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Survey on Artificial Intelligent based Voice Assistant

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ABSTRACT: AI can bring real conversations to life. Voice assistants are artificial intelligence agents that listen to human speech and answer with inbuilt speech. The machine synthesises the user's message, breaks it down, separate it into categories, and provides a significant response in return. Here our system named as KORO voice Assistant featuring Voice Recognition Intelligence, which accepts voice or text input from the user and process it and returns the Outputs in different forms, just like actions to take or search results, are determined by the end user. The Koro who permits the end user to interface with a desktop computer through speech and responds to the user's voice commands So, by using this system, the customers can operate their duties extra efficaciously, Because some physically disabled people are incapable of operating laptops, mouse, or keyboards appropriately, and because some elderly people have difficulty seeing the content on a laptop's desktop or screen,. Here we solve this problem for physically impaired peoples. In our system study the end user can give instructions to Koro (desktop application) what they want to accomplish, and the system will take that as voice input. Then after, the speech-to-text conversion will be performed, and the user will receive output in sequence with that.

KEYWORDS: GTTS engine - Google text to speech, Pyaudio, Voice recognition, pattern recognition, Artificial intelligence, Python.

I. INTRODUCTION

We understand that as some disabled people are unable to use a portable computer, a mouse or keyboard properly and adults may have difficulty seeing a portable computer screen. Therefore, in our system that is the voice benefit of portable computers that will reduce the usage of application of input devices such as keyboards ,mouse, touch pens, and create a smart personal assistant that can perform user tasks with the help of a visual user voice. used to listen to and process audio commands.

The voice assistant we developed was created by using Python modules and libraries on a desktop or we can say on laptops. This is only a rudimentary version of the helper that will execute all of the fundamental functions based on the needs of each user. Next up are the different companies like Google, Apple that use different APIs for this purpose. After taking the input there is a need to understand the audio signal, because this "Google API" is used to convert voice into electrical power. In our project, we use the voice command to enter data into the system to use the acoustic converter microphone. To use them in a simple and fun way we need a fast and reliable installation at the same time.

The multilingual feature ensures that customer interaction is not limited by language. The use of visual aids is growing rapidly after 2017, with many products coming to market. In our system, a user command will be taken as a voice command and converted to text in order to process relevant information in accordance with the user command. The system will then deliver the output to the user. This platform will be beneficial in a variety of areas, including education and the purpose of daily living, particularly for those with disabilities.

II. METHODOLOGY

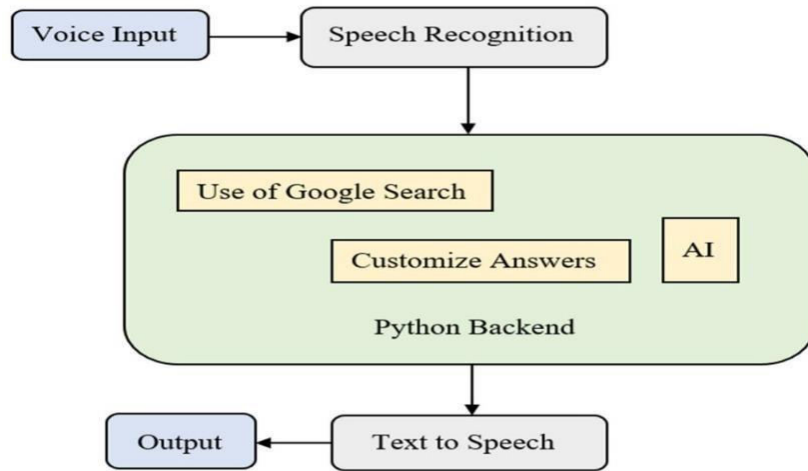


Figure-1 Task Execution

To construct an AI-based Voice Assistant, all voice assistants were developed using high - level languages that listen to vocal commands and response using Python programming language.

1. User voice as input –

- Take microphone input.
- Translate the word or phrase into text.
- Save the text in a variable and / or you can take it directly as user input.

2. Voice recognition –

Voice recognition is the ability of a machine to listen to words and recognise them. Here we have used speech recognition in Python to convert spoken words into text, query or provide feedback. Moreover, one can edit other resources to immediately respond to the words that have been spoken. You can create speech recognition in python with the help of computer programs that capture input, process, and convert it into a proper form.

