Voice Assitant Using Artificial Intelligence

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Abstract: Artificial intelligence is crucial to day-to-day life. science of computers defines AI research as the study of intelligent agents. Today, most people, intentionally or not, have turned to some form of computerized information processing technology. Artificial Intelligence (AI) is already changing our lifestyle. A device that senses its surroundings and performs actions that maximize the likelihood of achieving a goal. The input to a database can be a choose to of users and articles, and the output is a ruthless recommendation. Input can be verbally or textually submitted by the user within the system. This paper presents a new approach to intelligent search. Overall, there are many people around the world who use assistants. This paper describes the provocation of applying virtual assistant technology. The paper also introduces the application of virtual assistants that can help open up opportunities for humanity in various fields. Voice control is an important growing feature that will change people's lives. Voice assistants are available for laptops, desktops and mobile phones. Assistant is now available on all electronic devices. A voice assistant is a software agent that can interpret human speech and respond in machine language.

Keywords: perception, artificial intelligence, Python, Chatbot.

1. Introduction

A virtual software agent called a voice assistant is used to perform personal tasks and services. The term **"chatbot"** is sometimes used to refer to virtual voice assistants. This is a new technology that is booming the technology market. Process user-based information. What do users want and what tasks do they want the wizard to perform**?** The software is fully virtualized and works virtually (S. S. Chowdhury, 2018). Human effort is required for the user to execute commands by voice. This software focuses on virtual assistants and structural elements. In this software, I tried to understand the whole virtual environment and virtual assistant interface. Let's look at an example of a smart program Or you could say out-of-the-box software that is available in English**.** For ease of use**,** the software is available in various languages, butis offered in English only. Some changes in the 'pyttsx3' language library make this software easier to use when developing applications. It can greet the user**,** ask the time, search the web browser, and open many files that exist on the computer (K. Mahmood, 2018)**.**

2. Literature Review

As mentioned above**,** virtual voice assistantsarecurrently in software form, but future setups will allow users to control the system, weather times, jokes, etc. using voice commands that are currently accessible only to one user. It comes with animage where you can search forfiles from.A system where the software is currently present**,** but after some updates it won't ask metoaccess the location (Këpuska and G. Bohouta, 2018)**.** Itjust needs the user's permission to install some files on the user'ssystem**,** and it can access the entire system and open anything withtheuser's voice instructions**.** With the help of voice commands**,** users can find out allthe data and information stored **on** their system. USP now allows emails to be sent with any email ID. By giving voice commands to users who can send messages via her SMTP protocol in the Gmail API, users don't have to type anything. Another option is to translate a message you receive from another user in Gmail. You can use the gTTs API for this. For example, this software used many other libraries. Wikipedia, date and time, speech recognition, etc (Singh, T., Sahu, A. K, 2022).

Table 1. Measurements and resources.

Construct	Measurement Specification	Sources
Information Quality	Perceived quality of information provided by VAS	Zhou (2013) and Kim et al. (2010)
System Greatness	Systems' perceived quality of VAS	Zhou (2013) and Kim et al. (2010)
Trust	Participants' confidence in using VAS	Pham and Ho (2015) and Kim et al. (2010)
Intention	Intention to use VAS of participants	Pham and Ho (2015) and Kim et al. (2008)
Personal Innovativeness	Willingness to challenge any new technology	Agarwal and Prasad (1998) and Lu et al. (2005)

3. Methodology

NLP is used by virtual assistants to translate a person's message or voice input into actionable commands. The natural language speech signals generated whenever a user request her personal assistant a question to complete a task are translated into command line instructions or digital information that can be analyzed by software. To determine the correct response, try comparing this information with the information provided by the software (K. Suresh Kumar, Sahu A.K., 2022). Machines are controlled by virtual assistants using their own commands. Use a variety of Python installation packages to build a virtual assistant, including:

3.1 Speech recognition

To transform speech to text, this system makes use of Google's online voice recognition platform. In return for speech input from a unique corpus organized on a desktop server computer within the information center, it enables users to speak and obtain text from a microphone. We temporarily store this corpus in our system before sending it to Cloud Servers for speech recognition. The voice assistant programmed then receives the same text and sends it to it.

