Interactive Bot Using Python

Dr. Mercy Paul Selvan [1],M.S. Roobini[2],S. Jancy[3], Suji Helen[4],Viji Amutha Mary[5], Angajala Preethi Servani [6]

[1][2][3][4]Assistant professor, Dept. of CSE, Sathyabama Institute of Science and Technology
[5] Associate Professor, Dept. of CSE, Sathyabama Institute of Science and Technology
[6]UG Student, Dept. of CSE, Sathyabama Institute of Science and Technology, India

ABSTRACT

The goal of computer science (AI) is that the identification of natural dialogue between machines and humans. In recent days, the dialogues, additionally known as interactive informal square measures are the quickest growing space in computer science. Dialogue system technique has been utilized by several firms to determine varied forms of Virtual Personal Assistants (VPAs) supported their areas and their applications, like Cortana, Siri, Alexa, Google Assistant. However, we've used the multi-model dialogue systems that method 2 or additional combined user knowledge inputs, like speech recognition, image, video. The new model of VPAs that square measure accustomed increase the interactions between machines and humans by victimization varied technologies, like speech recognition, text to speech the huge dialogue and informal content, and also the cognition base. The VPAs are often utilized in totally different applications that embrace medical, robotics, automation, security access.

Introduction

Voice Commanded Systems implies primarily that a device that process speech as the Associate in nursing data, decodes or understands the meaning of data processes that Associate in nursing produces an appropriate speech performance. Any voice command system requires three basic parts that calculate square voice to text unit, query processor and voice control text.Voice was a really important contact district today. Since the sound and voices method is faster to the transcription method so voice regulated command system square measure omnipresent for the laptop devices. There square measure at intervals some wonderful developments in the speech recognition field. A number of the new square developments measure due to improvements and the large use of extensive expertise and profound learning in this field. Such technologies should have attributed deep learning ways of developing and victimizing a variety of speech recognition systems to technology-trade victimization, Google has been able to cut the seven- member error word rate to St Martin's Day equivalent, with the program that had the word error rate from nineteen to sixty-eight. Text to speech or speech to text conversion is that, after the text is read aloud, the conversion of process of the computer understood text into any language A speaker could know that. The square measure divided into the processes of ballroom dance. The big half is accountable for the conversion into word format with figures and acronyms. Additionally it is mentioned as standardization of the text. The second aspect includes turning the input into a coherent one. Voice recognition is that a laptop is for instance the capacity of the computer to recognize terms and phrases that is spoken any dialect. Then square measurements of these terms and phrases resurrected to a layout the machine might understand. Speech detection is a victimization language system applied. A speech recognition tool may also be a touch vocabulary tool for certain users or an bulky small user system associate in Nursing.

SYSTEM INTEGRATION

Present Systems
Their present system consists of a few drawbacks like they can only create predefined voices and can store restricted voices on their own. So, we seem not to be able to make full use of that.

Proposed System

The system anticipated is as if it overtakes the drawback of the current system. Project style involves the use of words to communicate. Here it receives as input irrespective of device When the instruction gets into the sort of voice that the word implies.

Hardware Implementation
Microphone is often used to allow the audio mixer to sound. Once the computer is hot, keywords will be tested for the audio mixer. These square keywords are important for the operation of the voice control system as the systems accept the notion of keyword scanning and effectiveness fitting keywords.

Keyboard
The keyboard acts primarily as an Associate in Nursing input interface for developers, providing access to the computer code for making changes.

Mouse
The mouse also serves as a companion between the device and the developer in the nursing environment, and does not have direct contact with either the end customer.

Raspberry pi
Raspberry Pi is indeed the cornerstone of the voice recognition system since it requires connecting parts along each process information stage. The OS called Raspbian is attached to the Coyote State sheet and then, at intervals, loads the cardboard slot to get a functioning os.

It requires unbroken power of 5V, 2.1 mA. Either Associate in Nursing AC uses a small USB charger or Associate in Nursing Influencing Bank will supply it.

