AI Assistant for Daily Use

Siddheshwari Dutt Mishra[1], Arpit Dhiman[2], Devang Dhyani[3]

Department of Computer Science and Technology and Engineering, Manav Rachna International institute of research and studies

Abstract

Our Current lives have been continuously increased by the rise of artificial intelligent assistants, which has changed the way we engage and think with technology. These computer programmes replicate human interaction and carry out task for users by utilising artificial intelligence and natural language processing. These are functional for variety of devices and are useful for scheduling, making notes, doing research, and even for daily todolist. These compute assistants respond to consumer inquiries quickly and thoughtfully by using voice input and tools like OpenAI'sChatgpt or Gemini.In this assistant can separates its identity from current application by providing customizing and scalable base. It also not only listen but also response queries in vocal which provide user better understanding. Users can adjust it according to requirement and functionality to their specific needs,.

Keywords: Artificial Assistant, Speech Recognition, Speech to text, Text analyzing, Audio-response.

1. Literarture Review

1. Ai based virtual assistant:-
The paper details the development of a Virtual Personal Assistant (VPA) for Windows using Python, designed to handle tasks and provide services via voice commands. This assistant employs speech recognition and natural language processing to convert spoken inputs into text and perform various functions such as managing emails, setting reminders, and playing media. The system integrates machine learning techniques for enhanced performance and uses Python libraries like pyttsx3 for text-to-speech and Speech Recognition for interpreting voice commands. The VPA aims to improve productivity and accessibility, providing an efficient and customizable tool for users, particularly benefiting those with disabilities.

2. Donna a web based personal assistant:-
The paper presents "Donna," an artificial intelligence-based personal assistant designed to streamline scheduling and task management for users. Donna automates the scheduling process by extracting meeting-related emails, interfacing with the user's Google Calendar to find suitable times, and sending responses to clients. It features a task manager that organizes tasks by priority and deadlines, and includes a chatbot with text-to-speech capabilities for user interaction. Unlike existing systems, Donna not only handles meeting arrangements more efficiently but also integrates with various tools to improve user experience. Limitations include the lack of travel time considerations and multi-user support. Overall, Donna aims to enhance productivity and accessibility through AI-driven automation.

3. Implementing intelligent virtual assistant:-
This paper examines the impact and development of intelligent virtual assistants, which leverage artificial intelligence and natural language processing to simplify daily tasks like scheduling, research, and information retrieval. It outlines the design and system architecture of a virtual assistant, emphasizing components such as speech recognition, API integration, and text-to-speech modules. While these assistants enhance productivity and user interaction, the paper also addresses challenges including privacy concerns, context understanding, and the risk of over-reliance. The study highlights the potential for future improvements and expansions, such as multilingual support and smart home integration, while acknowledging the need for continued development to address existing limitations.

4. Personal AI assistant:-
This paper details the development of a personal desktop assistant using Python, it is designed to streamline and automate computer-related tasks through voice commands. The assistant integrates speech recognition, natural language processing, and various APIs to perform functions like opening applications, searching the web, and playing music. Its key features include a customizable interface, flexible listening options, and support for multiple voice preferences. The system's design aims to enhance user productivity and interaction with technology, and future improvements include incorporating artificial intelligence and IoT capabilities to expand its functionality.

5. AI in daily life:-
In this research it reviews the growth in artificial assistant as well as interface is increasing in daily routines and it highlights their problems and merits.AI technology, driven by advancements in sensors, algorithms, and networking, is transforming industries from healthcare to home automation. While virtual assistants improve accessibility and offer support for tasks like mental health therapy, they also raise concerns about job displacement, privacy risks, and ethical issues. Additionally, human attachment to AI, along with biases in AI systems, poses challenges in shaping future human-machine interactions.Soon when ai assitant become a part of daily routine , it will increase the risk on privacy and it will take risk to increase the capability..

6. AI in everyday life:-
In this AI desktop computer are compute program that basically use AI to understand and respond to human requests. they offer features like web searching, emails, news information and weather reports . these assistant can be be generated by python based program , which can be use to automate tasks and improve productivity .AS AI techonlogies in advancing these assistant will boost with more specialized tools.

