



INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Ezee Bot: A Voicebased chatbot for Automation

¹Dr. Sharda Chhabria, ²Vaibhav Despande, ¹Bhushan Wasamwar,

¹Chinmay Mishra, ¹Sahil Borikar, ¹Yash Dorshetwar

¹Artificial Intelligence, G H Rasoni Institute of Engineering and Technology, Nagpur, India,

²TechnoBase IT Solutions Pvt. Ltd. Nagpur, India

Abstract: Artificial Intelligence (AI) has made tremendous development in recent years, and its potential is expanding by the day. Natural Language Processing is an example of an AI application (NLP). Voice assistants absorb AI through cloud computing and can speak with users in natural language that humans can understand. Voice assistants are simple to operate. In today's world, there are millions of devices that incorporate them. Smart speakers (Alexa, SIRI) are the most prevalent devices with voice assistants, and they have only recently begun to be employed in schools and institutions. The goal of this article is to understand how voice assistants and smart speakers are used in regular life, as well as how a bot can assist us in Hustle Free.

Index Terms - Artificial Intelligence, Natural Language Processing, Smart speakers

I. INTRODUCTION

A voice-based chat bot that assists consumers in shopping on any automation with simple steps. A voice-based chatbot is an interaction model in which a human communicates with a machine and accomplishes a set of activities using voice, at least in part. This system is primarily reliant on voice biometrics for selecting the set of tasks that the user wants to complete using voice as the primary interaction mode. Users can do this task through conversation even if they are busy and unable to pay full attention. This bot is superior because it is simple to use, saves the user time and effort, allows for multitasking, and is simply easier than opening a browser, typing, waiting for search results, and then reading them.

Voice assistants can do a variety of things, including:

- Respond to user-submitted queries.
- Stream music from services such as Spotify, Wynn, and others.
- As needed, set timers or alarms.
- Take part in a range of games.
- Make calls, answer calls, or send text messages.
- Make any required purchases.
- Provide weather forecasting data.
- Manage other smart devices in our house or environment

II. METHODOLOGY

The overall suggested system design is comprised of the following phases:

1. Data collection by voice.
2. Voice recognition and text conversion
3. Data storage and processing
4. Generating output from processed text output.

The data is collected in the first step in the form of speech and saved as an input for the following phase's processing. The input speech is continually processed by natural language understanding and turned to text in the second phase. The transformed text is then examined and processed using Python Script to determine the appropriate response to the command, this is the dialogue state. The recommendation step then begins. Finally, once the response has been recognised, output from simple text to speech conversion is generated.

III. LITERATURE REVIEW

The voice-based chatbot let the user interact with the automation bot via voice commands and understands the user's voice. On the other hand, this application heavily depends on web connectivity. We created a performance-effective virtual assistant for automation using concepts from the Internet of Things, speech recognition, natural language processing, and artificial intelligence.

The device reacts automatically to voice commands from users who provide voice input. In this paper, we explored the use of a

virtual assistant to carry out duties, notably automation and recommendation, that would otherwise require the use of a third party. It makes use of a Text to Speech Engine and a Speech to Text Engine that both use speakers for output and a microphone for input. When the voice is recognised by the system, the recognised word or words are compared to the database's keywords, and if they match, a new compilation and execution of the programme is performed. This system will be simple to operate and will require less hardware and human labour.

IV. SYSTEM

A. Functional Requirements

- 1) Computer programs that mimic human speech in a natural way using artificial intelligence (AI) techniques such as natural language processing (NLP) and speech. May contain text or spoken language analysis.
- 2) Well-designed user interface and experience UI.
- 3) Addition to comprehension and interaction within a conversation, voice-based chatbot software must have his NLU (Natural Language Understanding) capabilities to analyze the context of the conversation .

B. Non-Functional Requirements

Voice-based chatbots must communicate seamlessly across multiple channels, including.

