

# Virtual Personal Assistants

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**Abstract-** Our lives have become faster and busier than ever! We communicate, interact and learn online. In this regard, virtual personal assistants (VPAs) play an important role in creating a frame with their facility service that provides a simple, fast and hassle-free connection over which the user can communicate through natural language processing (NLP). Can. In other words, VPA can facilitate human-machine interactions in which users can become active partners during online interactions. In this regard, this study explores VPA and identifies key concepts by examining existing literature. Some useful information can be obtained quickly through One of the things we cannot give in our incredibly fast lives is technology. We use technology to organize our own lives, receive instructional information, and interact with others. Virtual Personal Assistants (VPAs), which were developed on Artificial Intelligence technology, seem to be great helpers with many features that make life easier for users. More importantly, these assistants basically use natural language processing (NLP), to answer the queries which user has fired to the assistants via voice commands that can be considered as a real conversation similar to humans. Through the NLP used within these systems, people now feel like they are talking to real person only.

## I. INTRODUCTION

Numerous organizations have utilized spoken exchange frameworks to plan their discourse framework gadgets, for example, Microsoft's Cortana, Apple's Siri, Amazon Alexa, Google Assistant, Samsung Bixby, Jio Saarthi and Facebook's M.

These organizations utilized different strategies to plan and improve their correspondence frameworks. Contingent upon the application and its unpredictability, numerous procedures are utilized to structure VP-AS. For instance, Google has improved Google Assistant utilizing the Deep Neural Networks (DNN) technique that features the principle segments of correspondence frameworks and the new profound learning design utilized for these parts. Additionally, Microsoft utilized Microsoft Azure Machine Learning Studio alongside other Azure parts to improve the

Cortana correspondence framework. other than this. Amazon gives propelled profound learning usefulness of Automatic Speech Recognition (ASR) for changing over discourse to content, and Natural Language Comprehension (NLU) to perceive content plan, giving the designer exceptionally captivating client encounters and lifetime conversational Enables to make applications. talk. Also, Facebook has propelled its own associate Messenger M, which is attempting to consolidate AI calculations with applicable memory. Facebook is preparing Facebook.

## II. DEVELOPMENT OF VPA / CHATBOTS

A chatbot, also known as a smartbot, talkbot, chatbot, is a computer program that organizes conversations through auditory or textual methods. In this topic, we will discuss the history and development of chat bots.

Starting in 1950-

### A. TURING TEST (1950)

Alan Turing, who is the god of computers until now, is a known name in most technical circles, and is his name. In the last 60 years his name has been very popular in technical circles, because of his Turing test which is a popular thing in discussions. Around the machine and human intelligence. Alan Turing wrote a paper in 1950 in which he asked just one simple question: "Can machines think?" And presented his theory about the first concepts of AI. He was the man who invented the Turing test.

### B. ELIZA (1966)

Eliza was considered the first chatbot. Joseph Weizenbaum was the one who created Eliza in the MIT lab. At the time, Eliza's voice was able to convince 60 percent of users that they were talking to a human. However, it could not pass the Turing test. But it was one of the earliest examples of natural language processing (NLP).

*C. PARRY (1972)*

6 years after Eliza's innovation, PARRY turned out. The producer improved it than the past one. In an overview among proficient therapists, just a couple can recognize that Parry is certifiably not a human. Be that as it may, PARRY couldn't breeze through the Turing assessment.

*D. JABBERWACKY (1988)*

After the underlying achievement of such a significant number of talk bots, Jabberwacky was straightaway. The previous ones were totally message based chatbots. In any case, it was a voice. It can't think like as it were. The past ones were altogether message based Chatbots. Be that as it may, this one had a voice.

*E. DR. SBAITSO (1992)*

It was initially expected for dos-based frameworks. It was initially an analyst with an advanced voice. Be that as it may, it couldn't breeze through the Turing assessment.

*F. ELLIS (1995)*

Alice was a well-known online bot. It was exhibited in 1995. It was a language handling robot. In spite of the fact that it couldn't breeze through the Turing assessment, Ellis got a few different honours for being the most exceptional bot of his time.

