



# Virtual Assisatant Jordon using Artificial Intelligence

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**Abstract** — Artificial Intelligence is now a rapidly growing sector which will emphasize the productivity of man according to their need. So, this is our virtual assistant where we implement a small portion of AI to make our daily life more enjoyable and also be more productive. Our virtual not only able to recognize the voice of its owner but also it can perform all the given information by its owner. In past years we have no sort of devices or things to communicate with the AI devices for that reason we need to implement some coding to a chip or specifically into an integrated circuit which has a less amount of memory and can't able to perform all the algorithms by its own so we make an AI algorithm using python which can able to recognize as simple as a human can understand others language in their mother tongues. Also we are in testing of the algorithm to make an automatic robotic toy car which have the facility of the virtual assistant and the user of that car can able give it any sort of instructions on how to perform any operations simply into there mother tongues also they shouldn't use English also otherwise they can use google translate tool to make the output in their mother tongue.

**Keywords** — Artificial Intelligences, AI, algorithm, python, Virtual Assistant, language, mother tongue

## I. INTRODUCTION

An intelligent virtual assistant (IVA) or intelligent personal assistant (IPA) is a software agent that can perform tasks or services for an individual based on commands or questions. The term "chatbot" is sometimes used to refer to virtual assistants generally or specifically accessed by online chat. In some cases, online chat programs are exclusively for entertainment purposes. Some virtual assistants are able to interpret human speech and respond via synthesized voices. Users can ask their assistants questions, control home automation devices and media playback via voice, and manage other basic tasks such as email, to-do lists, and calendars with verbal commands. A similar concept, however with differences, lays under the dialogue systems [1].

As of 2017, the capabilities and usage of virtual assistants are expanding rapidly, with new products entering the market and a strong emphasis on both email and voice user interfaces. Apple and Google have large installed bases of users on smartphones. Microsoft has a large installed base of Windows-based personal computers, smartphones and smart speakers. Amazon has a large install base for smart speakers.

Conversica has over 100 million engagements via its email and SMS interface intelligent virtual assistants for business.

Now the Virtual Assistant does not refer only to a machine but a person whose primary job is to help his employer to do a specific online job virtually. Most of time this person is residing in another part of the world.

## II. FEATURES

### A. Back end Workload

Virtual assistants essentially help in back-end tasks. While your emails, planners, phone calls, ledgers, data entry records, and all other non-essential tasks are being managed, you can focus on working with clients, finding ways of boosting sales, managing growth, and improving your business model, etc. With a virtual assistant to boot, your back-end workload will not be compromised upon and you will have lesser things to worry about.

### B. Efficient Management

Since you have more time to spend on essential tasks, it becomes easier to develop your prowess in managing business critical activities. A virtual assistant allows you to develop the skills necessary for taking your business to the next level, and the more time you give to attending to clients and business growth, the more expertise you will be having on your hands. The support system provided by a virtual assistant gives you the additional advantage to focus on high-end tasks.

### C. More Organization

Managing small administrative tasks can be a daunting job. It can be a hassle during seasonal peaks. Having things organized and arranged for you solves various issues and save the time which you would otherwise spend rummaging through unimportant back-end tasks. A virtual assistant can clear out that clutter for you and organize your planning and schedules. It can be a lifesaver in times of crazy workload management.

## III. PROBLEMSTATEMENT

Artificial Intelligence personal assistants have become plentiful over the last few years. Applications such as Siri,

Bixby, Ok Google and Cortana make mobile device users' daily routines that much easier. You may be asking yourself how these functions. Well, the assistants receive external data (such as movement, voice, light, GPS readings, visually defined markers, etc.) via the hardware's sensors for further processing - and take it from there to function accordingly. Not too long ago, building an AI assistant was a small component of developers' capacities; however, nowadays, it is quite a realistic objective even for novice programmers. To create a simple personal AI assistant, one simply needs dedicated software and around an hour of working time. It would take much more time, though, to create something more advanced and conceptually innovative. Nonetheless, well thought-out concepts can result in a great base for a profitable startup. Let us consider the six most renowned applications based on artificial intelligence concepts that can help create your virtual AI assistant app.