V. IMPLEMENTATION

A. Working of the Project

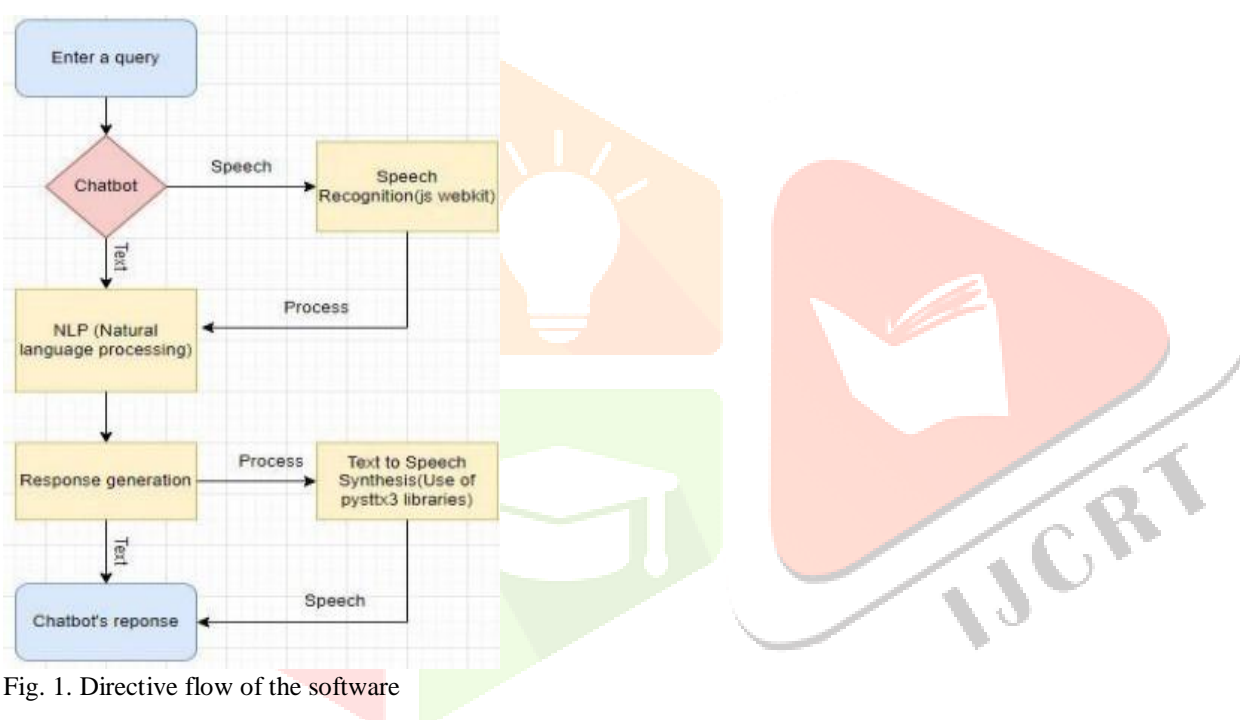


Fig. 1. Directive flow of the software

1) Speech Recognition

First, the computer must record voice communication and convert it to speech. This is speech-to-text. This will be a major step in NLU. Most speech recognition systems today are supported models such as HMMs. These are applied mathematical models that convert speech to text by performing mathematical calculations to solve the above. HMMs do this by noticing your speech, breaking it up into small chunks (usually 10-20 ms), examining them in recorded speech, and extracting the sounds you mention in each chunk of speech.

2) Natural Language Understanding (NLU)

The next most difficult step in NLU is actually understanding half of it. First, the computer has to know what each word is. I'm trying to sense whether it's a noun or a verb, whether it's past tense or present tense, and so on. This is sometimes called part-of-speech (POS) tagging. NLP systems also have a lexicon (vocabulary) and a set of synchronized language rules encoded into the system. The trickiest part of computer science is knowledge. At the end of the method, the computer should understand what the above means.

3) Natural Language Generation (NLG)

NLG is much less complicated. NLG converts computer speech to text, but you can take it a step further by using his 3.8.1 speech recognition engine in Python to convert that text to speech using text-to-speech. increase. It takes about 5-7 seconds to bet on the voice service to recognize the user's voice. Google Speech Recognition, Google Cloud Speech API, APIs supported by the SpeechRecognition library. It uses the SpeechRecognition library to detect noise and tends to throw UnknownValueError and RequestError when the speech service is unavailable. Next, supported frequently asked questions (FAQs) and predefined answers were provided. All data needed online is retrieved from the WebBrowser library by adding a question to the given URL.

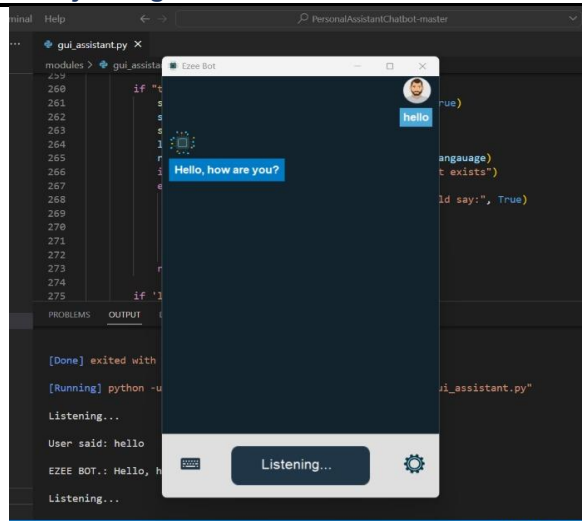


Fig. 2. Displaying voicebased chatbot on website.