7. Can ai assistant know what they dontknow :-
The research paper "Do AI Assistants Know What They Don't Know?" whether virtual system is capable to check their own limits.It focuses on how AI models estimate uncertainty to gauge confidence in their responses. While AI lacks true self-awareness, it can use statistical models to detect when it might be wrong or unsure. This capability is crucial in high-stakes fields like healthcare or legal advice, where providing incorrect information can have serious consequences. However, accurately identifying knowledge gaps, especially in unfamiliar or novel situations, remains a significant challenge for AI systems.

8. How Do Data Analysts Respond to AI Assistance:-
The paper "How Do Data Analysts Respond to AI Assistance?" which is A Wizard-of-Oz Study" explores how data analysts interact with AI-powered tools in their work. In the study, human researchers provided ai assistance to data analytics to stimulate ai support . The study found that data analysts were generally receptive to AI assistance but often questioned its reliability and accuracy. Analysts valued AI that offered suggestions while allowing them to maintain control over decision-making. The paper here highlights the need for AI tools to balance offering helpful insights with fostering user trust and autonomy.

9. Comparative Study on Smart Cooking Assistant:-
The paper "Comparative Study on Smart Cooking Assistant: Its a First Step to Develop Intelligent Assistant for Cooking Enthusiasts on Sri Lankan Traditions" explores the development of a smart cooking assistant tailored to Sri Lankan culinary practices. It compares existing smart cooking technologies also identifies gaps in addressing the definite needs of Sri Lankan cooking traditions, such as local ingredients, unique preparation methods, and cultural significance. The study emphasizes the potential of AI to enhance the cooking experience by offering personalized guidance, recipes, and step-to-step instructions, ultimately aiming to create a culturally aware smart assistant for Sri Lankan cuisine.

10. The Ethics of Advanced AI Assistants:-
The paper "The Ethics of Advanced AI Assistants" investigate the ethical challenges surrounding the development and use of AI assistants. It also addresses key concerns such as privacy, data security, transparency, accountability, biasness. As AI assistants become more adaptive into daily life, they collect vast amounts of personal data, will raise privacy issues. Ethical considerations also involve ensuring that

these systems are transparent about how decisions are made and when thing gone wrong who is responsible. Additionally, the potential for bias in AI systems and their impact on fairness in decision-making is a major ethical concern. The paper advocates for guidelines and regulations to ensure that AI assistants operate responsibly, with user rights and societal values in mind.

11. The Value,Benefits and Concerns of Generative AI-Powered Assistance in Writing:-
The paper "The Value, Benefits and Concerns of Generative AI-Powered Assistance in Writing" discusses the advantages and challenges of using AI tools for writing. Generative AI can enhance creativity, improve productivity, and provide personalized writing support, making it a valuable resource for writers. However, concerns arise around issues like originality, plagiarism, over-reliance on AI, and the potential loss of human creativity. There are also ethical concerns regarding bias in AI-generated content and its impact on intellectual property. The paper highlights the need to balance the benefits of AI assistance with mindful usage and ethical considerations.

12. The impact of artificial intelligence on people's daily life:-
The paper "The Impact of Artificial Intelligence on People's Daily Life" examines how AI technologies are transforming everyday experiences. It highlights AI's role in various areas, such as personalized recommendations in entertainment, virtual assistants, smart home devices, healthcare innovations, and transportation (like self-driving cars). While AI offers convenience and efficiency, it also raises concerns about privacy, job displacement, and over-reliance on technology. The paper discusses the need for responsible AI development, balancing the benefits with potential social and ethical challenges to ensure that AI enhances, rather than disrupts, daily life.

13. Application of Artificial Intelligence in Practical Scenarios:-
The paper "Application of Artificial Intelligence in Practical Scenarios" explores how AI is applied across various real-world domains. It highlights AI's use in industries such as healthcare (for diagnosis and treatment recommendations), finance (fraud detection and algorithmic trading), manufacturing (automation and predictive maintenance), and transportation (autonomous vehicles). The study emphasizes AI's ability to enhance efficiency, decision-making, and innovation in these sectors. However, it also points challenges like data privacy, security, and the need for AI's responsible and equitable implementation in practical scenarios.