3.2 API calls

The function of an application programming interface (API), also known as a software middleman, is to enable communication between two applications. In those other phrases, an API serves as a messenger between the user and the provider, relaying requests and relaying responses.

3.3 Content Extraction

Machine-readable documents that are unstructured or semi-structured can extract relevant structured information using context extraction. Discourse analysis (NLP) is used in this task to process text written in human language. Content extraction includes tasks like automatically annotating images and videos and extracting content from them.

3.4 System Calls

System calls are made programmatically by computer programs, which ask the operating system kernel to provide services. For instance, accessing hard disks, generating and trying to run new procedures, and interacting with scheduling. It offers a crucial interface between operating system processes and processes.

3.5 Google-Text-to-Speech

Basically, Use of Text-To-Speech to turn user-supplied text into speech. In these other sayings, the TTS engine transforms the text from its written form into a morpheme is a representation, then reconstituted as waveforms to produce tones. TTS has made significant progress, and various languages are now accessible from outside vendors (Sahu, A. K., & Kumar, A., 2019)..

4. System Architecture


```
from datetime import date, datetime    #for real time date and time
import pyttsx3                          #for text to speech conversion
import datetime                         #for real time date and time
import speech_recognition as sr
import wikipedia                        #for search anything on wikipedia
import webbrowser
import os
import smtplib                          #libabry for sending any mail
from AppOpener import run               #library for opening any app
```

Fig1: Program Library

4.2 Speech Recognition

Speech recognition is the process by which computers comprehend what you say. In our project, we develop command-line software using Python and the Google Speech API. To understand voice commands, the Pyttsx3 Python parcel must be installed. The pip install Pyttsx3 command installs Pyttsx3.

4.3 GTTS

With its text-to-speech software, Google transforms spoken question commands into text. Answers from search functions that you write to get answers to questions and commands are converted to phonetic form using GTTS Working with the Search Translates API is this package.

4.4 Datetime

The time and date are displayed using packets. Python is already included with this datetime module.

4.5 Wikipedia

We are all aware that Wikipedia, along with GeeksforGeeks and other sources, is a fantastic and extensive source of knowledge. In order to conduct searches on Wikipedia and to obtain additional information, I used the Wiki page module in my project. To install this Wikipedia module, run pip install Wikipedia.

4.6 Operating System

The Python OS module provides features for communicating using the OS. one of the typical Python utility modules is the operating system. The ability to use This module offers operating system-dependent functions.

4.7 Smtplib

A Python library called Simple Mail Transfer Protocol is used to send emails to use the Simple Mail Transfer Protocol. The built-in Python module is smtplib. Not necessary to install. Ignore all the SMTP complexities. It offers a Simple Mail Transfer Protocol (SMTP) client implementation (Sahu A. K & Kumar, A.,2016).

4.8 Web browser

Do a web search. This module is built into Python.

4.9 Python

Python is a powerful interpreter for a general-purpose programming language. Python has a dynamic data type and a memory management system. It supports a range of programming paradigms, such as imperative, functional, formal, and object-oriented, and has a sizable and comprehensive standard library.

Python was designed to be a highly extensible programming language, rather than cramming everything into its core.

5. Virtual assistant recommended behavior:

This project requires the user to press the Start button in each IDE to run or download the software. After pressing the start button, your personal assistant can receive commands (voice commands) to use as input. Second, the user's search information depends on the user's personal request. If this request is understood by the assistant, it will respond to this request. Otherwise, reissue the command and return an error. This allows users to search for queries and information. This helps us index personal data recently saved by our users into our system (Sahu A. K. & Kumar, A., 2017). This is far more beneficial and useful than a library. Communication between users and assistants is possible, so customers can be notified of the status of a particular search. It is easy to use even if the user likes listening to music to make things easier and is used to performing various kinds of tasks without internet.
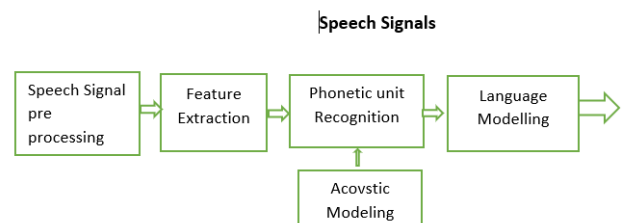