The last stage is to convert our text back into speech. We have made use of the pyttsx3 which is a text-to-speech conversion library in Python. Unlike alternative libraries, it works offline, and is compatible with both Python 2 and Voice output is generated within 500-1000 milliseconds. Pyttsx3 also helped us to customize the properties of volume range and speaking rate.

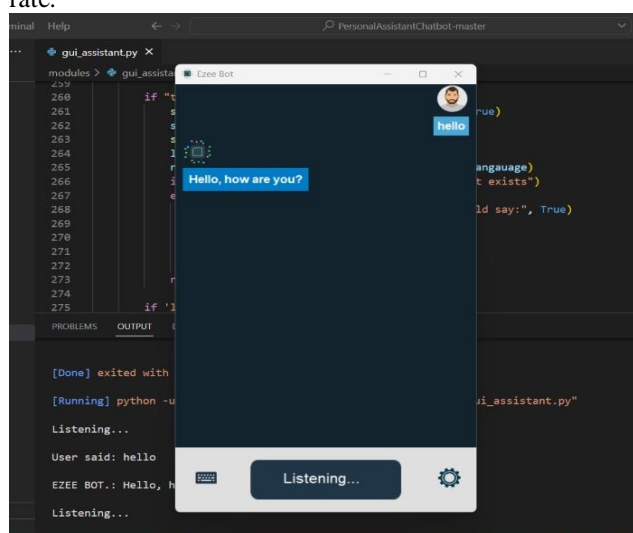


Fig. 3. Displaying the output generated by the voicebased chatbot.

A. DISCUSSION

In our survey we found a huge gap between voicebased chatbots and users. To improve the relationship between humans and bots we introduce voicebased chat bots. Today the focus is on convenience, less time and effort. We aren't learning how to talk to computers anymore. We are teaching computers to talk to. The ongoing hustle for Automation is actually tough for many of us and elderly. We prefer going shopping in a mall directly rather than buying the same product online. To make an ease in this, we created this bot which will not only help you buy your desired product but also recommend things related to your search.

VI. CONCLUSION

Due to the large-scale development of various talents, AI can help students by providing individualised instruction. The questioner's name should be mentioned in the response, and smart speakers should respond to questions appropriately. They are equipped with a content discovery engine that is better suited to finding the correct responses from a variety of different sources and can respond to frequent questions. It can be designed to lessen the amount of time it takes humans to manually interface with a variety of different subsystems. The system will improve the quality of human life by doing this. This system was created largely to make life easier for people. Automation demands an inordinate level of focus and effort. We created a system that allows him to place orders whenever you want and have items delivered right to your door using only voice commands.

In light of the literature review and analysis of the current system, we have come to the conclusion that the proposed system would not only make it easier for other systems and modules to integrate with the world of automation, but will also make suggestions for doing so. Although there is still much to be done in the field of automation and AI, the device's capabilities may help in the creation of a new generation of voice-controlled devices that will usher in this new era.

VII. ACKNOWLEDGMENT

The authors wish to thank TBS Solution Pvt. Ltd. for providing dataset used for this study and G. H. Rasoni Institute of Engineering and Technology, Nagpur, for providing a platform to pursue this project.

REFERENCES

- [1] Amrita S. Tulshan and Sudhir Namdeorao Dhage. "Survey on Virtual Assistant: Google Assistant, Siri, Cortana, Alexa". 4th International Symposium SIRS 2018, Bangalore, India. September 19–22, 2018
- [2] George TERZOPOULOS, Maya SATRATZEMI. "Voice Assistants and Smart Speakers in Everyday Life and in Education". Informatics in Education, 2020, Vol. 19, No. 3, 473–490
- [3] A N Bhoomika Chowdary , Lavanya M , Darshan S , Deepthi Andani , Mrs. Jayasudha BSK. "A Literature Survey on Voice Assistance". International Journal for Research in Applied Science & Engineering Technology (IJRASET).2019
- [4] <https://www.geeksforgeeks.org/natural-language-processing-overview/>
- [5] Meet Popat, Aayush Doshi, Yashraj Rai, Deep Vakharia. "Alexis : A Voicebased voicebased chatbot using Natural Language Processing". 04, April- 2022.Vol. 11.