14. Learners' perceived AI presences in AI-supported language learning: a study of AI as a humanized agent from community of inquiry:-
The paper "Learners' Perceived AI Presences in AI-Supported Language Learning: A Study of AI as a Humanized Agent from Community of Inquiry" investigates how learners perceive AI in language learning environments. It focuses on AI's role in creating social, cognitive, and teaching presences within the framework of the Community of Inquiry (CoI) model. The study explores how AI can be seen as a "humanized agent," fostering interaction, engagement, and personalized feedback in language learning model. While AI enhances learning by providing timely support, the research also highlights challenges in maintaining authentic human-like interaction, emotional engagement, and balancing AI's role with that of human instructors.

15. Smart AI Voice Assistant through Generative Text Transformer and NLP Implementation in Python:-
The paper "Smart AI Voice Assistant through Generative Text Transformer and NLP Implementation in Python" discusses the development of a smart voice assistant using advanced natural language processing (NLP) techniques and generative text transformers, implemented in Python. The study highlights how transformers like GPT (Generative Pre-trained Transformers) can enhance the assistant's ability to understand and generate human-like responses. It can also very productive for users By integrating voice recognition and NLP, the AI assistant can perform tasks such as answering questions, executing commands, and engaging in conversations. The paper also addresses challenges like improving the assistant's accuracy, contextual understanding, and handling diverse user inputs effectively.

1. Introduction

An **Arificial assistant** is a software agent that performs any task or functional program that are requested by the users, including verbal commands or queries. These assistants are embodied with voice assistant or chatbots that are designed to understand human and respond to human language, offering a wide range of services and information .enabling interaction through text, or voice. speech and. Users can ask virtual assistants any queries he/she has regarding to history or general affairs or any data which is difficult to find, , manage email, to-do lists, calendars, and more these—all through verbal commands[1]. These AI-powered assistants leverage machine learning and natural language processing to understand and execute voice commands, making them valuable tools in various domains, from consumer use (think Apple's Siri, Amazon Alexa, Google gemini) to customer service and support in different industries. Recently, increased in capabilities of AI chatbots and softwares are catching interest of customers in virtual assistant products and services. AI asssistants have capabilities to uses NLP (Natural Language Processing) to text and voice commands. These digital companions have become increasingly popular due to their convenience and ability to streamline various aspects of our daily lives. Whether it's managing appointments, fetching information, or automate tasks, AI assistants play a crucial role in enhancing productivity and simplifying interactions with technology.

2. Methodology

To ensure a successful deployment of the intelligent virtual assistant, the project's design process includes a number of crucial elements. Defining the assistant's requirements and specifications based on user needs, suggestions from previous work, and results of evaluations is the first phase. This uses functionality of Python libraries, using relevant speech integrate. The accuracy and effectiveness of the assistant's comprehension and response to user enquiry tested and improved. In order to enhance the assistant's capability to model complex tasks and optimising paths with numerous subtasks, ML techniques will also be used, and results of evaluations is the first phase.

The functionality and algorithm of the assistant will then be developed using Python libraries, using relevant speech-to-text models and speech rearrangement APIs that we will select and integrate. The accuracy and effectiveness of the assistant's comprehension and response to user enquiry tested and improved. In order to enhance the assistant's capacity to model complex tasks and optimise paths with numerous subtasks, machine learning techniques like pickle ,matplotlib will also be used., which enables to do predictive calculation if needed , in the last phase in the design technique we will add speech recognition and pydub to extract audio for user to verbale interaction .

The user will also receive feedback via the interface, including ideas for new tasks and confirmation done.By employing this methodology, we that enhances its customers' productivity and quality of life while being extremely the assistant will then be developed text models and speech rearrangement APIs that we will select and integrate. The accuracy and effectiveness of the assistant's comprehension and response to user inquiries will then be tested and improved. In order to enhance the assistant's capacity to model complex tasks and optimise paths with he integration of the assistant with a user-friendly e, which enables users to effortlessly interact with the assistant through voice commands, is the last phase in the design technique. The user will also receive feedback via the interface, including ideas for new tasks and confirmation is done. To make sure the assistant satisfies the user's needs and expectations, we will regularly test and evaluate it throughout the design process, giving priority to user feedback. By employing this methodology, we that enhances its customers' productivity and quality of life while being extremely interface, which enables users to effortlessly interact with the assistant through voice commands, is the last phase in the design technique, including ideas for new tasks and confirmation of those that have been done.