Ethernet
Ethernet is getting used to offering voice command framework with a network association. As the method relies on on-line text to conversion of expression, on-line query process and on-line expression to conversion of text, we should be kind of a continuous partnership to understand all this.

Monitor
The monitor provides the developer with an extra to make some improvements, if any, thanks to inspection of the code. It is not necessary for any form of communication between end-users.

Speakers
Speakers, once the client indicates that the request has been addressed, it resurrects the text output of that request to express victimization of net text to voice app. At present, this voice is that the sound content is transmitted to the consumer's speeches that test squarely on audio victimization.
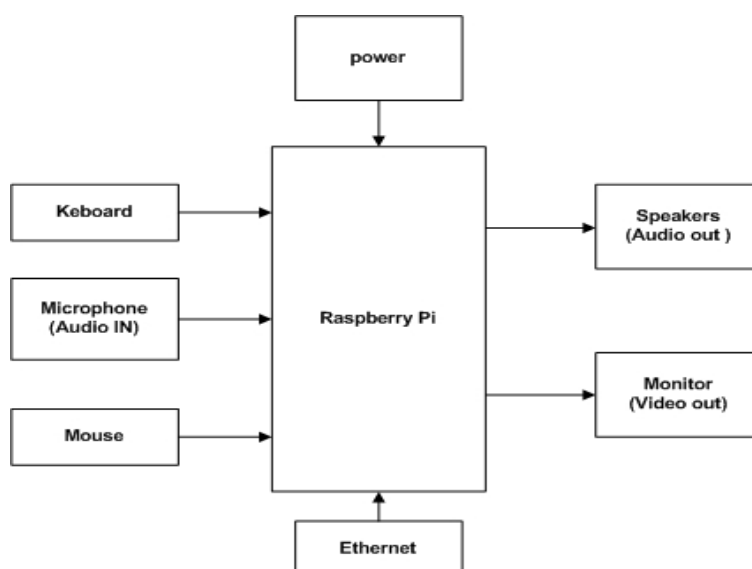
Fig.1. Software setting up of voice recognition system

Events flow into the Voice Control System

Firstly, when the device is started, the user make the use of mike and the input has been sent. It requires voice as the input from the client and then it is sent to the computer which then proceeds for the next process. Which instead send the voice to the text converter then it changes it into text format as the output which eventually found and recognized The text is then processed, and parameters are verified. The voice recognition system is designed around the parameters process, wherein keyword matching is tested for the text. And once it provides the corresponding output if keywords suit.

In word type this result is. Using a script to speech translator that involves the use of a character recognition system, it is then converted to speech output. OCR classifies and describes the text which is then translated by the text to the voice engine into the audio interface. As shown in Figure 2 this output is transmitted through the microphones attached to the raspberry pi headphone jack.
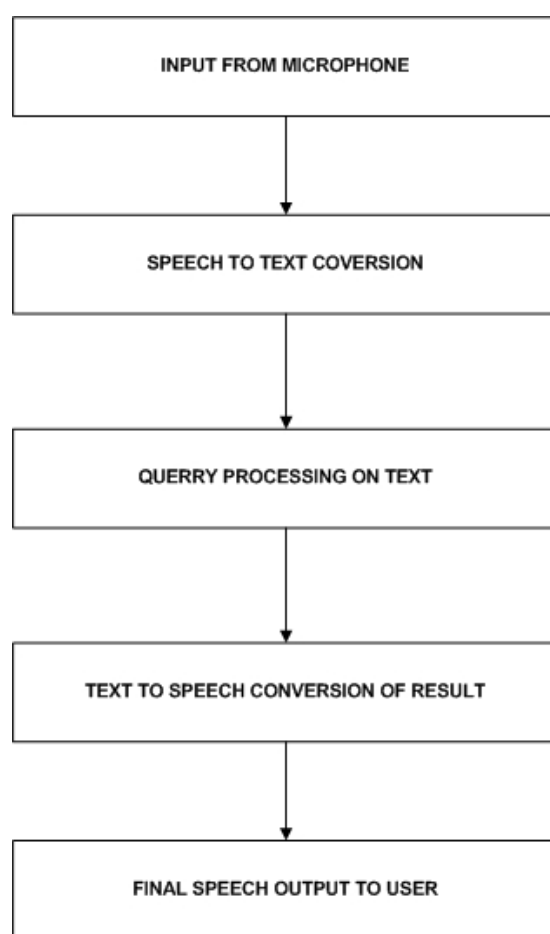

