

VIRTUAL ASSISTANT ON DESKTOP

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ABSTRACT

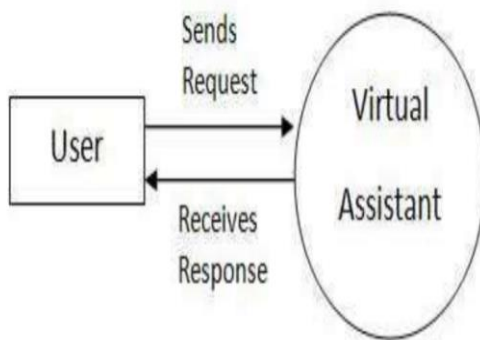
This project is to build an intelligent Virtual Desktop Assistant that focuses on user-based data. Natural Language Processing is used to activate the ability to communicate socially, storing (and evaluating) information in the context of the user. With the NLP (Natural Language Processing) methodology The following are some of the basic tasks that most virtual assistants can help with playing music , Can send What's App messages as well as direct messages. Search on Wikipedia. This assistant can do all the duties listed above and even many more. This Virtual Assistant is a desktop-based application and implemented with various modules and libraries in python.

INTRODUCTION

All the tasks are almost digitalized in today's era. we are having world at your fingertips with a single smartphone. These days we aren't even using fingers. We just speak of the task, and' followed by the command. And within seconds, it getexecuted.

Virtual sidekicks are software programs that help you ease your day- to- day tasks, similar as showing rainfall report, creating monuments, making shopping lists etc. They can take commands via textbook (online converse bots) or by voice. Voice grounded intelligent sidekicks need an invoking word or wake word to spark the listener, followed by the command. For my design the wake word is JARVIS. We've so numerous virtual sidekicks, similar as Apple's Siri, Amazon's Alexa and Microsoft's Cortana. For this design, wake word was chosen JARVIS(Just a Really Very Intelligent System).

JARVIS the name is inspired from a movie Iron Man, Where JARVIS is a Natural language stoner interface computer system i.e Virtual Adjunct in the movie This system is designed to be used efficiently on desktops. particular adjunct software improves stoner productivity by managing routine tasks of the stoner and by furnishing information from online sources to the stoner. JARVIS is royal to use. Call the wake word ' JARVIS



PYTHON LIBRARIES

1 DBpedia

For supporting integration of information, knowledge bases are playing important role to enhance the web intelligence. It allows us to extract the required information from the Wikipedia. The DBpedia knowledge base has several advantages : it supports many domains;

2 Pytttx

Pytttx stands for Python Text to Speech. It supports Windows, Mac OS X,. It can be used in offline also. This is the main advantage of using in Virtual assistant. Python 2x and python 3x are the supported versions.

3 gTTS

Google Text to Speech It is very easy to convert the text into audio and these audio file can be saved with .mp3. The gTTS API used in various languages including Telugu, French, German English, Hindi, Tamil etc.

4 Speech Recognition

Speech recognition is used to listen the voice which is given by the user and converts the audio of the user into human readable format or text.

5. Geocoder

It helps to convert the location description like pairs of coordinates, address or name into the location on the earth surface. It converts the addresses into geographical coordinates.

6.Cv2

It can be called as OpenCV python. It performs image and video processing. It is used to computer vision problems.

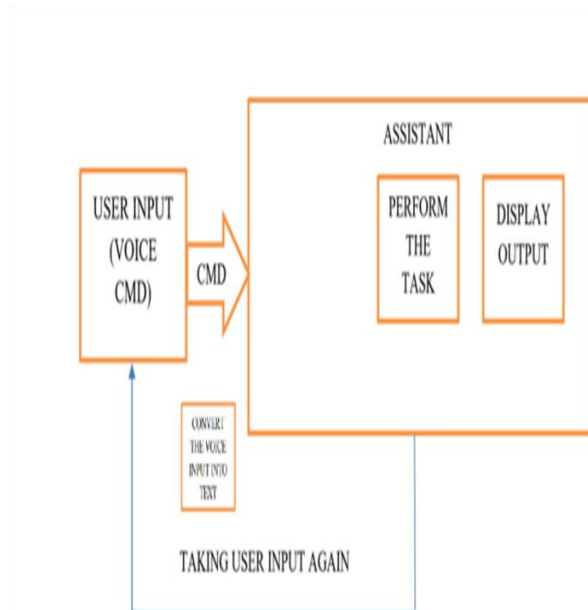
7. Wolfram Alpha

It is used as a computation search engine to evaluate what exactly the user asks. It calculates the expert level answers with the help of algorithms, knowledge base and Artificial intelligence technology.

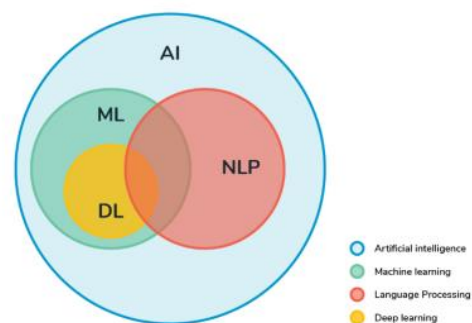
8. SSL

Secure Socket Layer –It helps to secure connection and communication in between the server and client. It is a technology where we can establish the encrypted link between the client and a server. The servers can be web server or a browser and the client can be the mail

SYTSEM ARCHITECTURE



NLP can be used in chatbots as well. They help in solving issues by understanding requests and responding after completing the task. There are many other apps that we land without even noticing, we can easily encounter with NLP. Email recommendations and filtering unwanted emails in spam folder language transformation are some of the examples where we can use Natural language processing.