*G. SMART CHILD (2001)*

It was a chatbot, which was particularly intended for SMS. Msn and different errand people offered it clever informing, intuitive talk.

*H. IBM WATSON (2006)*

IBM Watson came after some years. It was designed and developed to compete in a TV show "mermaid", where the former two champions of the show were defeated by Watson. Later, it got bigger and better.

**III. SIRI (2010)**

Siri is a shrewd individual partner presented by apple. It is a piece of iOS and can give a genuinely human reaction. Siri is very effective at looking through information from the web and mentioning electronic assistance. Siri has advanced with age. His knowledge has developed and his capacities have extended. He additionally needed to keep pace with Microsoft's Cortana, amazon's Alexa and google aide. Siri is intended to furnish a straightforward method to collaborate with your iPhone, iPad, iPod contact, Macintosh watch, home pod or Macintosh. You can ask him inquiries, disclose to him that he will give you something or he can give arrangements for his benefit, to liberate him from his hands. Siri approaches each other implicit application on your apple gadget - mail, contacts, messages, maps, and safari, etc - and needs to introduce information to call those applications or at whatever point it needs to by means of its database. Need

to look from at last, Siri accomplishes all the work for you. How to begin Siri? Siri can be actuated or propelled by saying "hello Siri" to your iPhone, air cases, associated Bluetooth headset, apple watch or home pod. You can likewise conjure Siri by utilizing the catch. On the off chance that you have a touch id (iPhone 6s or later) home catch, say what you need. For face id iPhone (iPhone x and more up to date), hold down the side force/wake button. On certain gadgets, you may need to sit tight for Siri before making your solicitation

- Nearby temples and events can be found with help of Siri. Just ask, "Find nearby hanuman temple" or "play songs?"

- Siri even can set a reminder. You just have to say, "Remind me to watch cricket at sharp 9 in the morning."

- You can also set timer just say, "Timer 45 seconds." As it is very good for running.

- Siri can check the climate with single word: "climate."

- Siri will refresh your status in the event that you state, "update my fb status: just observed the motion picture and adored it. He can tweet too.

- You can play music with assistance of Siri application. "Play the Weekend" will play mainstream The Weekend's tunes on your iOS gadget. You can likewise solicit to "play well known melodies of the 80s".

**IV. GOOGLNOW / GOOGLE ASSISTANT (2012)**

Google is now created by google for google mobile applications. It can perform various search-based tasks using a neural language. It has many human features and is quite helpful for smartphone users. It is a smart digital assistant which can understand your voice using NLP and respond accordingly. All of these will answer helpful questions and voice commands, but each has its own flavour.

What is Google assistant?

Google assistant carries some features like other assistants, Google's version provides more information about a particular question or search, you can also ask follow-up question. Google assistant is built-in feature that is comes pre-installed in the google pixel line of devices, android tv-streaming platform, and google home, smart home hub. It also normally powers most smartphones. If you are not familiar with google home, you can look for amazon echo and Alexa. Google assistant can also be accessed as a chat bot in the google allo messaging app. To launch the assistant, you can say "hey, google" or "ok google". All you usually need to do is open a conversation with an assistant for the first time; However, once the conversation is over, you have to say "ok google" or "hey google" again to start a new session. As we mentioned, you can actually interact with it, either through chat or voice. For example, you can ask for

restaurants near you, you can filter list to see only Rajasthani restaurants or you can also see timings of that restaurant. You can ask a lot from any browser like capital of a state, weather, schedules of trains and timings of a show. However, if you know that when you were not trying to access it, you still get the answer from google assistant, or it may use too much of your available resources. In cases like this, you can use these simple steps to shut down ok google.

#### Where to get the google assistant

To get the google assistant app you can go to google play and download it on your android 7.0 (nougat) or higher device. This is the simplest step for most people.

You may be able to get the assistant in some older version of androids or some devices which are on-pixel by rooting your device which can also include some devices like one plus google nexus and many more

#### V. ALEXA (2015)

New age chatbots are equipped for voice communication. There is an amazon chatbot that intrudes on the amazon reverberation gadget called Alexa. Also, used to collaborate with people and perform online assignments. