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DIGITAL WORKAHOLICS:A CLICK AWAY

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ABSTRACT:-In today's world, Artificial Intelligence (AI) has become an integral part of human life. There are many applications of AI such as Chatbot, network security, complex problem solving, assistants, and many such. Artificial Intelligence is designed to have cognitive intelligence which learns from its experience to take future decisions. A virtual assistant is also an example of cognitive intelligence. Virtual assistant implies the AI operated program which can assist you to reply to your query or virtually do something for you. Currently, the virtual assistant is used for personal and professional use. Most of the virtual assistant is device-dependent and is bind to a single user or device. It recognizes only one user. Our project proposes an Assistant that is not a device bind. It can recognize the user using facial recognition. It can be operated from any platform. It should recognize and interact with the user.Moreover, virtual assistants can be used in many areas of applications such as education, medical ,vechicles, robotics, home automation as well as security access control**.**

Keywords *:*Artificial Intelligence, Cognitive Intelligence, Virtual Assistant, Facial Recognition, Chatbot

1. INTRODUCTION

AI defines as those device that understands there surroundings and took actions which increase there chance to accomplish its outcomes. Artifical Intelligence used as "a system's ability to precisely interpret external data, to learn previous such data, and to use these learnings to accomplish distinct outcomes and tasks through supple adaptation." Artificial Intelligence is the developing branch of computer science. Having much more power and ability to develop the various application. AI implies the use of a different algorithm to solve various problems. The major application being Optical character recognition, Handwriting Recognition, Speech Recognition, Video Manipulation, Robotics, Medical Implementation, Virtual Assistant, etc.

Considering all the applications, Virtual assistant is one of the most influencing applications of AI and attracting the interest and curiosity of researcher scholars. The virtual assistant supports a wide range of applications and because of this, it is categorized into many types such as virtual personal assistant, smart assistants, digital assistant, mobile assistant, or voice assistant. Some of the well-known virtual assistants being Alexa powered by Amazon, Siri by Apple, Cortana by Microsoft, Google Assistant by

Google, Messenger 'M' by Facebook. These companies act as different ways to implement and improve their assistants.

There are such ways used to implement the assistants based on the usages and its complexity. For ex., Google uses the DNN for its components. Again, Microsoft uses its Azure Machine Learning Studio to develop Cortana's components. However, their potential is limited by some scathing security issues that they don't support powerful authentication mechanisms and they are bind to their specific hardware. Face recognition or other identification mechanisms used before accepting any voice commands and they should not bind to any specific hardware.

In this paper, we upcome with an approach that will overcome the security issue with the help of Face and Speech recognition, and using browser-based assistant will overcome the hardware dedicated problem.

2. BLOCK DIAGRAM

Virtual Assistants is one of the active areas that many companies are trying their hands on to improve its efficiency and applications. Sereval techniques are used to implement the virtual assistants depends on its application or complexity and there are many different architectures for it. Based on this data we designed a data flow
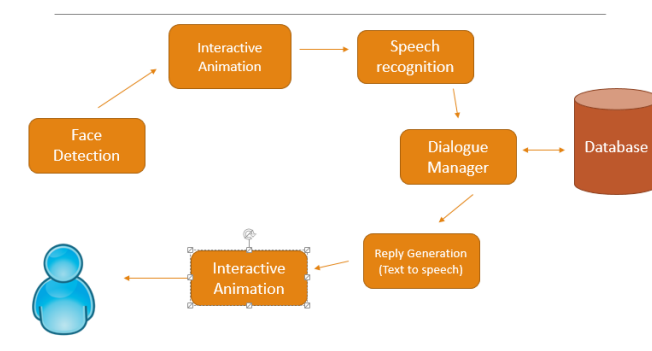
diagram for an assistant.

Fig-1: Data Flow Model

The data flow model of the Interactive Animated Virtual Assistant is shown in Fig.1. the flow of data from the user to the AI and the generation of the reply.

3. WORKING MECHANISM

This assistant is fully modular and has a set of services. Each service offers some tasks to do which then combines its data to give a fully functional virtual assistant. Following is a brief idea about how the virtual assistant is going to function.

It starts with the first step of facial recognition. If the user is detected it transfers to the next step else the prompt is provided as "User not detected want to register as new user" and new user registration prompt is opened and the predefined quaternary is loaded and the user is asked to answer the following questions for the registration process. Once all the questions are answered the facial sample photo is collected and the user is registered successfully and the application starts from the beginning.

Once the user is detected the application is connected to the database having the data of the particular user and the assistant is ready for the query. The user can start the conversation ask a question or do as the user wish. The speech recognition program

converts the speech of the user into the text format and saves that information into the user database as the future data for voice recognition , generated input is then transferred to the Chatbot application or can be called as dialogue manager.

Then the proper reply is generated using the knowledge database. Once the reply is generated the text is then converted into speech and the output is produced through speakers.

Digital Workaholics, A click Away is mainly divided into three services that handle most of the data. The following is the services we proposed in the project:

1.1 Face Detection Service

The Face Detection Service allows our assistant to automatic detection the presence of the user which are going to use the device and verify its user data using the face in the image and database. Face Detection Service simantanously scans the video input from the camera or webcam. As soon as the face is detected virtual is available for further query. Face Detection Service uses the Deep Learning method to detect the face and authorize the user.