Natural Language Processing (NLP)

Natural Language Processing is one of the popular methodology in Artificial Intelligence (AI). It converts into the human language for better understanding of the machines. Its goal is to build applications in such a way that can recognize the text and perform tasks like whichever commanded by the user.

Natural Language Processing understand the human language to the computers. Behind it, NLP analyzes the grammar in sentences and the meaning of words, then uses algorithms to extract data and deliver responses. It can automatically perform different tasks by sensing. virtual assistants, like Google Assist, Siri, and Alexa are some of the popular examples of NLP.

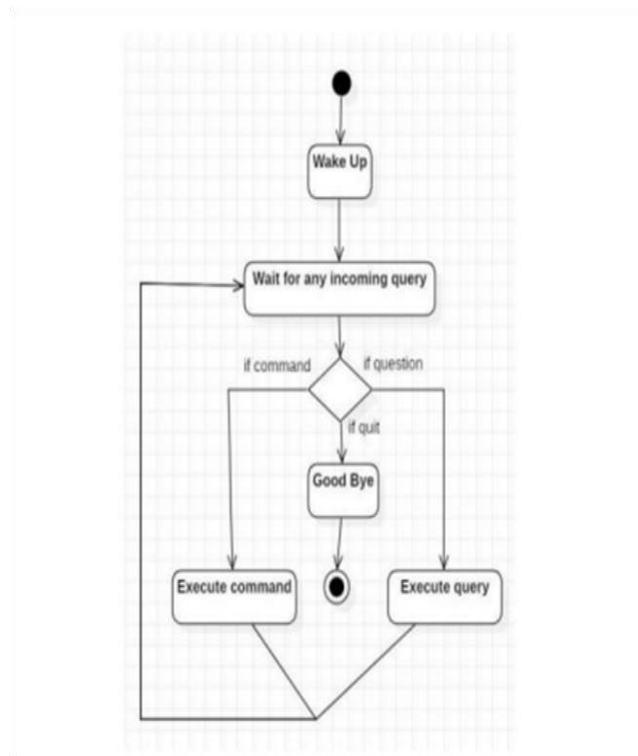
NLP WITH CNN (Convolutional neural networks)

In deep learning we have a new methodology called CNN Which has been using widely in the market. It's been using to analyze the images as well. Classification of Images and recognizing the Face, Detecting various objects can be done using these CNN

In processing of various images we will use massively these techniques. Many new innovations and enhancements are going on to improve efficiency and reliability in the field of Machine learning. Keras implementation and it's enormous explanation has been given in this article. And majorly explained the NLP implementation as well.

The main part of usage of CNN is to slide and determining data in the window previously they are.

DATA FLOW DIAGRAM



DATASETS

Low, medium and high are the 3 levels that are going to use as datasets which comes under severity. The road cracks are detected by the camera and lidar which mainly focuses on the width and depth of crack. High severity can be used to resolve deep and wide cracks and low - medium severity is used to resolve narrow and shallow cracks.

MRCOIS uses the methods based on a collection of various methodologies for cracking

localization and as well as the depth and width of a crack using severity based on multilabel classification

The road cracks in the image are picked falsely as the methodologies in these are very sensitive in the field of noise. These are also used to join edges which are discontinuous and thus it can also be called as yield incomplete edges. This can be sometimes undergoes for failure cases where it can go with false edges having without any cracks. The first method was based on a Convolutional Neural Network (CNN) with structured prediction. For detection of different levels of crack severity, the architecture has slightly modified and improved it's efficiency.

SOFTWARE REQUIREMENTS

- Computer Vision on python
- Libraries of deep learning
- Python libraries such as
DBpedia
Pyttax
gTTS
Speech Recognition

Geocoder
Cv2
Wolfram Alpha
SSL
- Python IDLE

FUTURE SCOPE

We need to set an environment such a way that Artificial Intelligence-based Virtual Assistants change the life of a human into an essential piece of their daily routine.

- 'The ability to learn, reuse, and increment needs to be among individuals and as well as in machines. Email automation is one big example.

With these Virtual Assistants, there is no need to use various input device and also it's helps mainly for the blind people and Physically handicapped persons. It offers a creative and flexible environment for the consumers. Email automation can be done for the customers and reporting issues facing from the user side.

ACKNOWLEDGMENTS

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Apart from that, we would also thank my friends who contributed a lot in finalizing this crucial project within the given limited time frame.

CONCLUSION

In this project "Virtual Assistant Using Python" we discussed the system architecture and implementation of Virtual Assistance on desktop in clear manner. We have used various modules like Geocoder,cv2,Wikipedia,ssl,speech recognition etc. These modules brings the project to high level efficiency and more flexibility. In addition to that, it adds various functionalities without changing the current one.

Apart from listening to the commands given by the user, It also tries to give the responses and feedback to the user in return. The user feels more comfortable and feels free to interact with the voice assistant because of the flexibility. The application tries to eliminate unnecessary work irrespective of the user commanded task. The entire system works with the input in the verbal format only.

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