Desktop Voice Assistant

1Alusuri Venkata Sai Gagan Deep, 2Nikhita, 3Bindu Meghana, 4Giduthuri Dundi Venkata Bharath, 5Maheshwara Bhanu Yashwanth, 6S. Satyanarayana

1,2,3,4,5Student, 6Professor
Department of CSE,
Raghu Engineering College, Dakamarri, Visakhapatnam.

Abstract: For many of us, the most luxurious thing would be an assistant who always listens for your call, processes it, and performs action accordingly. This is now possible thanks to artificial intelligence assistants, aka voice assistants. Voice assistants come in somewhat small packages and can perform a variety of actions after hearing a wake word or command. They can play music, answer questions, turn on lights, place orders online, etc. Voice assistants should not be confused with virtual assistants, which are people who work remotely and can therefore handle all kinds of tasks. Rather, voice assistants are technology based. As voice assistants become more robust, their utility in both the personal and business realms will grow as well. In this project, we are developing a basic desktop voice assistant using Python that will fulfill our basic operations like opening a file, playing your music, telling you a random joke, sending an email to your contacts and many more. So, the driving force is the voice of the user that will enable us to do these operations. Along with that, we will be storing the user details and the commands into a database.

Index Terms: Voice Recognition, Artificial Intelligence, Natural Language Processing.

I. INTRODUCTION

Ever since the first speech recognition systems were brought into existence in the 1950s, they have made our lives much easier, helping us to command activities with nothing but our speech. This technology is working as a replacement of typical known methods of inputs like texting, typing, pushing buttons, and clicking. Speech Recognition nowadays has many forms; from reciting messages to you while you are driving, to book a plane ticket, to telling your device to play your favorite songs and much more. This ability of able to converse with your device is a game changer in terms of achieving the goal towards complete Artificial Intelligence in our systems.

We will be using Python with database connectivity for developing our desktop voice assistant. We will be calling the application ‘Ava’.

II. SYSTEM ANALYSIS

Existing System
An intelligent virtual assistant (IVA) or intelligent personal assistant (IPA) is a software agent that can perform tasks or services for an individual based on commands or questions. Sometimes the term "chatbot" is used to refer to virtual assistants generally or specifically accessed by online chat. In some cases, online chat programs are exclusively for entertainment purposes. Some virtual assistants are able to interpret human speech and respond via synthesized voices. Users can ask their assistants questions, control home automation devices and media playback via voice, and manage other basic tasks such as email, to-do lists, and calendars with verbal commands. A similar concept, however with differences, lays under the dialogue systems.

Proposed System
The proposed system will provide following features:

a. Opens YouTube or google in the browser.
b. Sends an email to your contacts.
c. Launches any applications on the system.
d. Tells you the current time.
e. Greetings.
f. Plays music on media player.
g. Tells you jokes.

III. SYSTEM DESIGN

The software is solely designed for desktops using Python with database connectivity. We have divided the design into the 4 major phases which will work in tandem to produce a user expected output.

The overall system design consists of following phases:

a. Data collection in the form of speech.
b. Voice analysis and conversion to text
c. Data storage and processing
d. Generating speech from the processed text output

Below we detail the process clearly using UML diagrams.
Fig 1: Use case diagram of Desktop Voice Assistant

Fig 2.1: Level 0 Context diagram
IV. IMPLEMENTATION

Let us look at the flowchart of the overall process of how a command gets executed by the application.

Implementation steps

Step1: Login to the application.
Step2: Wish the user.
Step3: Listen for user voice and recognize the command.
Step4: Compare the command with query.
Step5: If matches, execute the command, else its invalid.
Step 6: Repeat Step 3 to Step 5 until user says to quit.

V. Results

After the user registers and logs into his account, the application will start listening as soon as the ‘start’ button is clicked.

Fig 4: User Interface of Ava

Fig 5: User dashboard
VI. CONCLUSION

This Voice assistant application can be integrated with artificial intelligence techniques to achieve a smart assistant that can control IoT applications and even solve user queries using web searches. It can be designed to minimize the human efforts to interact with many other subsystems, which would otherwise have to be performed manually. By achieving this, the system will make human life comfortable. The system will have the following phases: Data collection in the form of voice; Voice analysis and conversion to text; Data storage and processing; generating speech from the processed text output. The data generated at every phase can further be used to find patterns and suggest user later. This can be a major base for artificial intelligence machines that learns and understand users.

REFERENCES


