GENESIS-THE DIGITAL ASSISTANT (PYTHON)

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Abstract- **Genesis is a virtual assistant, it is an application program that understands voice commands, and completes tasks for the user. In this Modern World, the technologies are introduced at a very fast rate and now The evolution in field of computer and machine has given us different opportunity to make our life more visionary and comfortable, Thus the development of a Desktop assistant to powers of fast computation and remarkable understanding towards the needs of the user encourages the user to put their ideas into their lifestyle and treat the virtual assistant as a better companion in form of HUMAN LANGUAGE. It can be achieved through AI-technologies which contains both the hardware and the software to develop a virtual assistant. The Hardware device(microphone) captures the audio request and provides the response by processing using its scripted skills and provides the needed response to the user in the suitable Human Voice.**

Keywords -
•**Speech Recognition (inside Natural Language Processing),**
• **Web searches,**
• **Wikipedia,**
• **Requests.**

I. INTRODUCTION

In the present world, everything is moving towards automation, may it be your home-appliances or car. There is always seen a significant change or rather an advancement in technology over the last few years. Believe it or not but in today's world you can interact with your machine and even machines respond like humans.

Virtual or Desktop assistants are in trend today because everyone wants that their work should be done efficiently with minimum stress and should have good quality. So the virtual assistant is gaining

an exponential popularity. [1]

Now the question arrives:-What is interacting with a machine?
It means giving the machine some input, but what if the input is not in the conventional way of typing instead it can be your voice. The idea of making an interaction with the assistance by giving it command and wanting that the assistant will interact with you like your companion?

What if the assistant isn't only showing you the best results but also by giving you a better alternative for the same request along with the results that you needed?

To make the assistant understand the machine using speech to text libraries like speech_Recognition for taking the audio voice as input and converting it into the string format. Similarly, we need another library which can easily convert the text into audio like pyttsx3.

Today Virtual Assistant companies like Google, Amazon, and Apple are trying to develop a more advanced version of their system and these

companies are getting success in this as well.

Understanding the importance of the assistants we have decided to make a Virtual Assistant system that can be used on Desktop and you can command it to perform that task for you just by giving it the commands.

Now the major question that comes to everybody's mind is that:- Why do we need a voice activated system? The answer is simple, because in this way his own voice becomes the best input for the assistant than a conventional typing method. Today every user likes to interact with their machines using voice commands for gadgets for example- smartphones, smart TV's and cars navigation-systems.

In Genesis (Digital Assistant) we have integrated many features which are unique and no other popular assistant can have such features. Some the major and unique features which makes genesis to become one of the best assistant available in the market as of now are:

1. The ability to read the pdf and document files which can help students in gaining various theoritical knowledge, also it is very good for reducing the usage of papers because this feature will promote the use of digital technology instead of using hard copies to read and learn.

2. Another major feature which makes genesis unique in the market is its ability the read the world's top 10 news in just a single voice command. Its a unique feature in Genesis because all the other assistants available in the market will be giving you the links of some popular news channels or the links of a particular news in the form of web browser page. But in Genesis, we will directly provide the top 10 news of the world and then if the user is interested in any particular news then he/she will continue to get more knowledge about that news.

3. Genesis is unique in terms of its uniqueness because as a desktop assistant, its response time is very less as compared to the Cortana. Genesis process the request a way more faster than cortana because Genesis is developed on the latest technology and best programming language (PYTHON).

4. The another most amazing, useful and unique feature of the Genesis is the ability to perform calculations not only addition, substraction, multipication, division but also can perform calculations like integration, differentiation etc.

5. It has the ability to search the results on google, play videos directly on YouTube. All these features makes it more advanced and entertaining in terms of adaptability.

6. Another major feature of the Genesis is its knowledge base, Genesis has a very vast knowledge base which can give answers to any type of technical and social queries. But still it has no emotions.

These are the best features to have a leading or one of the best virtual assistant should probably have.

II. RELATED WORK

In the current situation, all the advanced AI Assistants or Digital Assistant systems on android, ios or windows platforms are developed. This paper helps to demonstrate how virtual assistants are attacked by third parties.[3] In this the virtual assistant is improvised with Face Recognition techniques. The face recognition system for virtual assistants using Machine learning algorithms helps to detect and recognize faces.[6] After successfully recognizing the faces, the users are allowed to access the virtual assistant. If the person is a third party then it will say you are not allowed to access or you are not unauthenticated. However, the unauthenticated person can get access to virtual assistance by administering.[13]

The data can be illegally accessed through attacks on voice assistants which provides the attacker access to the system. Attackers then can control Assistants to perform unapproved commands and then collect any information available in the system. So there is an increased need for security measures in these types of systems.[2]

The major 3 developments in the virtual assistants are:

