J.A.R.V.I.S: YOUR PERSONAL VIRTUAL ASSISTANT

MINOR PROJECT SYNOPSIS

BACHELOR OF TECHNOLOGY

Information Technology

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1 Introduction

We are all admirers of the Marvel series and especially Tony Stark's assistant J.A.R.V.I.S. The full form of J.A.R.V.I.S. i.e. "Just A Rather Very Intelligent System" is also very appropriate and fit for all he does for Tony. We have all dreamt of having one JARVIS for our whole lives. So, why not start by building one elementary JARVIS ourselves. It's a software agent that can perform tasks or services for an individual based on commands or questions

Though the real JARVIS is built with AI technologies, here in this project, we will code it with Python and already trained models for commonly used languages like English. All these models will be installed or imported as packages in our project.

Have you ever wondered how cool it would be to have your own A.I. assistant? Imagine how easier it would be to send emails without typing a single word, doing Wikipedia searches without opening web browsers, and performing many other daily tasks like playing music, opening text editors and other system software's, tracking the price and comparing it with our budget, tracking all the available or ongoing COVID-19 vaccination drives with the help of a single voice command.

2 Objectives

1. To be capable enough to recognize the user using face recognition and then listen respond to your voice.
2. To open most of the system software's like notepad, calculator, IDE's, Music Players, etc for you.
3. To be capable of opening websites like Google, YouTube, etc., in a web browser.
4. To be able to scrape some data from website like Wikipedia, E-commerce website and Co win.
5. To be able to track prices of desired products from e-commerce websites.
6. To do Web Scraping and report current date and time for you without even typing.
7. To send Email to the intended user without even typing the message and email address of the sender.
8. To be capable enough to fetch nearby COVID-19 Vaccination Drives according to the district, state or precisely by your pin code.

3 Feasibility Study

An AI personal assistant is a piece of software that understands verbal or written commands and completes task assigned by the client. It is an example of weak AI that is it can only execute and perform quest designed by the user. Speech recognition technology has become an increasingly popular concept in recent years. From organizations to individuals, the technology is widely used for various advantages it provides.

One of the most notable advantages of speech recognition technology includes the dictation ability it provides. With the help of technology, users can easily control devices and create documents by speaking. Speech recognition allows documents to be created faster because the software generally produces words as quickly as they uttered, which is usually much faster than a person can type. Dictation solutions are not only used by individuals but also by organizations that require massive transcription tasks such as healthcare and legal.

1. In technical aspect we have all the software and hardware required for this project. All the technologies required for this project like python libraries are easily accessed from the internet and are all loaded in the developer's system

2. In economical aspects all the software's required for the project are easily accessible free of cost and legally from the internet

3. In operational aspect , It is practically possible to develop this project and is operationally feasible.

4 Methodology

Generally, it took lots of time to write code from scratch to build a Virtual Assistant. So, We have used various libraries and API's, which gives us easy functionality to build our Virtual personal Assistant JARVIS and add face recognition security mechanism.

1. Recognizing & synthesis the voice
2. Training the speech recognition model to be able to understand different voices of people
3. Interpreting it using speech-to-text API
4. Processing the information, either by fetching the information from web using internet or offline only.
5. Sending the status or the result of the output in audio using text-to-speech functionality to user.

4.1 Planning of work

We will divide our whole project into 4 modules, that will be capable enough to work individually.

1. Jarvis(Speech-Recognizer)
2. Face-Recognizer
3. Price-Tracker
4. Vaccine-Tracker

5 Facilities required for proposed work

5.1 Hardware Requirements for the project:

1: A working Laptop/PC with following specifications:

1.1. Processor: Intel(R) i3220 Processor (3M Cache, 3.30 GHz) or above

1.2. Hard-disk: 10GB

1.3. RAM: 4GB

1.4. Input Devices:-Keyboard, Mouse, Camera, Mic (inbuilt or external)

1.5. Output Devices:-Monitor, Printer,Speakers

2. Internet for Web based functionality

5.2 Software Requirements for the project:

1. Operating system: Windows 10(Any version)

2. Python (3.7.4)

2. IDE (Visual studio code)

4. Anaconda or pip Package Manager

6 References

[1] https://cloud.google.com/speech-to-text

[2] https://ieeexplore.ieee.org/document/6188154

[3] https://www.ibm.com/cloud/learn/speech-recognition: :text=Speech