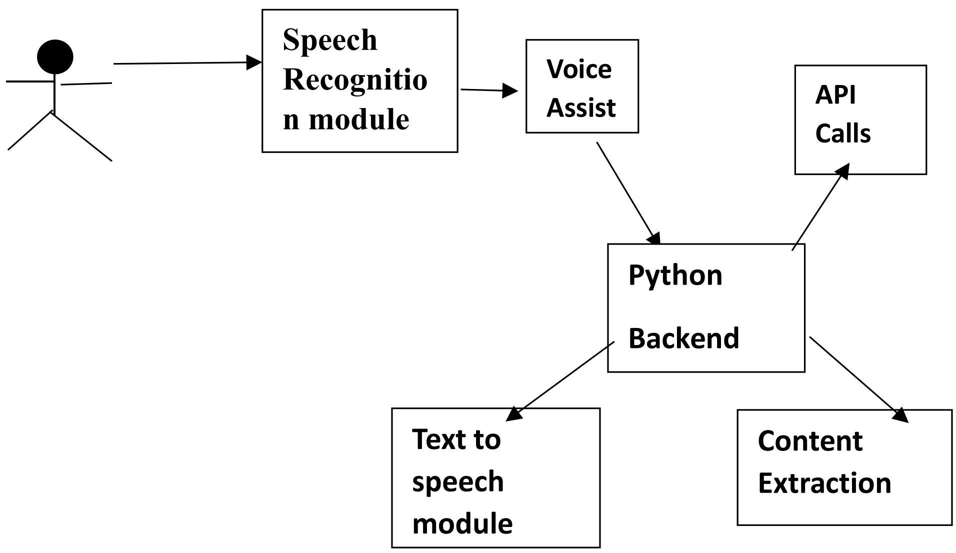
the assistant satisfies the user's needs and expectations it will evaluate the design process, we will regularly test and evaluate it throughout the design process, giving priority to user feedback.The suggested system archietecture consists of a number of parts that interact to give the user an intelligent voice assistant.

- **Speech to recognition as sr-**It is a python library which allows machine to recognize human voice and make inputs according to them.

- **Text to speech:-** Pyttsx3 is a python text to speech library. In this library we can run or perform on python versions.
- **Wikipedia:-**It is basically a website which provide every type of information ,user use it as a source of information.
- **Web browser:-**In Python we have a widely used controller module .The High-level interface provided by this module makes it possible to display all the present docs present on the web.
- **OS:-**The OS module of python gives users the ability to create interaction path with their operating system.

3. SYSTEM ARCHIETECTURE

```
import pyttsx3
import speech_recognition as sr
import datetime
import wikipedia
import pyaudio
import webbrowser
import _tkinter as tk
from plyer import notification
import pyautogui
import speedtest



engine = pyttsx3.init('sapi5')
voices = engine.getProperty('voices')
print(voices[1].id)
engine.setProperty('voice',voices[0].id)



def speak(audio):
    engine.say(audio)
    engine.runAndWait()
```



4. Working Model

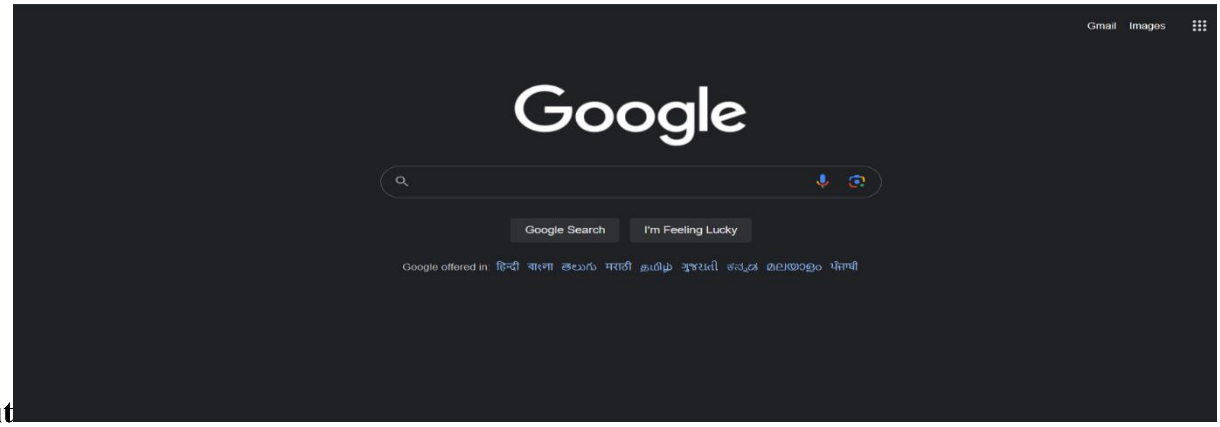
The voice assistant starts up and waits for user input before starting to record any voice commands. The AI assistant then scans the command for a specified prompt and, if it is heard by AI assistant, the assistant performs the desired task. When a task is finished, the assistant notifies the user of the results using the appropriate output mode, which may include multimedia like text, voice, video, or images. User input, task e operation. Together, these elements enable a user The voice assistant starts up and waits for user input before starting to record any voice commands.