Fig 2: Module of input processing

5.1 Personal Assistant Use Cases:

Use Case 1: Enter your identifying data.
Use Case 2: Using Audio Input Request a movie.
Use Case 3: Using Speech Input Alert Queries.
Use Case 4: Find other queries using voice commands.

5.2. Required Components

- Python
- Device
- Embedded Libraries.
- Microphone
- Loudspeaker

6. Future Applications

This project helps the visually impaired and the physically challenged. Instead, a fragmented market will emerge. Depending on the hardware you buy, you'll be on the market with standard AI providers. This creates tension between consumers and third parties to remove solutions from existing solutions.

7. Features and Benefits

- Users can find lost files in his girlfriend PC.
- Voice commands can be used to search any website.
- Find the IP address of the system, set alarms, and access local weather information.
- User can add other commands.
- Economical and reusable effectiveness for user.
- Easily find lost files on your PC.
- Reduce the amount of typing.

8. Application

- Database connection.

Superscripts are used to separately number footnotes. Put the actual addendum at the end of the column where it was previously located.

9. Discussion

The purpose of this study is to comprehend user quality preferences and how they affect the acknowledgement of AI-based technologies. We find that the interaction quality is a significant factor when using VAS as an instance of an AI-based system. The develop better hypothesis is validated at the significance level of 0.05 as seen in Figure 2. Furthermore, at the level of significance of 0.05, the positive relationship among trust and innovative behaviour and use intent was confirmed, giving the model an explanatory power of 54.9%. It is also intriguing that, despite previous studies (Sahu A. K., Kumar A., & Gupta T., 2015); Chen and Chen (2009)) that supported the relationship among quality of information and system quality, it has not been conclusively proven to exist.Herzberg's motivational hygiene theory can explain this outcome of AI-based techniques (F. Torres-Cruz, A. K. Sahu, 2022). Given this theory and the significance of trust satisfaction as examined by Prerequisites and Johnson (1999), it is clear that high-quality information and structures are necessary to prevent trust erosion. We think. These two elements should be at a level that is acceptable and consistent with customer expectation because they are hygiene factors. On the contrary hand, VAS technology's interaction quality promotes added value and confidence.

