

# SMART AND VOICE RECOGNITION AUTOMATION BOT USING A.I. & MACHINE LEARNING

MD.AHMED\*<sup>1</sup>, P.H.V.KANAKASAI\*<sup>2</sup>, T.S.N.S.JASMITHA\*<sup>3</sup>, U.TARUN\*<sup>4</sup>, R.SAI  
GANESH\*<sup>5</sup>.

1 Assistant Professor .2,3,4,5 -Students.

Department Of Computer Science And Engineering, Sri Vasavi Institute of Engineering And  
Technology, Nandamuru, A.P, India.

## ABSTRACT:

Now a days, Automation Bots are using in many industries in many fields. A bot is a software application that is programmed to do certain tasks. Bots are automated, which means they run according to their instructions without a human user needing to manually start them up every time. Bots often imitate or replace a human user's behavior. Typically, they do repetitive tasks, and they can do them much faster than human users could.

A bot can be used for many services which is used for efficient purposes and do the work in less and simple, fast manner .Bots are using in many applications like Flipkart ,Amazon, Google etc to develop their services as long as the customer needs .For many purposes bots are using from that we are developing a bot which is using with Voice commands and it is based on the Artificial Intelligence and Machine Learning . In my Project, bot can learn from the past things what we are talking with bot in recent times it will remember all the things and gives the voice according to the questions we are given to the bot .It will store the whole conversations in a text file used for the next conversations and we can manipulate the brain of the AI according to our needs. We can fix the bot mind.In this main feature is that can respond to our own language and replies in English Language.

**KEYWORDS:** Automation bots, machine learning, artificial intelligence, voice commands.

## I.INTRODUCTION

AI voice assistant, also known as a virtual or digital assistant, is a device that uses voice recognition technology, natural language processing, and Artificial Intelligence (AI) to respond to people. Through technology, the device aggregates user messages, breaks them down, rates them, and gives meaningful feedback in return. Artificial intelligence can bring real conversations.

Virtual assistants, understand natural language voice commands and performs tasks for users. These tasks, previously performed by a personal assistant or secretary, include dictation, reading text messages or exchanging email messages aloud, schedule appointments for end users.

The AI assistant can also perform other activities, such as sending messages, answering phone calls, and getting

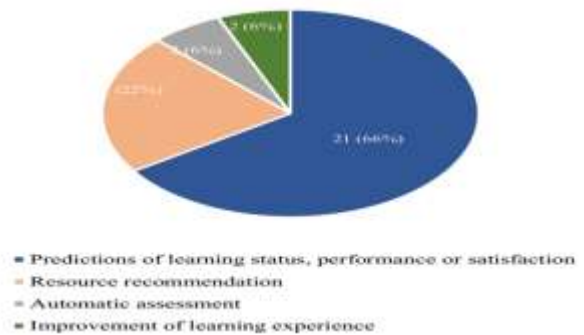
directions. It also helps to read news and weather updates, open Google, You Tube, Stack Overflow, etc. , answer any questions, web scraping, play mu-sic, etc. Although this definition emphasizes the digital style of a virtual assistant, the term virtual assistant or virtual personal assistant is additionally unremarkably wont to describe contract employees United Nations agency work from home and perform body tasks unremarkably performed by executives, assistant or secretary. Digital assistants can also be compared with other form of consumer-facing AI programming known as responsive advisors. Sensible adviser programs are topic-oriented, whereas virtual assistants are task-oriented. "Virtual assistants are typically cloud-based programs that require internet-connected devices and/or applications to function". The technologies that power virtual assistants

## II.LITERATURE SURVEY

**Generalization** The below mentioned pie chart shows the analysis of virtual assistants in context to education as well as purpose of this work with a total of papers from 13 countries. The highest contribution was made by country England with most number of papers (3), followed by Russia and Switzerland (2 papers each). The remaining countries, namely Singapore, Pakistan, Canada, India, France, Bulgaria, Saudi Arabia and Germany are also mentioned with 1 paper each

