

DEVELOPING A PRE-TRAINED VOICE BOT

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Abstract

In this modern era, day to day life became smarter and interlinked with technology. We already know some voice assistance like google, Siri. etc. Now in our voice assistance system, it can act as a basic medical prescriber, daily schedule reminder, note writer, calculator and a search tool. This project works on voice input and give output through voice and displays the text on the screen. The main agenda of our voice assistance makes people smart and give instant and computed results. The voice assistance takes the voice input through our microphone (Bluetooth and wired microphone) and it converts our voice into computer understandable language gives the required solutions and answers which are asked by the user. This assistance connects with the world wide web to provide results that the user has questioned. Natural Language Processing algorithm helps computer machines to engage in communication using natural human language in many forms.

An AI voice assistant is a digital assistant that uses artificial intelligence to understand and respond to voice commands and questions from users. This technology has gained widespread adoption in recent years due to its convenience, speed, and accuracy. AI voice assistants are capable of performing a wide range of tasks, including setting reminders, playing music, making phone calls, sending messages, providing weather updates, and answering general knowledge questions. They have become an integral part of daily life for many individuals and are

expected to continue to improve in functionality and user experience in the coming years.

An intelligent virtual assistant (IVA) or intelligent personal assistant (IPA) may be a software agent which will perform tasks or services for a private supported commands or questions. Sometimes the term "chatbot" is employed to ask virtual assistants generally or specifically accessed by online chat. In some cases, online chat programs are exclusively for entertainment purposes. Some virtual assistants are ready 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 like email, to do lists, and calendars with verbal commands

Key Terms: Personal Assistants; chat bots; conversational interfaces; Speech Recognition; Text-to-Speech

Introduction

Gone are the days when humans depended on other humans for help or services. The digitalization of the world made sure that humans no need to contact anyone else to seek help, they could depend on a far more efficient and reliable device which can take care of their everyday needs. The computers, mobiles, laptops, etc., became a part of us and our daily life, it could carry out simple calculations to complex programs to reduce monotonous work and waste of manpower. Virtual Personal Assistant has almost become a basic necessity in all electronic devices so as to execute the required problems easily. More than just being a bot, VPA can make life easier for the user in various ways. Speech recognition is one of the relatively new integration into the VPA. But, though its moderately efficient, it is not very helpful and are not used by the user due to its high amount of error. Though the error percentage of the upcoming VPAs is around 5 percent, it still is not quite up to the mark to where it becomes a basic part of the user life. The projects aim is to build a VPA with speech recognition which has a very minimal error percentage. Voice recognition is a complex process using advanced concepts like neural networks and machine learning. The auditory input is processed and a neural network with vectors for each letter and syllable is created. This is called the data set. When a person

speaks the device compares it to this vector and the different syllables are pulled out with which it has the highest correspondence.

Literature Survey

A computer primarily based approach for performing a command via a voice consumer interface on a subset of objects. The subset is selected from a fixed of items, each having an object type at least one taggable field is associated with the object type and has a corresponding value. The set of objects is saved in the laptop memory. An utterance is acquired from the person and consists of a command, an object type choice, a tag-gable field selection, and a price for the taggable discipline. Responsive to the utterance, at least one item is retrieved from the set of gadgets, the item of the sort selected through the user and having a price within the taggable area selection that matches the taggable field fee obtained from the user the command is done on the item. The object includes textual content that's converted to voice output. They envisioned that someday computers will recognize natural language and count on what we need, whilst and where we need it, and proactively whole responsibilities on our behalf

The Most well known utilization of iPhone is "SIRI" which causes the end client to impart end client versatile with voice and it additionally reacts to the voice charges of the client. It is named as Personal Assistant with Voice Recognition Intelligence, which takes the client contribution to type of voice or content and process it and returns the yield in different structures like activity to be performed or the item is directed to the end client. Furthermore, this proposed framework can change the method for communications between end client and the cell phones. Open Data is currently gathering consideration for imaginative administration creation, predominantly in the zone of government, bio science, and shrewd venture. Be that as it may, to advance its application more for purchaser administrations, a web crawler for Open Data to realize what sort of information is there would be of assistance

This paper presents a usability of four Virtual assistant voice-based and contextual text (Google assistant, Cortana, Siri, Alexa) . Cortana can likewise read your messages, track your area, watch your perusing history, check your contact list, watch out for your date-book, and set up this information together to propose

