Design and Development of Desktop Language Translator

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Abstract: Today the technological advancement is increasing day by day. Earlier only there was a computer system in which we can do only few tasks. But now machine learning, artificial intelligence, deep learning, and few more technologies have made computer systems so advance that we can perform any type of task. In such era of advancement if people are still struggling to interact using various input devices, then it's not worth it. For this reason, we developed a voice assistant using python which allows the user to run any type of command in Linux without interaction with keyboard. The main task of voice assistant is to minimize the use of input devices like keyboard, mouse etc. It will also reduce the hardware space and cost.

Keywords: Desktop Assistant, Python, Text to Speech, Virtual Assistant, Voice Recognition

INTRODUCTION

Everything that a human being can perform is being replaced by machines in this technological era. Changes in performance are one of the key factors. We educate our machines to think like humans and do tasks on their own in today's environment. As a result, the concept of a virtual assistant was born. A virtual assistant is a digital assistant that recognises voice commands and performs relevant tasks as requested by the user using voice recognition features and language processing algorithms. A virtual assistant can filter out ambient noise and return relevant information based on specific commands given by the user. Virtual assistants are entirely software-based, although they are now integrated into a variety of devices, and some of the assistants are even mobile.

1. LITERATURE REVIEW

Bassam A., Raja N., and others have written on the most important statements and speeches. The analogue signal was used to communicate between humans and machines; [1] which was then converted to a digital wave by voice. This technology is widely used; it has numerous applications and allows machines to respond accurately and consistently to user voices, as well as provide valuable and appreciated features. Speech Recognition System (SRS) is on the rise and has a wide range of applications. During this research, the quantity is gathered from publics in Bangladesh. Mel-frequency cepstral coefficients (MFCCs) dependent characteristics and hidden Markov model (HMM) dependent classifiers are utilized for identification. Dialectical variance [2] make happen a part of performance deprivation. In situation of gender-based trials, female spoken digits had greater accuracy rates than those by male spoken digits. The research provides a summary [3] of the speech identification procedure, its basic model, and its application, techniques and also describes reasonable research of several techniques that are utilized for speech recognition system. SRS is enhancing gradually [4] and has infinite applications the approach has been summarised in the research; it is a simple model [5]. Speech analysis is commonly conducted in tandem with pitch analysis, as indicated by B. S. Atal and L. R. Rabiner et al. The study described a pattern recognition method for detecting whether or not a slice is valid.

2. PROPOSED METHOD

The following features will be included in the [6] proposed system: (a) the system will continue to listen for commands, and the length of time it spends listening is adjustable to meet the needs of the user. [7](b) If the system is unable to extract information from the user's input, it will prompt the user to repeat the process until the desired number of times has been reached. (c) Depending on the needs of the user, the system can feature both male and female voices. (d) Playing music;[8] sending emails, sending SMS, searching Wikipedia, opening system-installed applications, opening anything in the web browser, and so on are all supported in the present version. (e) The system will continue to listen for commands, and the length of time it spends listening is adjustable to meet the needs of the user. (f) If the system fails.

- hardware supporting Effective
- Very fast in processing the audio and easy to use
- Variable length audio files are understood by the system.

3. System Architecture

The system architecture for a kinetic camera sensor-based sign language translation application. The system is made up of a kinetic camera sensor, [9] a computer that runs a sign language translation application, and a web server that stores the database. Aside from that, the system had two sorts of users. The first user will depict a deaf person who will stand in front of the kinetic camera sensor and conduct a sign language motion. The second user, on the other hand, was a regular individual who was using the
application. The UI of the application serves as a link between the hearing-impaired person, the kinetic camera, the database, and the normal person. Meanwhile, the dynamic time warping technique was used to compare the sequences that were recorded during the gesture.

![Image of UI and Activity diagram]

4.1. Voice Input for Translate

4.2. Activity diagram for translate text

4. Result:
This section provides a summary of our findings based on the comparison and analysis of our suggested work. We used Python, Machine Learning, and AI to implement this concept. Our primary goal is to assist users with their tasks by using voice commands. This can be accomplished in two stages. To begin, using the Speech Recognition API, take the user's audio input and convert it to an English sentence. Second, looking for the task that the user wants to do, redirecting it to the Linux server over HTTP Protocol, and showing the result in the web browser. This is the Windows Code which will run on the client side.

![Windows Code]

This is the Windows Code which will run on the client side for taking voice input of the user.

![Linux Code]

This is the Linux Code which will run on the server side for running the Linux command and displaying the output on the web.
When the Windows Code is executed the first Output which will be displayed is to start speaking. After this the user has to give the voice command.

This screen will be visible when user has given voice command and the Google Speech Recognition API has translated it into an English Phrase.

After translation the command which the user has given will be displayed on the web browser.

5. CONCLUSION
In this paper we have discussed a Voice Assistant developed using python. This assistant currently [11] works as an application based and performs basic tasks like weather updates, stream music, search Wikipedia, open desktop applications, etc. The functionality of the current system is limited to working on application based only. The upcoming updates of this assistant will have machine learning [12] incorporated in the system which will result in better suggestions with IoT to control the nearby devices similar to what Amazon’s Alexa does.

REFERENCES