#### IV. PRODUCT LAYOUT

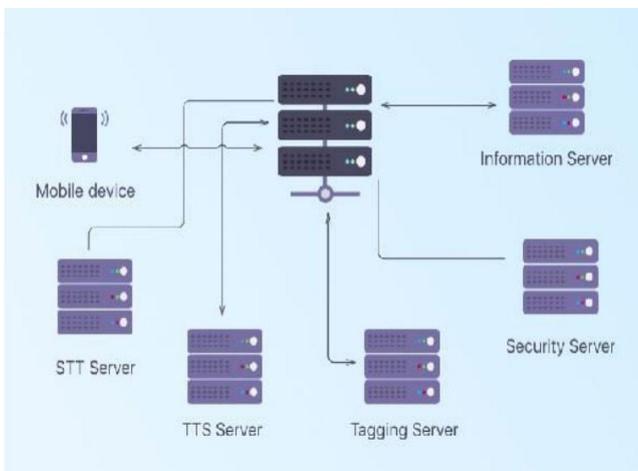


Fig: 1 Mobile voice assistant's architecture

The general operating principle of artificial intelligence assistants is the ability to make personal decisions based on incoming data. The software has to include an advanced set of tools for processing received data, in order to make proper individual choices. Artificial neural networks were invented to help develop the discussed software. Such networks imitate the human brain's ability to remember, to help the assistant recognize and classify data and customize predicting mechanisms based on thorough analysis. The memory process is executed deductively, i.e. topdown: first, the app analyzes several variants of outcome; then, it remembers the variants applied by a human (i.e. the system remembers proper answers to the question "How are you?" such as "I'm fine", "Not very well" etc., and ignores answers like "Yes", "No" and others) and "selfeducates" to be able to generate situation-based algorithms later. It is not necessary to manually enter information into the app to build your own personal artificial intelligence assistant. API software was developed for that, and the application programming interface aids the apps in the recognition of faces, speech, documents and other external factors. There are a number of APIs on the market, most popular of which are api.ai, Wit.ai, Melissa, Clarifai, Tensorflow, Amazon AI, IBM Watson; with less widespread options including Cogito, DataSift,

iSpeech, Microsoft Project Oxford, Mozscape and OpenCalais. Let us examine some of these [2].

#### V. PRODUCT DESCRIPTION

If we explain the functional details of the virtual assistant then it can be further more categorize in some below sub points –

- 1) **Voice/speech to text (STT):-** This is the process of converting speech signal into digital data (e.g., text data). The voice may come as a file or a stream. We can use CMU Sphinx for its processing.
- 2) **Text to speech (TTS):-** This is the opposite process that translates text / images in a human speech. It is very useful when, for instance, a user wants to hear the correct pronunciation of a foreign word.
- 3) **Intelligent tagging and decision making:-** Intelligent tagging and decision making serve for interpreting the user's request. For example, the user may ask: 'What do I watch tonight?'. The technology will tag the top-rated movies and suggest you a few according to your interests. The Alchemy API may help us in the implementation of this task.
- 4) **Image recognition:-** Image recognition is an optional but very useful picture. Later, we can use it for developing multimodal speech recognition.
- 5) **Noise control:-** The noises from cars, electrical appliances, other people talking near us make the user's voice unclear. This technology will reduce or eliminate the background noise that prevents a correct voice recognition.
- 6) **Voice Biometrics:-** This is a very important option from the point of view of security. Thanks to this feature, the voice assistant may identify who is talking and whether it is necessary to respond. Thus, we may avoid a comic situation that happened to Siri and Amazon Alexa when they lowered the temperature in a house and even turned off someone's thermostat by hearing a relevant command from the TV speakers.
- 7) **Speech compression:-** With this mechanism, the client side of the applications will resize the voice data and send it to the server in a succinct format. It will provide a fast application performance without annoying delays.

- 8) **Voice interface:-** Voice interface is what the user hears and sees in return to his or her request. For the voice part, you will need to pick up the voice itself, set the rate of speech, the manner of speaking, etc. For the visual part, we will have to decide on the visual representation that a user is going to see on the screen. If reasonable, we can skip it at all. Voice and text data may be processed either on a server or directly within a device.