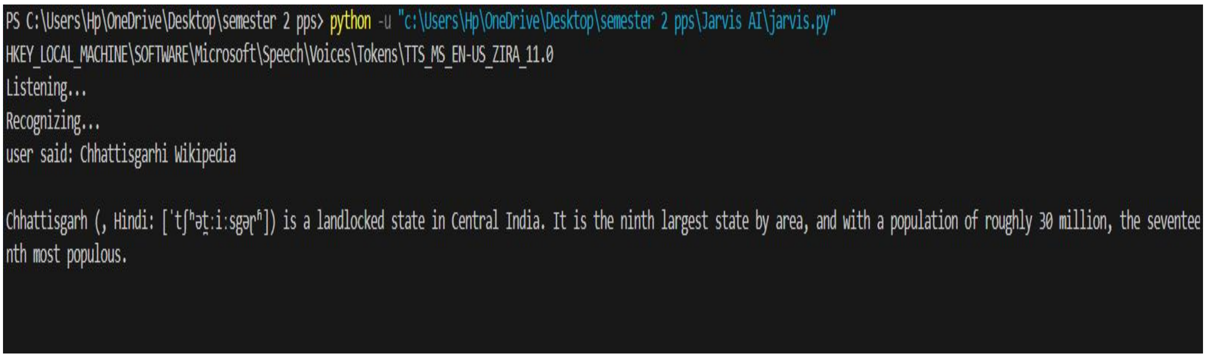
The assistant then specified keyword and, if it is heard, performs the desired task. When a task is finished, the assistant notifies the user of the results using the appropriate output mode, which may include multimedia like text, voice, video, or images. User input, task execution, and output are the three main features that drive the system's operation. Together, these elements enable a user-friendly and productive voice assistant experience The voice assistant starts up and waits for user input before starting to record any voice commands. The assistant then specified keyword and, if it is heard, performs the desired task.

When a task is finished, the assistant notifies the user of the results using the appropriate output mode, which may include multimedia like text, execution, and output are the three main features that drive the system's friendly and productive voice assistant experience.

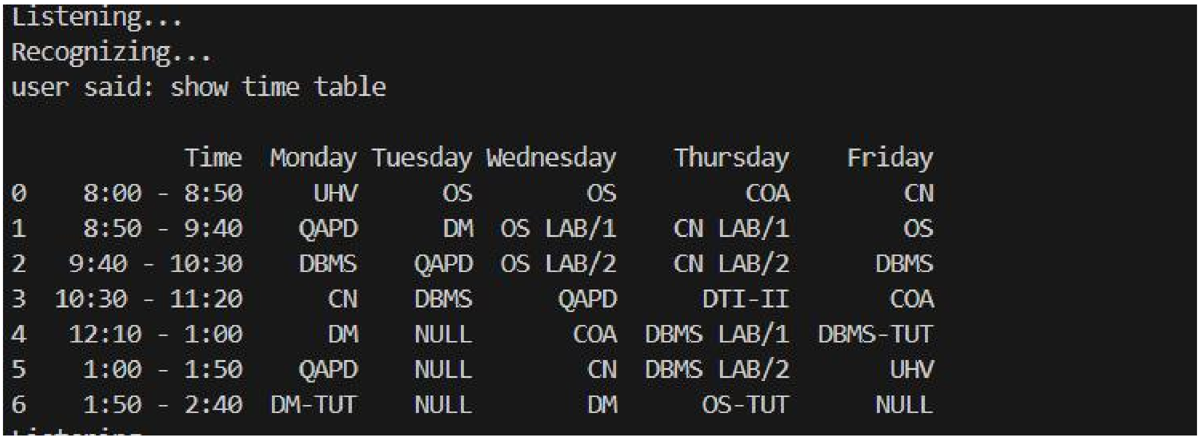
```
import pyttsx3
import speech_recognition as sr
import datetime
import wikipedia


engine = pyttsx3.init('sapi5')
voices = engine.getProperty('voices')
print(voices[1].id)
engine.setProperty('voice',voices[0].id)


def speak(audio):
    engine.say(audio)
    engine.runAndWait()

    def wishMe():
        hour = int(datetime.datetime.now().hour)
        if hour>=0 and hour<12:
            speak("Good Morning")

        elif hour>=12 and hour<=18:
            speak("good Afternoon")

        else:
            speak("good evening")

            speak("I am jarvis sir. How may i help you")

def takecommand():
    #it takes microphone input from the user and returns string output

    r = sr.Recognizer()
    with sr.Microphone() as source:
     print("Listening...")
```