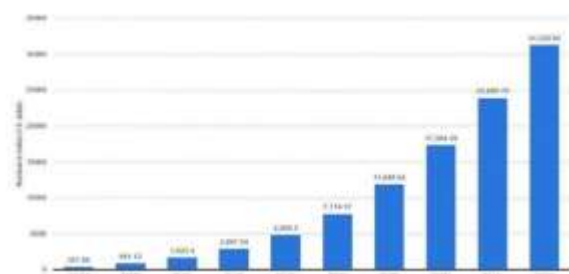
**Pie Chart** The below displayed bar graph shows that growth is continuous in research papers since 2000, except the year 2010 (Figure 2.2). So this is indicating that this field of research is progressive in a contiguous manner.

require vast amounts of knowledge, powering the platforms, as well as machine learning, language communication processes, and speech recognition arena. There are dedicated devices to provide virtual assistance. The most stylish on the market from Amazon, Google and Microsoft having Alexa, Google Siri and Cortana as AI voice assistants respectively given by each company. AI voice assistants often perform simple tasks for end users, such as adding tasks to the calendar; provide information that can usually be searched in an Internet browser; or control and check the health of sensitive devices in the home, send emails, setting up of alarms, getting weather reports, can give your location, perform some basic mathematical calculations, check news, start the music, and open different websites like stack overflow, you tube, Facebook etc.



**Fig1: pie chart**

**Revenues from the artificial intelligence for enterprise applications market worldwide, from 2016 to 2025 (in million U.S. dollars)**



**Fig 2: Revenue chart**

AI technologies appear to be extensively adopted, folks don't use them in some cases. Technology adoption has been studied for several years, and there is a square measure, several general models, within the literature describing it. However, having a lot of made-to-order models for rising technologies upon their options appears necessary. during this study, we have a tendency to develop an abstract model involving a replacement system quality construct, i.e., interaction quality, that we have a tendency to believe will higher describe the adoption of AI-based technologies.[5] • Artificial Intelligence programs have currently become capable of difficult humans by providing professional Systems, Neural Networks (NN), Natural Language Processing (NLP), and Speech Recognition. Computer science brings a bright future for various technical inventions in various fields. This review paper shows the final thought of computer science, and therefore the use of speech recognition, and gifts the impact of computer.

- The project aims to develop a non-public assistant for Computers (computer Personal Assistant). It provides an easy interface for finishing a selection of tasks by using bound well-defined commands. Users will move with the assistant through voice commands. As a non-public assistant, it assists the end- user with regular activities sort as general human spoken communication, looking out queries, reading the most recent news, translating words, live weather, and causation mail through voice. The software package uses a device's electro-acoustic transducer to receive voice requests whereas the output takes place at

the system's speaker."The virtual worlds offer many resources to engage their users (named avatars) like freedom of movement, teleport yourself to other locals, communication with other inhabitants (both text and voice messages), capacity to create, modify and destroy objects and the possibility of programming behaviors to these objects via scripts". The world is surplus of the resources for excelling in different fields but they just require some ways for communication. [10] • This article introduces virtual embedded voice assistants including gTTS, and ad-vanced Python-based technology in custom assistant development. It integrates features of AIML and Google's industry-leading platform for text-to-speech conversion, and thus human voices are included in the gTTS library. This is often the result of applying the Python's pytttsx dynamic base that is considered wise in the contiguous phases of gTTS and AIML, facilitating the establishment of noisy dialogues that are worth attention between the assistant and thus the user.[7] The below survey tab.

Table 2.1: Survey Table

S.No	Project	Technologies	Result	Issues
1.	Voice Assistant using python	Voice activation, automatic speech recognition, dialog management	Design and implementation of digital assistance	Absence of additional or multiple features
2.	AI based voice assistant	Python 2.7, Spider, gym, machine learning	A modern model with some advance features established	Similar with basic prototype and lacks multidimensionality
3.	An interpretation of AIML with integration of gTTS and Python	gTTS(Google text to speech), AIML(Artificial Intelligence Markup Language)	Integration of gTTS, AIML	Dependency on a particular platform
4.	Interoperability in virtual world	WWW(World wide web) services, HTTP, XML	Virtual world's communication, real world to virtual world (RV)	Less vulnerable to modern operating systems
5.	Natural language understanding	Artificial Intelligence, Natural language processing	Understanding of natural language processing, grammar processing	Only developing the understanding of NLP, difficult to implement
6.	Chatbot using recommender system	Python, chatterbot library, list trainer	Developing basic Chatbot system	Dedicated to a particular feature only
7.	AI Chatbot in python	Py, NumPy, tensorflow, random	Automated communication system developed	Limited to certain queries and conversation