**VI. FLOWCHART FOR THE VIRTUAL ASSISTANT**

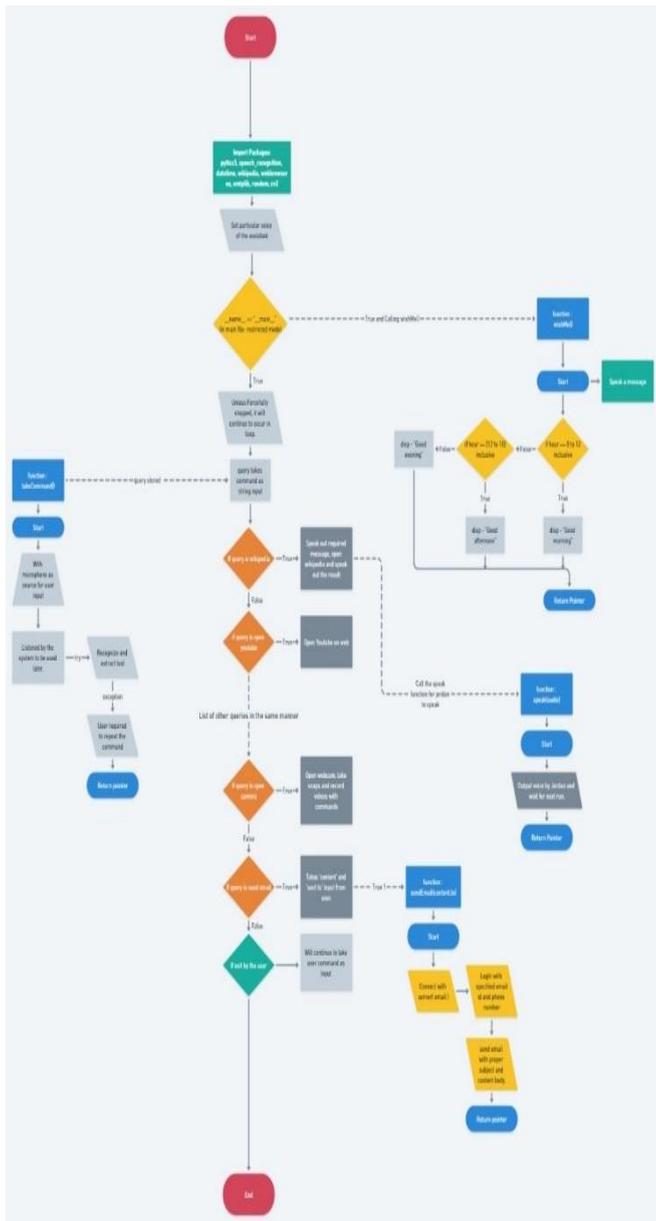


Fig: 2 Flowchart of the working of the virtual assistant in a very significant manner

Click to the link below to see the flowchart in a full fledged manner

<https://whimsical.com/assistant-jordan-RTGaXA4ZTSpBTRVDAA9CWB>

Click to the link below to see the source code of the virtual assistant that we developed

<https://drive.google.com/file/d/1DT98AVFJk3uAtceBCFHmF3fqIn15UilZ/view?usp=sharing>

**VII. SYSTEM ARCHITECTURE**

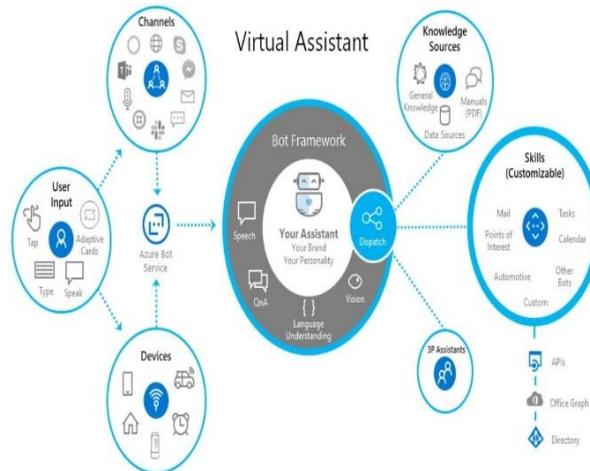


Fig: 3 Virtual Assistant Architecture

**VIII. FUTURE SCOPE**

In daily life we can see the use of ai everywhere to better our life and give us more efficiency than an human being because a human can create mistake but a machine can't so there are some future scopes deployed below -

- **Smarter Virtual Assistants**

Much of what virtual assistants do now are basic skills, such as retrieving data and basic computation. As natural language processing (NLP) continues to mature, virtual assistants will improve their comprehension and response capabilities, allowing for their use to become more widespread and complex. Also, as machine learning progresses,, we may see virtual assistants become smarter and begin to learn and predict customer needs.

