sound package of python programming Language. Artificial intelligence technologies are beginning to be actively used in human life, this is facilitated by the appearance and wide dissemination of the Internet of Things (IOT). Autonomous devices are becoming smarter in their way to interact with both a human and themselves. New capacities lead to creation of various systems for integration of smart things into Social Networks of the Internet of Things. One of the relevant trends in artificial intelligence is the technology of recognizing the natural language of a human. New insights in this topic can lead to new means of natural human-machine interaction, in which the machine would learn how to understand human's language, adjusting and interacting in it. One of such tools is voice assistant, which can be integrated into many other intelligent systems.

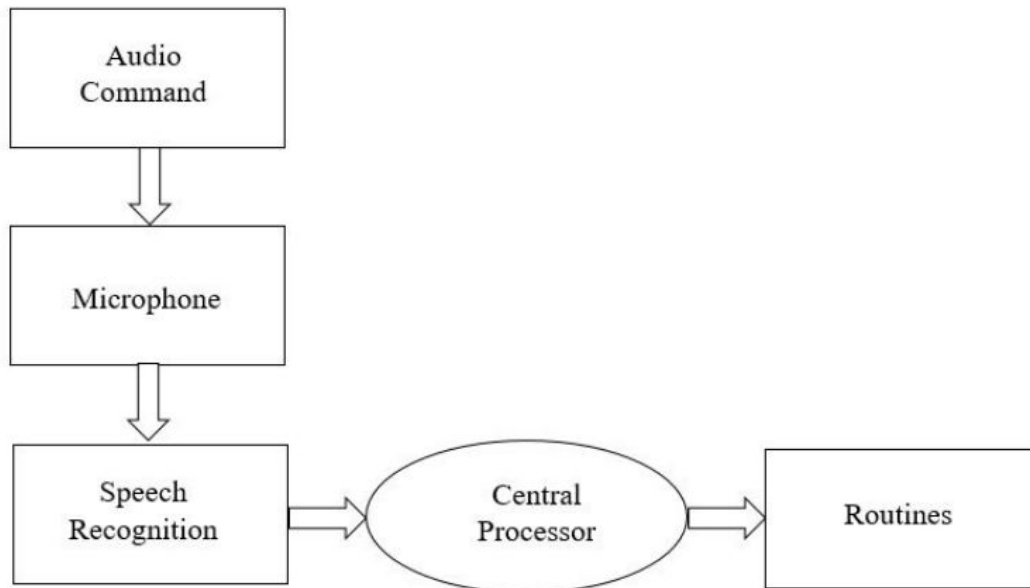
KEYWORDS:- Voice control, AI-based Voice Assistant, GTTS Engine, Playsound, Python.

I. INTRODUCTION

Today the development of artificial intelligence (AI) systems that are able to organize a natural human-machine interaction (through voice, communication, gestures, facial expressions, etc.) are gaining in popularity. One of the most studied and popular was the direction of interaction, based on the understanding of the machine by the machine of the natural human language. It is no longer a human learns to communicate with a machine, but a machine learns to communicate with a human, exploring his actions, habits, behavior and trying to become his personalized assistant. The work on creating and improving such personalized assistants has been going on for a long time. These systems are constantly improving and improving, go beyond personal computers and have already firmly established themselves in various mobile devices and gadgets. One of the most popular voice assistants are Siri, from Apple, Amazon Echo, which responds to the name of Alex from Amazon, Cortana from Microsoft, Google Assistant from Google, and the recently appeared intelligent assistant under the name "AIVA". presents a brief introduction to the architecture and construction of voice assistants. provides proposed plan of work. provides methodology of the work of a voice assistant AIVA. describes the test results of the voice assistant. describes the conclusion and future scope of an assistant using various artificial intelligent algorithms, and gives a comparative evaluation of the learning ability of algorithms. The main goal of this work is to build a local voice assistant that does the work of human and the daily task that a human needed to do in daily life. AIVA (2018) aimed at developing a voice-controlled personal assistant which is doing many things such as to search the Internet. It has some new features like posting comments on the social media websites such as Facebook, Twitter, etc. By just few simple commands.

II. DESIGN METHODOLOGY

We have got a bent to shape our application able to the utilization of gadget voice with the assistance of sapi5 and pyttsx3. Pyttsx3 can also be a text-to-speech conversion library in Python. Now, like distinctive libraries, it works offline and is similar temperament with each Python 2 and three. The Speech Application Programming Interface or SAPI is a diploma API evolved through Microsoft to permit the usage of speech popularity and speech synthesis inside Windows applications. Then we have got a bent to stipulate the talk function to differ this technique to talk the outputs. At that time, we're visiting outline a characteristic to want voice instructions the utilization of the gadget microphone. The foremost function is then made public during which all the competencies of this technique rectangular degree are made public.



2.2 The planned system is meant to possess the following functionality:

- 1) The Jarvis asked the user for input and keeps listening for orders. The time for a hearing is visiting be set up in step with the user's control
- 2) If the assistant fails to grasp the command its visiting keep asking the user to repeat the command once again and yet again.
- 3) This assistant is visiting be bespoken to possess either male or female voice in step with user's demand.
- 4) The current version of the assistant supports choices like Checking weather updates, deed and checking emails, Searching Wikipedia, Stream music, Open applications, Text messages, checking dates and times, taking notes, show notes, Open YouTube, etc.