1.2 Speech Detection Service

The Speech Detection Module allows the virtual assistant to record the user's voice data using the microphone which then stores into the user database for speech recognition. It also has the functionality of speech synthesis

which converts the text on the screen to the audio.

1.3 Dialogue Manager Service

The Dialogue Manager is the soul of a virtual assistant as it generates the query reply using its knowledge database. It has the functionality to give the most effective and best reply to the query asked by the user. The user input is mostly textual or vocal which the processed using the service which is used in the Dialogue Manager. Dialogue Manager is the key service that has the most complex task to do and give an accurate reply to the query.

1.4 Database

In this Virtual Assistant we divided the database into two part which is as follows:

1.4.1 User Database

The user database has all the information about the user which its image and vocal voice. It serves for user authentication and user insertion.

1.4.2 Knowledge Database

The knowledge database can be local as well as online which includes the facts about the user and its queries and reply's database which gives the idea about how user and reply generation.
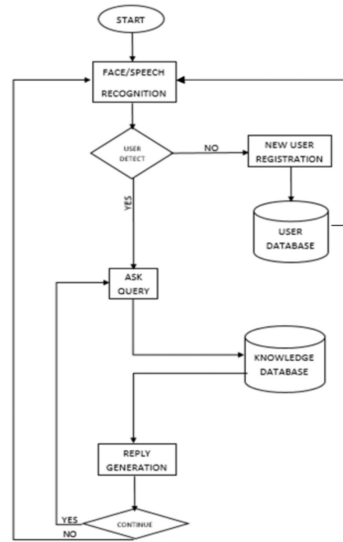
4. RELATED WORK

In the paper [1], the authors have explained how virtual private assistant work and how they are being upgraded using various new technology. It is the multimodal dialogue system. VPAs framework has utilized discourse, illustrations, video, motions, and different modes for correspondence in both the info and yield channel. Likewise, the VPAs framework will be utilized to build the cooperation among clients and PCs by utilizing a few advances, for example, signal acknowledgment, picture/video acknowledgment, discourse acknowledgment, and the Knowledge Base. Moreover, this system can enable a lengthy conversation with users by using the vast dialogue knowledge base. Our project emphasizes the VPA being device-independent which can be accessed whenever and wherever wanted.

In the paper [2], the authors have explained the AR-based Assistant which combines the human interface and location-aware digital system. It gives a much rich experience to the user. In this project, they are closer to create the virtual personal manager which gives the idea about it surrounding and location using augmented reality.

In the paper [4], the authors have explained smart assistants and smart home automation which gives the idea about speech-enabled virtual assistants which they find less secure so using a different technique they tried to overcome that issues.

5. EVALUATION

We evaluated the system in a controlled environment and different tasks as per the modules. I.A.V.A. is an ongoing project. Many changes are being made and being tested each time. Currently, IAVA consist of three modules being.

5.1 Face Detection Module:
In this module using various background and light in the testing environment, it has been tested thoroughly and provided a satisfactory result of detecting and recognizing the face up to 80% time correctly. Optimization is being made to the module as the project goes further.

5.2 New User Registration:
It's a second module and it consists of adding a new user picture which can be added using the webcam and it has also been tested and its works 100%.

5.3 Speech to Text:
It's the third module and it too works with 100% proper results.

5.4 Reply Generation:
It is done using AI. It is in progress and the Chatbot is in a learning state and it can produce an accurate reply up to 70%.

5.5 Text to speech:
It's the final module it converts the written reply from the chatbot to text to be delivered to the user and it works with a 100% success rate.

5.6 WEB Site or CGI module:
This module is currently under building state and has not yet been tested.

6. CONCLUSION

Our paper introduced IAVA – our Omni accessible virtual personal assistant which can be accessed from any device and can be used by any registered user. We propose to utilize various AI techniques to achieve so such as face detection, speech recognition, Chatbot application, text to speech translation. All this while providing an interactive animation.

Based on our data we can find that this type of project can be very popular in users since it can be accessed from any device and it can be used in the future project. This type of Project can be used for medical purposes, business purposes, and many other applications.

7. FUTURE SCOPE

Following technology further can be upgraded with new budding techs such as emotion detection and live face interaction. The interactive animation can be upgraded to the facial animation for a more human-like feel.

8. ACKNOWLEDGMENT

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9. RESULT

We evaluated the system in a controlled environment and different tasks as per the modules. It is an ongoing project. Many changes are being made and being tested each time. Currently, it consist of three modules being

9.1 Face Detection Module:

In this module using various background and light in the testing environment, it has been tested thoroughly and provided a satisfactory result of detecting and recognizing the face up to 80% time correctly.

9.2 New User Registration:

This module consists of adding a new user picture that can be added using
The webcam and it has also been tested and it works 100%.

9.3 Speech to Text:

This module convert's user asked query into the input of the Chabot and it too works
With 100% proper results.

9.4 Reply Generation:

This module gives the best possible reply with the help of deep learning
According to the query asked by the user.

9.5 Text to speech:

This module converts the written reply from the Chatbot to text to be delivered to the User and it works with a 100% success rate.

9.6 WEB Site or CGI module:

This module is the front-end of our project which is design using web-
Scripting and programming.

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