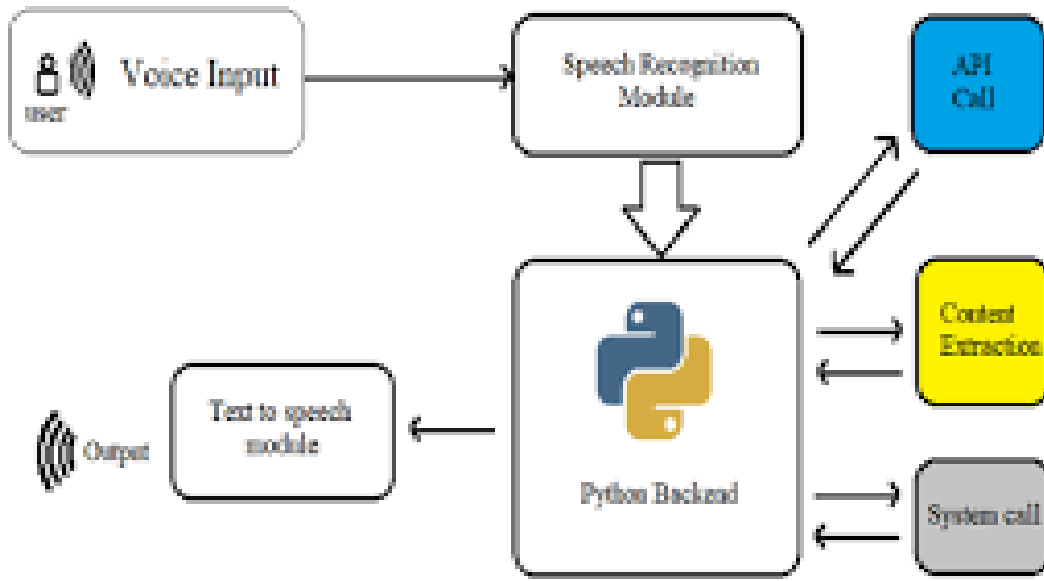
valuable data, on the off chance that you enable it. You can likewise type your inquiries or solicitations, in the event that you want to not stand up uproarious. It is only desktop based virtual assistant. Siri: Siri has been an integral part of iOS since the dispatch of iOS 5 of every 2011. It began with the nuts and bolts, for example, climate and informing, yet has extended significantly from that point forward to help all the more outsider mix with MacOS. While Siri's jokes are unbelievable, the virtual aide is getting more able consistently. Presently, you can request that it call individuals, send messages, plan gatherings, dispatch applications and recreations, and play music, answer questions, set updates, and give climate conjectures. Google Assistant: Google Assistant (which has consolidated capacities from the more seasoned Google now, as now is being eliminated) is unique in relation to Cortana and Siri.

System Design

Designing an AI voice assistant involves several components, including natural language processing, speech recognition, knowledge representation, and machine learning algorithms. Here is a high-level system design for an AI voice assistant:

Speech Recognition: The first component of an AI voice assistant is the speech recognition module. This module listens to the user's voice and converts it into text using automatic speech recognition (ASR) techniques. This involves breaking down the user's spoken words into phonemes, or distinct sound units, and matching those phonemes against a large set of pre-recorded speech samples to determine the best transcription.

Natural Language Processing: The next component is the natural language processing (NLP) module. This module takes the user's text input and analyzes it to determine the user's intent. NLP algorithms use techniques such as entity recognition and sentiment analysis to extract relevant information from the text and determine the user's needs.



Knowledge Representation: The knowledge representation module is responsible for storing and managing the information that the AI voice assistant needs to provide responses. This includes a database of information such as user preferences, contact information, and frequently asked questions, as well as access to external sources of information such as news articles and weather forecasts.

Machine Learning: The machine learning module is responsible for continuously improving the AI voice assistant's performance. This involves training algorithms on large datasets of user interactions to improve the accuracy of speech recognition, NLP, and other components.

Response Generation: The final component is the response generation module. This module takes the user's intent and generates an appropriate response. This could be a text response, a spoken response using text-to-speech technology, or an action such as setting a reminder or sending a message.

Overall, an effective AI voice assistant requires a combination of sophisticated algorithms and high-quality data to provide accurate and useful responses to user requests