10. Result

Getting a virtual assistant is quick. A software program is software that carries out tasks for the client and comprehends commands. NLP is used by the virtual assistant to translate the user's text or voice input into usable commands. A virtual assistant can assist you can control the machine with your own commands, just like a laptop or PC. This is a quick process and can save you time. Virtual assistants operate at fixed times, so they are always available and can quickly Adapt to the needs that change. Depending on their workload, a virtual assistant is accessible to you and can assist others.
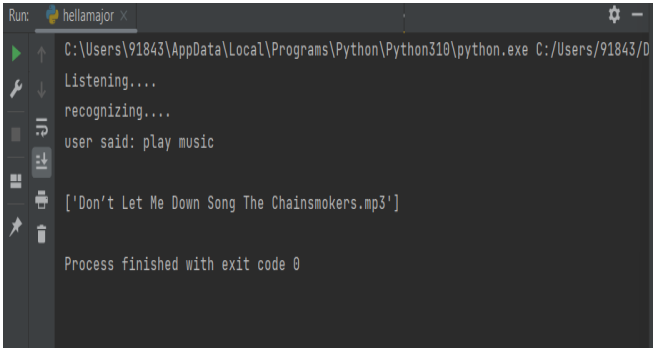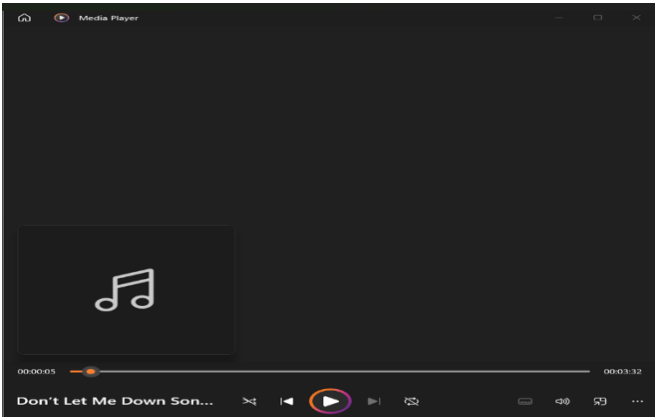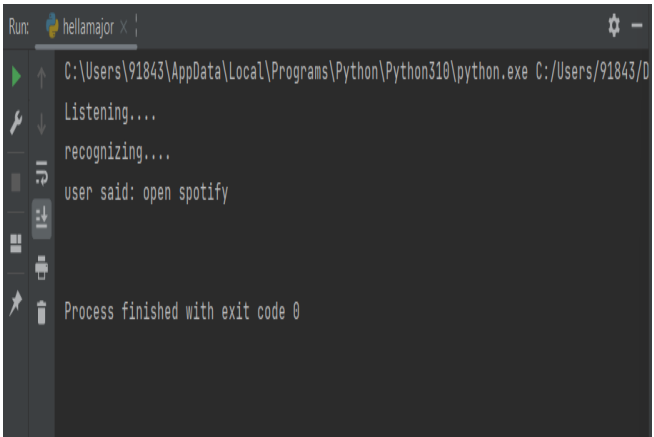

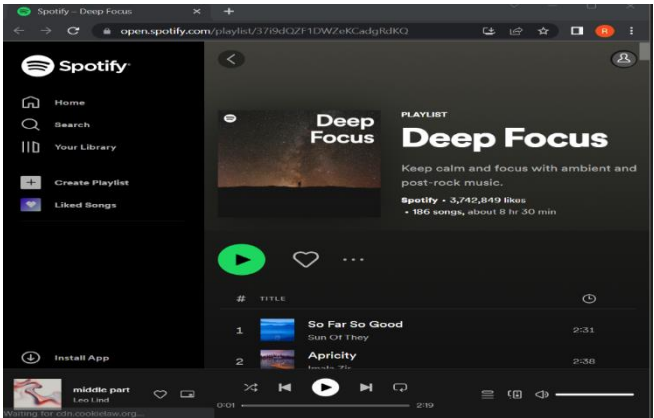Fig 3: Take input command 1

Fig 4: Output 1

Fig 5: Input 2

Fig 6: Output 2

11. Conclusion

This document explains how to use Python to develop your own virtual assistant for Windows. People's lives are made easier by virtual assistants. With a virtual assistant, you have the freedom to only use the services you require. We create virtual assistants for all Windows versions using Python, just like Alexa, Cortana, Siri, and Google Assistant. For this project, we make use of artificial intelligence technology. Using a digital personal assistant to manage or organise your schedule is a good idea. Additionally, virtual assistants are more portable, trustable, and accessible than actual personal assistants. Our virtual assistant provides advice, gives directions, and gathers more information about you. You can count on this gadget to last. We investigated novel phenomena that might help to better understand this same adoption of AI-based innovations while studying the use of these technologies. We investigated novel phenomena that might help to better understand the implementation of AI-based technologies while studying the usage of these technologies. Our research revealed that the most crucial quality factor for fostering user trust-and consequently, users' intentions to use VAS is the caliber of interactions. We combined several theoretical stances in this study, including ISSM, SET, and HCI, and discovered that dialogue quality plays a significant role in embracing new technologies. The findings of this study will aid managers in creating better marketing and promotional strategies to create higher-quality products and services and draw in more customers.

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