2.3 Other applications.

- a) Streaming Music: The user can command Jarvis to play a music track and it's going to execute a command and search into it from the song Folder.
- b) Read the Latest News from Headlines: Jarvis will examine out latest headlines from the knowledge retailers of the required topics you care about or need information.
- c) Keep Tabs on the Traffic the Weather: Jarvis can research the weather forecast or alert you if there is an accident that will delay your morning journey.
- d) Set Reminders/timers: You'll be able to tell Jarvis to wake you up daily morning at 4 a.m.
- e) Answer the Following Questions: Jarvis can look up simple information, solve mathematical problems, or tell you a joke.

2.4 A. Speech Recognition

The system uses Google's online speech recognition system for converting speech input to text. The speech input Users can obtain texts from the special corpora organized on the computer network server at the information center from the microphone is temporarily stored in the system which is then sent to Google cloud for speech recognition. The equivalent text is then received and fed to the central processor.

B. Python Backend

The python backend get the output from the speech recognition module and then identifies whether the command or the speech output is an API Call, Context Extraction, and System Call. The output is then send back to the python backend to give the required output to the user.

III. ASSOCIATED WORK

3.1 NOTABLE ALGORITHMS FOR DETECTING SPOILERS

NLP implies "Natural Language Processing", which is part of the user language of computer science and one of the applications of artificial intelligence. This is a technology used by machines to understand, manipulate, and interpret human language. This help developer organize their knowledge to perform tasks such as translation, book reading, speech recognition, and topic segmentation.

- 1) NLP helps users ask questions about a topic and get a direct answer within seconds.
- 2) NLP provides accurate answers to your questions. That is, it does not provide unnecessary and unnecessary information.
- 3) NLP helps computers communicate with people in that language.
- 4) Most IT industries use natural language processing to improve the efficiency and accuracy of the documentation process and identify information from large databases.

Speech Recognition System: The speech recognition system is the core of the voice application system, which is capable of understanding the voice input given by the user, and at the same time operating the applications efficiently and generating voice feedback to the user. This system is an important component for users as a gateway to use their voice as an input component. (Figure 3.3). In a word, in order to clearly recognize the user's speech command and get a response from the system, we should consider that the speech recognition system contains the whole process by which the application system directs the generation. voice signal to text data and some important meanings, forms of speech.

Initially the condition is that if the Jarvis voice assistant is active or not, if it is active then it asks for the user input otherwise make Jarvis active (make it on). Then user provides the input in the form of speech or text, after that if the input provided is in text then it goes for the action to be taken or the skills to be executed, else if the input is in speech then it uses the speech recognition feature and converts it into text and goes for the action. (Figure 4.1) a) : Support vector machine: A support vector machine (SVM) is a simple algorithm that professionals can use for classification or regression activities. They work by finding a hyperplane within a data distribution, which you can visualize as a line separating two different classes of data. There are often many hyperplanes capable of separating the data, and the algorithm will select the optimum line of separation. In the SVM model, the optimum hyperplane is the dividing line that offers the greatest margin between the different classes. SVM are capable of working in more than one dimension if they are unable to find an ideal hyperplane to separate the data into two dimensions. This makes them extremely effective for creating classifications from complicated data distributions.

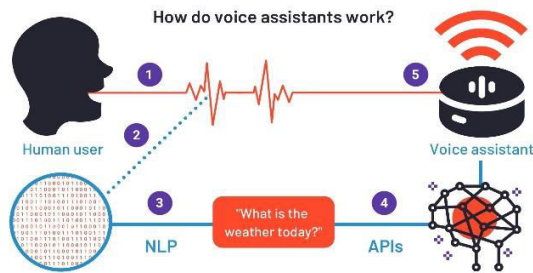


FIG.1 NPL

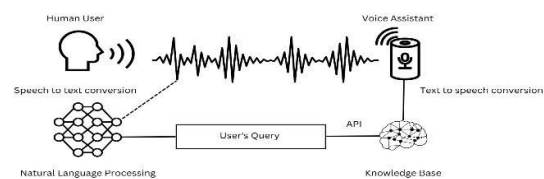


FIG.2 SYSTEM

IV. RESULTS AND DISCUSSIONS

The voice assistant, on starting, will initially hold for the input to be given from the user. If the user gives an input command, via voice, the assistant will catch it, and search for the keyword present in the input command.

USER INPUT - The assistant will grasp for the user to click on start or quit button

Wakeup command – The assistant will hold for the user to give wakeup command

Our Voice Assistant open various application after listening and recognizing it.

V. CONCLUSION

This study has found that generally. . . JARVIS is a very helpful voice assistant without any doubt as it saves time for the user through conversational interactions, effectiveness, and efficiency. But while working on this project, there

were some limitations encountered and also realized some scope for enhancement in the future .This Project will be helpful for people of all generations as well as to people with some disabilities or people with some special cases. The personal voice assistant will be easy to use and will reduce the manual human efforts for performing various tasks. The functionality of the current voice assistant system is limited to working on Desktop based and working online (required to have internet connection to perform tasks) only. The voice assistant system is modular in nature so that addition of new features is possible without disturbing current system functionalities.

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