IMPLEMENTATION

```
def speak(audio):
```

```
    engine.say(audio)
```

```
    engine.runAndWait()
```

```
def wishMe():
```

```
    hour = int(datetime.datetime.now().hour)
```

```
    if hour >= 0 and hour < 12:
```

```
        speak("Good Morning Sir !")
```

```
    elif hour >= 12 and hour < 18:
```

```
        speak("Good Afternoon Sir !")
```

```
    else:
```

```
        speak("Good Evening Sir !")
```

```
    assname = ("Jarvis 1 point o")
```

```
    speak("I am your Assistant")
```

```
    speak(assname)
```

```
def username():  
    speak("What should i call you sir")  
    uname = takeCommand()  
    speak("Welcome Mister")  
    speak(uname)  
    columns = shutil.get_terminal_size().columns  
  
    print("#####".center(columns))  
    print("Welcome Mr.", uname.center(columns))  
    print("#####".center(columns))  
  
    speak("How can i Help you, Sir")  
  
def takeCommand():  
  
    r = sr.Recognizer()  
  
    with sr.Microphone() as source:  
  
        print("Listening...")  
        r.pause_threshold = 1  
        audio = r.listen(source)
```

```
try:
```

```
    print("Recognizing...")
```

```
    query = r.recognize_google(audio, language='en-in')
```

```
    print(f"User said: {query}\n")
```

```
except Exception as e:
```

```
    print(e)
```

```
    print("Unable to Recognize your voice.")
```

```
    return "None"
```

```
return query
```

```
def sendEmail(to, content):
```

```
    server = smtplib.SMTP('smtp.gmail.com', 587)
```

```
    server.ehlo()
```

```
    server.starttls()
```

```
    # Enable low security in gmail
```

```
    server.login('your email id', 'your email password')
```

```
    server.sendmail('your email id', to, content)
```

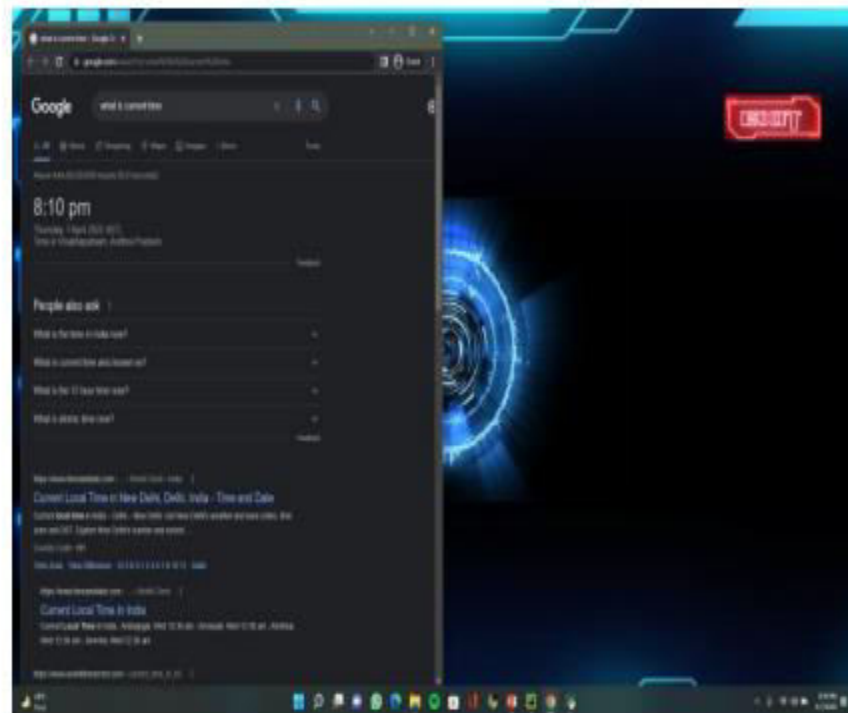
```
    server.close()
```

SNAPSHOT

Interface



Input: What is the current time



Input: Play songs



CONCLUSION

In conclusion, AI voice assistants have revolutionized the way people interact with technology by providing a more natural and intuitive user experience. With the advancements in natural language processing, speech recognition, and machine learning, AI voice assistants are becoming increasingly accurate and sophisticated, capable of performing a wide range of tasks and providing personalized assistance to users.

These assistants have become an integral part of daily life for many people, and their popularity is expected to continue to grow in the coming years. As the technology continues to evolve, AI voice assistants have the potential to become even more powerful, offering new features and capabilities that make them an even more valuable asset to users. Overall, AI voice assistants represent a major milestone in the development of intelligent systems and are poised to have a significant impact on the way people interact with technology in the future.

FUTURE ENHANCEMENTS

This project improved Natural Language Processing (NLP): One of the biggest areas for improvement in AI voice assistants is their ability to understand and

interpret human language. As NLP technology advances, AI voice assistants will become more accurate and efficient at understanding and responding to user requests. Enhanced Personalization: As AI voice assistants become more advanced, they will be able to personalize their responses based on individual user preferences and behaviors. This could include tailoring responses to specific users, recommending products or services based on their past behavior, or even anticipating their needs before they ask. This project improved Multimodal Communication: AI voice assistants can be enhanced to communicate using multiple modalities, including text, images, and video, in addition to voice. This would allow users to receive more detailed information or even interact with the AI voice assistant through a variety of channels.

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