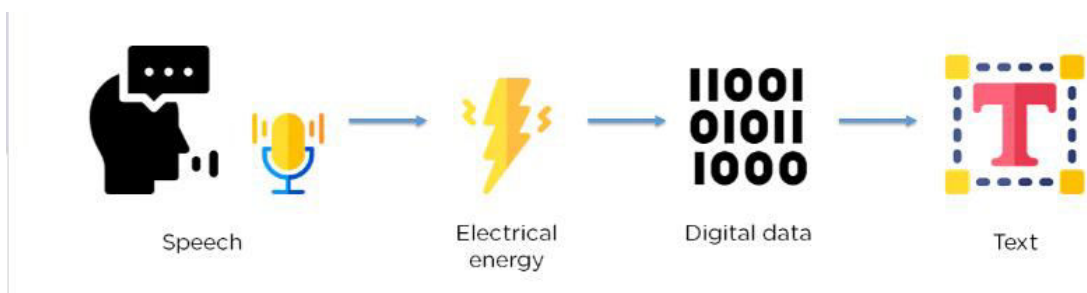


Figure 2-Working of Speech recognition

3. Speech to text- This is done with the help of Google Speech Recognition. It requires an active and efficient internet connection to work on this particular module. However, there are positive offline Recognition structures such as Pocket Sphinx, however have a very rigorous set up technique that requires quite a few dependencies. Google speech recognition is one of the most easiest and convenient to use.

4. Algorithm - Voice algorithms devices / applications that respond to requests using speech technologies, natural language processing, and artificial intelligence. The device is able to do this by utilising technology. compiles the user's message, scans properly, and provides a logical output as in the form of return.

5. Making Decision

Artificially Intelligent Voice Assistants are becoming increasingly popular among consumers (AIVAs). AIVAs are now able to cope with many different exceptional day-to-day duties and are additionally increasingly more supporting customers with having decisions, making AIVAs a prosperous theme for advertising researchers. We advance a collection of propositions related to how client decision-making techniques may additionally trade When moving from traditional on-line purchasing settings to AI-powered voice-based dialogues, the goal was to encourage additional educational opportunities. questioning and lookup in this unexpectedly developing, excessive influence location of consumer-firm interplay.

6. Text to speech output - Technically, that allows you to convert text into natural sound in different languages and words within an existing app Provide your product voice and improve customer experience and engagement with users in their language.

III. SYSTEM ARCHITECTURE

The main user voice input will be used to execute this software. Using the word as input, speech recognition will transform it to text. The speech recognition-generated text will be utilised to process inquiries and download pertinent data. This is done by Google speech recognition module. Downloading information will be processed from a variety of sources such as Google Search, the custom answers we will write while utilising this paradigm. After the data has been downloaded, it will be converted to speech utilising text to speech, and the user will be given the appropriate output.

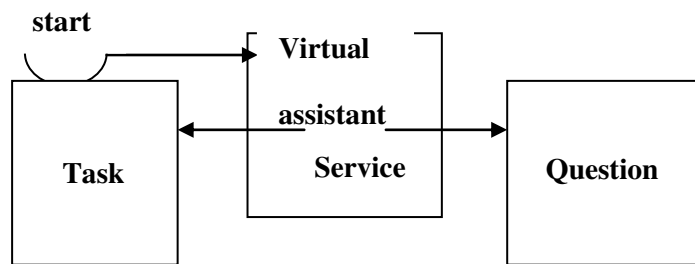


Figure 3- Working of System Architecture

IV. MODULES

We used the following modules to create this programme:

- 1) **Speech Recognition Unit:** A speech recognition unit recognises and converts vocal patterns into text. As a result, we'll use it to turn user voice commands into text, which will then be used to download data.
- 2) **Backend in Python:** At the end of the Python, we'll put it together to deliver appropriate responses to user instructions. First and foremost, we will use the non-removable Google search feature to perform tasks that should be performed by Google search, such as searching for information about anything or a location. Second, we'll employ personalised responses, such as when a user requests the current date, the system will provide the date. Third, we will employ AI in such a way that if a user uses the system in the morning, we will greet them in the same manner in the evening.
- 3) **Text-to-Speech Module:** The text-to-speech module converts text to speech or human voice. As a result, we'll use the text to voice module to offer the user with the final output in speech format.

V.CONCLUSION

In comparison to other assistants, we have accomplished a great deal in our project. Because it is a hands-free programme, it is quite useful in human life nowadays. It's a really straightforward application. It is also used by blind people to use laptops or desktop computers, or in the business sector, where, for example, in the laboratory, a person wears gloves and bodysuits for their own safety, making typing difficult; however, he can get any information using a voice assistant, making their work easier. Voice assistants are beneficial in a variety of industries, including education, everyday living applications, and domestic appliances, among others. Voice assistants are also valuable for the uninformed, since they can obtain any information and provide comfort. In ordinary life, the voice assistant has vastly



improved. Many voice care firms that are attempting to improve interaction with additional features have taken the next step, and many young people have begun to use the voice assistant in everyday life, with the outcome indicating a very positive response from a variety of sources. Voice assistants have vastly improved over the last two years.

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