### III.PROPOSED SYSTEM

The voice assistant initiates voice mode and prompts the user to provide input in voice/text format for best results from the voice assistant. As this program can also be controlled with your phone with help of an application 'WO-MIC', it just turns any android phone into a wireless microphone and helps in the reduction of unwanted noise in the environment. Using this application, which is Wikipedia's search engine, users can contact the wizard and the wizard will retrieve the data from the internet. The results are displayed in the console window in audible format, up to a limited number of lines.

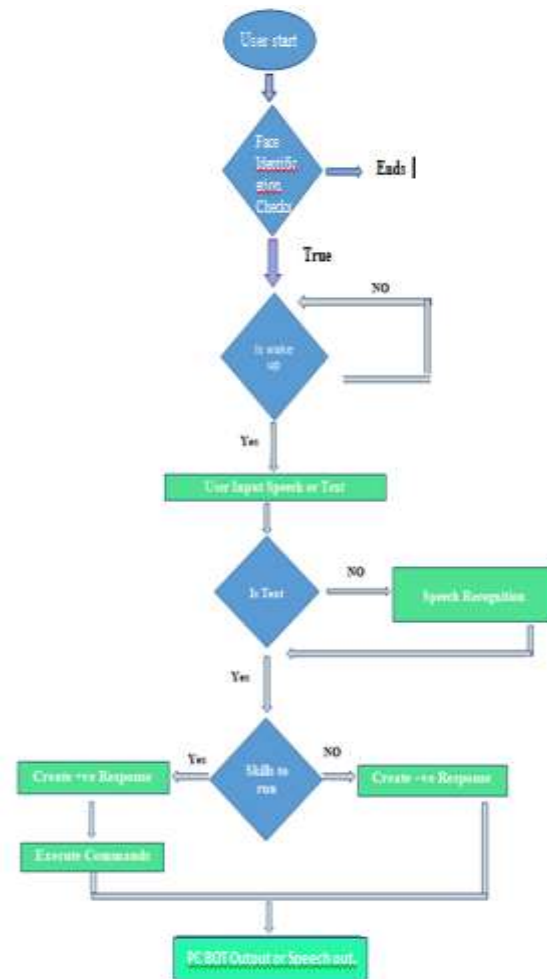
- Getting Current News about his/her motherland, about world, about technologies, about sports or about entertainment of the industry and much more, the user can easily get the news just by giving voice input to assistant to open news so it will open new tab and it can also fetch the data from the websites and return it to the console and read out for user without any labor.
- Weather Forecast, through this feature users can see the weather forecast for any location. In addition, the temperature and humidity of Kelvin will return the weather.
- Open Applications like , YouTube, google search engine , launching websites , system applications with the help of web browser python library and os for opening system applications(like, code editor, notepad,chrome,etc.)
- Close Applications, the application work perfectly by providing

a command 'TASKKILL/ F/im file.exe'. The assistant close that application asked to close.

- Automation, the application performs automation for YouTube and any search engine with the help of keyboard python library. The user just need to give input and the assistant will perform the automation ask.
- Voice Assistant can even repeat the user's words by take Command function and speak function.
- WhatsApp Messages, the application work by taking mobile number of the receiver or the name of the receiver, message to send , time when to send as a query. As the result , voice assistant will send the message and inform you. This is done with help of pywhatkit python library. And the history of messages will be saved in pywhatkit database file .
- Checking Internet Speed, the application is done with the help of speedtest python library by which assistant will check and return the result on the console.
- Checking my location, this feature allows users to view their current location or find directions to any location.
- Listening to music, the voice assistant plays the music requested by the user, either from the user's system or through an online search, without the user having to do it.