1. Siri (by Apple) is the first AI virtual assistant to be available in a smartphone when the iPhone 4s launched on Oct-2011. Siri then moves in the smart speaker's market with the launch of HomePod in Feb-2018.
2. Google Assistant (which is before named as Google Now) is available on the Android smartphones. [8] It is working on iOS devices also but with the limited functions. [4]
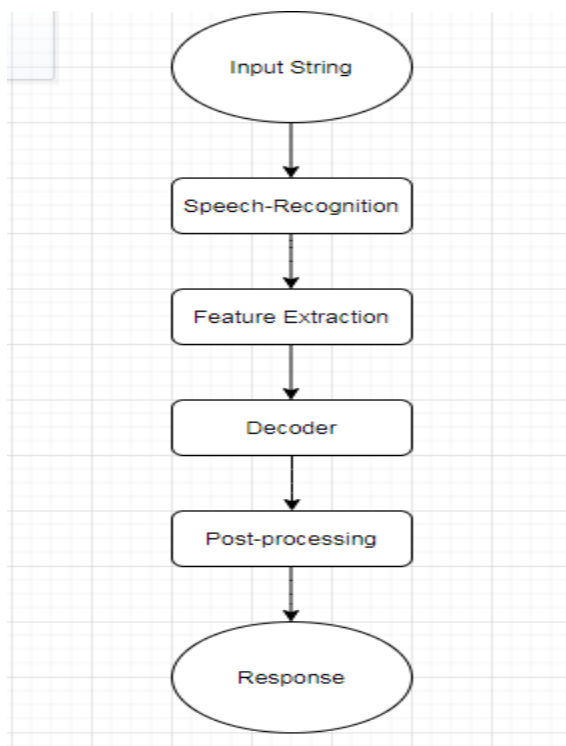
3. Amazon Echo is one of the good example of assistants available in the market. [10]

4. Then the world of smart speakers came, and Alexa (by Amazon) gains the popularty to become the first advanced House Assistant and became the part of household conversations. [5]

III. PROPOSED SYSTEM

The Genesis is an advanced Desktop AI based virtual Assistant. Genesis is developed using the latest technology available in the market i.e. Python which makes the Genesis a way more effective and efficient is getting the results of our queries. It uses many artificial intelligent libraries like pyttsx3,

speech_recognition, webbrowser, os etc.[9] The Genesis uses the speech to text library to convert the users voice into string and then after finding the solution Genesis will give the response in an audio format which uses text to speeh library. Hence in this way the AI system works to get the best possible results.[7]

The process to get the appropriate output from GENESIS as follows:

- Firstly, specify the requirements to the speech recognition model when Genesis asks "**HOW CAN I HELP U Sir!**".
- With the process of Speech Recognition, Genesis takes the input from the user and convert it into string, Like "**Who is MS Dhoni ?**".
- In Background, Genesis converts the string into small letters to have a perfect match of the string on the various platforms with the input taken from the user, Like "**who is ms dhoni ?**".
- After converting the string in small letters the condition matches, then Genesis will produce the result to the user in the desired manner that was asked, else Genesis will ask again for new input from the user to make a perfect match.
- When the condition matches then a specific block is executed to provide the required output to the user.
- The actions taken by Genesis are always according to the input string given by the user.
- When the action completes then Genesis will ask again for any further request that needs to be completed for the user's benefit.

In our Desktop Assistant, we add some features like:

- **Stream music:** Ask Genesis to play a song and it will stream it from the local drive.
- **Read the headlines:** Genesis can read out headlines from the news outlets of your choice on the topics you care about.
- **Set timers and scripting:** You can tell Genesis to wake you up every weekday morning at 7 A.M. and it will do that.
- **Answer your questions:** Genesis can search for basic facts, solve mathematical problems, or even tell you a joke.
- **Complex Arithmetic Calculation:** Genesis can also perform calculations (by asking: calculate integration of (x dx), and also addition and subtraction).
- **Updates with News Feed**: Genesis can display the current top 10 news of the day. (by simply saying top news).
- **Faster Search Ability**: Genesis can search any content on google.
- **Propagate to YouTube on a command:** Genesis can search YouTube videos.
- **PDF to Audio Convertor:** Genesis can import the PDF file from the storage and

convert the data in the file into Audio for the user.

- **Mirror for the User:** Genesis can ask for a mirror (basically it is a camera feature that only allows the user to see his/her reflection like a mirror).

Soon, the virtual assistants will be built with more advanced and challenging computing technologies, which will allow a virtual assistant to understand and carry out multi-step requests and even perform more complex tasks, such as making a plane/train/movie ticket booking on just a single command.[12]

IV. CONCLUSION

Genesis is an application program that understands human language commands and then complete the user's request. The Digital Assistants are evolving day-by-day to get more functionalities and give more value to the users. As technologies like speech recognition improves, the assistant's performance to complete the requests also improves.[11]

Questions Implemented on various virtual assistants-
(The Genesis will work more effectively and way more efficient if servers were used instead of the local device. But it performs extremely well even on the self-devices too.)

Q1. Where can I see the movie Independence Day?
Siri- 4.3 seconds
Cortana- 4.5 seconds
Google Now- 3.5 seconds
Genesis- 5 seconds

Best Answer: Google Now

Q2. Who is Sachin Tendulkar?
Siri- 1.5 seconds
Cortana- 5 seconds
Google Now- 2 seconds
Genesis- 4 seconds

Best Answer: Siri (but in desktop category Genesis is fast).

Q3. Show today's news headlines?
Siri- 3.5 seconds.
Cortana- 5.5 seconds.
Google Now- 3 seconds.
Genesis- 4 seconds.

Best Answer: Genesis (Genesis is best because it tells us the headlines while in others they only provide the link for news).

Q4. Read the pdf file for me my assistant?
Siri- wrong output
Cortana- wrong output
Google Now- wrong output
Genesis- 4 seconds

Best Answer: Genesis (Not even a single assistance provide pdf reading feature instead of Genesis)

V. REFERENCES

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