4.1 User input



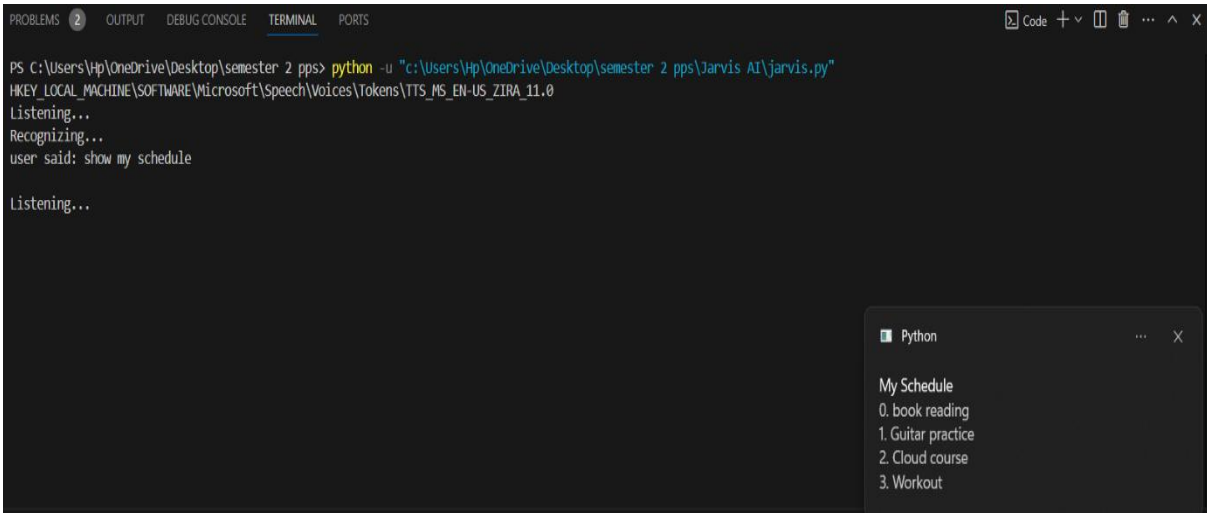


4.2 Fetching details from Wikipedia



	Time	Monday	Tuesday	Wednesday	Thursday	Friday
0	8:00 - 8:50	UHV	OS	OS	COA	CN
1	8:50 - 9:40	QAPD	DM	OS LAB/1	CN LAB/1	OS
2	9:40 - 10:30	DBMS	QAPD	OS LAB/2	CN LAB/2	DBMS
3	10:30 - 11:20	CN	DBMS	QAPD	DTI-II	COA
4	12:10 - 1:00	DM	NULL	COA	DBMS LAB/1	DBMS-TUT
5	1:00 - 1:50	QAPD	NULL	CN	DBMS LAB/2	UHV
6	1:50 - 2:40	DM-TUT	NULL	DM	OS-TUT	NULL

4.3 Showing Time table



4.4 Daily todo list Schedule

5. SCOPE

Scope includes sophisticated algorithms and strategies for voice assistant for increasing model accuracy. It also adding potential area of expansion added to the system capabilities by support more languages and modules for more complicated activities. Some other potential is for future improvements is combining this system with smart home gadgets and other IOT devices for assistant of users for automation and control. Combination of Machine learning(ML) also used to enhance system's comprehension of user queries is another potential area of research. Overall there is many more things to be added to improve and develop further in order to give consumers more satisfactory results.