Fig.2. Flow of voice order events

MODULES IMPLEMENTED

Text To Speech Engine

One of the Text--(TTS) engines is Google Text to Voice(gTTs) that is used to generate a spoken speech representation of the text in a computer document, such as a support file or a web page. GTTS may allow any dim-to read the computer screen information or simply increase the reading of a text message.An application must be built in the Amazon developers console to use the engine (gTTs), and the provided key called as API is used to get the voice processor. As data is delivered over the Amazon servers it needs

continuous internet connection.

Query Processor

The Voice control System has a query processing unit, which functions as other database processors usually do. It involves taking the users input, checking out the appropriate outputs and then providing the correct output to the user. We use the position wolfram alpha in this method because of the source to enforce query processing within the program. The questions to be passed on to this module include retrieving details on popular celebrities, basic mathematical calculations, explanations of some general object, etc.

Wikipedia

This unit works on term "wiki." The software searches for what you'd like to know. The question for the specified query is then generated in the Wikipedia API. It generates a summary of the question information, and the data is transmitted through the microphone to the speaker in voice form. In case of a malfunction the fault statement is created saying, "In the wiki's dictionary."

WolframAlpha

The Wolfram Client Library makes it easy to integrate the massive collection of Wolfram Language algorithms also because of the Wolfram Knowledgebase directly into any Python code that you simply have already got. This saves you considerable time and energy when developing new code. In this post, we'll first show you how to set up a connection from Python to the Wolfram Language. Next, we'll explore a couple of methods and examples you'll use to try to a computation within the Wolfram Language then call it to be used in your Python session.

SPEECH RECOGNITION

Recognizing speech means it requires audio as input, and Speech Recognition which retrieves. This is easy to submit. Instead of creating scripts designed to access microphones and process the audio files from scratch, Voice recognition can recognize you and run in a few minutes. The Speech Recognition library, which serves as a bridge for various speech recognition APIs and is thus incredibly flexible. The very first — the Google Cloud Voice API — follows the Speech Recognition library's hard-coded standard API keys.

RESULTS AND DISCUSSIONS

"Working on thought" is the logic behind this system and is designed accordingly. A button is used by our personal assistant to require a command. Whenever a command is given the algorithm works by searching for the similar module in the code. When the command that is given is matched with any set of action – key or words then that module is executed and particular action is performed. Find my iPhone and similar applications works on API call. For achieving the customizability, the text – to – speech converters and vice versa are open source. When the system can't find the modules that are supposed to be matched with the given command then the system comes up with a message stating the apologies of the inability to perform the command. The device operates on the lines planned with all of the features originally suggested. In addition, the device also provides ample long-term promise as it is highly flexible, and new modules are frequently introduced at any time without disrupting the functionality of current modules.

Fig.4.1 Introduction

Fig. 4.2 Opening Applications

Fig.4.3 Displaying Date and Time

Fig. 4.4 Calculations and Interaction

Fig. 4.5 Determining location and weather

CONCLUSIONS AND FUTURE STUDIES

The idea and rationality for this process is introduced by me, the errors in the existing system and the way to approach and solving the existing errors and the architecture of the given Voice Command System is also described. The Open source system modules are used in here. The modules are well customized in order to be consistent with the system. Accordingly, basing space – time complexity the modules helps us to get the simplest performance.

In future, this system makes a revolution.Likewise, in the mobile industry already Apple.Inc's Siri, Google's Voice Assistant and Windows' Cortana is already playing tough in the game. Also, this also helps in achieving IOT connected in – home devices.

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