- **Integration with IOT Devices**

Car speakers, smart home devices, and wearables are just a few examples where the virtual assistant is departing from its original hardware and making its way to in-context devices. These integrations ensure that virtual assistants can always be near their human and ready to support any need. It is expected that these integrations will continue at an accelerated pace throughout 2018.

- **Voice-control of Machines**

In the manufacturing world, many machines are starting to be operated through voice-control. In the office setting, it's possible that IT solutions could be run in the same fashion.

Soon, we could be joining meetings with a voice command, instead of dialing in the long meeting ID and password.

## **IX. ADVANTAGES & DISADVANTAGES**

### **❖ Advantages**

#### **➤ *Personal Assistant***

Have you ever tried to arrange a meeting with three other people with busy calendars? It's a time-consuming and frustrating job. Virtual assistant technology can extend to the personal assistant realm and handle these time consuming administrative tasks, leaving workers more time to focus on high-value tasks.

#### **➤ *Dictation and Translation***

Recording a brainstorming session or dictating a message is becoming possible thanks to natural language process (NLP) improvements. Even better, speak with a business associate in another country and a virtual assistant will translate the conversation in real-time.

#### **➤ *Partnerships***

Currently, there are several different companies developing virtual assistant technology, each targeting their own devices and hardware. For example, Microsoft's Cortana works best with Windows 10 devices, Amazon's Alexa works best with Amazon Devices, and Google Home uses its own platform. Consumers haven't be able to transition between multiple platforms easily. In 2017, the first unexpected partnership developed between Microsoft and Amazon to integrate Cortana and Alexa. Alexa leads the household market, while Cortana leads the business market. This partnership may be the first step to seamless, integrated experience for customers as they move through different environments. Imagine relaxing on your couch at the end of a long day when you realize you need to reschedule a work meeting. No problem! "Alexa, ask Cortana to move my 8AM meeting to 9AM". Done. [3]

### **❖ Disadvantages**

#### **➤ *Communication might be difficult***

.A lack of in-person meetings may make it difficult to work together, at least early on. This is particularly an issue if there are language barriers or if you are both operating in different time zones. In addition, technical issues and miscommunication can be challenging to manage if the virtual assistant does not have the right experience. In many ways, these challenges are not different from onboarding any new executive assistant, but in a virtual environment without the advantage of visual clues, it is more important than ever for an executive to specifically define their expectations and preferred working style [4].

#### **➤ *Added supervision may be needed***

Most virtual assistants can easily hit the ground running and meet deadlines as needed, as they have remote experience already. However, some virtual assistants may need additional supervision or management, especially in the beginning, to manage workload and understand what is expected of them, which may initially take up more of your time.

#### **➤ *Delegating work***

It can often be difficult to outsource work that you are so accustomed to doing yourself. Sometimes it's a matter of building trust and having confidence that the virtual executive assistant can complete the work. Or it can be a general difficulty in giving up control initially, especially when you do not know someone that well. This can be mitigated if you hire a virtual assistant with great qualifications and references, as it can give you peace of mind that you can trust their working style and quality.

## **X. ACKNOWLEDGMENT**

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## **XI. CONCLUSION**

The paper has discussed the current scenario of AI and the use of AI in our life for the betterment of our daily boring life into an amazing one. Here we develop a model that is nothing but a simple source code with a organized way of importing several modules. We develop it to do some daily tasks that we do everyday as we open our desktop/laptop in a very lucid manner. It can be further more developed for doing some specific tasks like when we make a robotic model then using this we can make a robotic bot that can sense any object around it and make move in any bidirectional plane and also can answer some questions like the temperature of current environment and the time according to the time zone also can manipulate a person as like a human being do but as for now we have a shortage of resources so can't build it in a full fledged manner but we will develop it and surely we will make it a better one.

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