6. ADVANTAGES

This system helps user to increase productivity by automating different tasks. NLP interactions makes more engaging and fulfilling. It is also helpful for those peoples who are disabled or who might have trouble using conventional input devices. It can help. user to perform many tasks dynamically. It also give assistance those peoples who want to know a specific doubts. It can interact with other technologies like smart home applications and IOT devices or office software. Scalability : versatile and adaptable solutions for both organizations and individuals. It also used to generate images which ever a prompt is used to enter in it. It can also schedule your daily routine and user can also check daily information or updates and create todolist which pop-up in its interface or desktop.

7. FUTURE SCOPE

1. The interface is little complex for the users due to some rules or call functions.
2. The speech recognition has a range.
3. It does have a compute vision till now to recognize human face.

8. CONCLUSION

In the end the development the growth of artificial intelligence is changing our daily routine habits. Nowadays if a user want to do a specific task then their a AI is always available for a user to complete its tasks. The system that is being suggested in this article is a prime example of this type of technology, this allows users to done day to day tasks by the automate numerous functions. The system is more efficient at saving time of a user. It offers wide range of capabilities, including online booking, access to forecast information daily news, and medical queries. We may anticipate more developments in this area in the future, which add a new level of efficiency and convenience to our daily lives. It arise the new area of innovation. With so many advantages, this technology is destined to play a crucial role in our daily lives in the future.

9. REFRENCES:

1. 1. Mrs. Patil Kavita manojkumar, Aditi Patil, Sakshi shinde, shakti prasad patra, salonipatil 'Review paper on AI based virtual assistant using python' volume 11 issue III march 2023.
2. Ami Doshi, Riya Shah, Drasti Bhimani, Bhoomi patel, swatimali 'Research paper on Donna web based personal AI assistant volume 175 – no.8, October 2017.
3. Yolanda Gil, Varun Ratnakar, Timothy chkvolski, Paul groth, Denny vrandecic capturing common knowledge about tasks: Intelligent Assistance for To-do lists.
4. V. Geetha , C.K. Gomathy, kotamasumansasri Vardhan, Nukala pavankumar "The voice -Enabled Personal Assistant for PC using python", International Journal of Engineering and advanced technology April 2021
5. Prajyot Mane, Shubham Seone, Nachiket Gaikwad and Prof. Jyoti Ramteke "Smart Personal Assistant using the machine learning" 978-1-5386-4649-6/18/$31.00 2018 IEEE.
6. Veton kepuska, Gamal Bohouta, "Next – Generation of virtual Personal Assistants" 78-1-5386-4649-6/18/2022 IEEE.
7. Jenny T. Liang, Chenyang yang, Brad A. Myres "A large- scale survey on the usability of AI programming Assistants: Successes and challenges".
8. Aaditya Bhardwaj, Deepankar Pratap singh, Hritik sahu "Automating desktop tasks with a Voice-controlled AI Assistant using Python".
9. Qinyuan Cheng, Tianxiang sun, Xiangyang liu, Wenwie Zhang, Zhangyue Yin, Shimim li,Linyang li, Zengfu he, kai chen, xipeng Qiu "can AI Assistants know What They Don't Know ?
10. Ken gu, Madeleine Grunde- Mclaughlin, Andrew McNutt, Jeffrey Heer, Tim Althof "How do data analysts respond to AI assistance ? A wizard-of-Oz study".

11. Xinghua wang, Hui pang, Mathew P. Wallace, Qiyun Wang, Wenlichen(2022): Learners' perceived AI presences in AI-supported language learning: a study of AI as a humanized agent from community of inquiry, computer assisted language learning, DOI: 10.1080/09588221.2022.2056203.
12. Wardani, H.K, Mazidah, E.N ,&Hidayah B. (2024). "Comparing the use of AI tools in Mathematics and English Education: The potential and challenges of AI as learning Assistant for FKIP universitas Qomaruddin students in completing academic task
13. Jose Gabriel Carrasco Ramirez, Md. Mafiqul Islam "Application of Artificial Intelligence in Practical Scenarios"
14. Yunxin Du "The impact of artificial intelligence on people's daily life" ISSN 2616-7433 Vol.6, Issue 6: 12-18, DOI: 10.25236/FSST.2024.060603"
15. Manav Rachna International Institute of research and studies