- PC BOT translator, this feature translates the user's original text input into the desired language. Over forty human languages are stored in the dictionary.
- Audiobooks, the application is very attractive as the voice assistant will open and read the book in your favourite language for the user to understand the book with the help of pypdf python library.
- The Assistant create a note to save the user's important data for future use.
- Sending Mails, this feature allows users to send an email to someone whose contacts include an email address. It then sends the successful execution of the task back to the user via the Hearing Assistant.
- TimeTable Notification, the voice assistant will remind you the work according to the user's time table schedule and as a result it also give notification with the help of notify python library .
- The Voice Assistant can answer any query with the help of Open AI python library and Open AI algorithm,
- A setting alarm is a basic function of any device, this allows the user to set the alarm to a specific time.
- Chatbot, this feature communicates with the user on a case-by-case basis. It also works whenever the user provides voice input to the assistant and the user receives the output in the voice response of the voice assistant ChatBot.

- Screenshot, this feature allows the user to take a screenshot of the current window or photo or current file and ask the user for the name of the file to save in the required file folder on the system for later viewing.
- Calculations, this function performs an arithmetic calculation with a user's voice command and produces an output that is a calculated solution through a voice assistant.



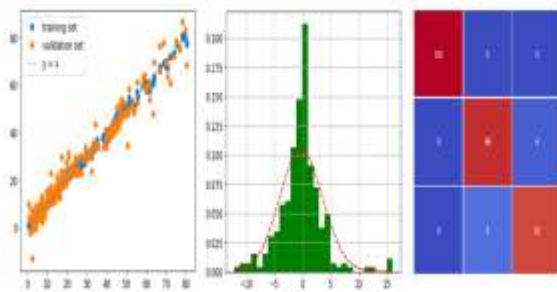
**Fig 3: system architecture**



#### IV. GRAPHS AND RESULTS

PCBOT will automatically calculate errors or scores, draw parity plots or confusion matrices and show error statistics, histograms and classification reports

PCBOT will automatically saves the database with the original and predicted results so the user can check the error case by case.



**Fig4: Results**

#### V.CONCLUSION

We are developed a virtual voice assistant automation which is helpful for a human or user in many ways like multitasking, heavy work in efficient and simple manner .And it is also useful for business purpose also to make the interactions easy and simple. It will work through commands which we are injected to a bot while building the software. it is also having safety and secure it scans the person then it allows the person to use the pc through commands .

#### VI.REFERENCES

[1] Pedregosa, F., et al. (2011), Scikit-Learn: Machine learning in Python, <https://scikit-learn.org/stable>

[2] Chollet, F. (2015), Keras: Deep Learning Library for Theano and TensorFlow, <https://keras.io/>

[3] Kuhn, M., et al. (2008), Caret package, <https://CRAN.R-project.org/package=caret>

[4] Pak, M. et al. (2017), Scikit-Optimize : Sequential model-based optimization in Python, <https://scikit-optimize.github.io/stable/>

[5] Iwanaga, T., et al. (2022), SALib - Sensitivity Analysis Library in Python, <https://salib.readthedocs.io/en/latest/>

[6] Lundberg, S. (2018), SHAP, <https://shap.readthedocs.io/en/latest/index.html>

[7] Simonyan, K., Zisserman, A. (2014), Very Deep Convolutional Networks for Large-Scale Image Recognition, <https://arxiv.org/abs/1409.1556>

[8] He, K., et al. (2015), Deep Residual Learning for Image Recognition, <https://arxiv.org/abs/1512.03385>

[9] Szegedy, C., et al. (2014), Going deeper with convolutions, <https://arxiv.org/pdf/1409.4842v1.pdf>

[10] Macqueron, C. (2022), Machine Learning : The Hunt for Performance, [https://www.researchgate.net/publication/362177565\\_Machine\\_Learning\\_The\\_Hunt\\_for\\_Performance](https://www.researchgate.net/publication/362177565_Machine_Learning_The_Hunt_for_Performance)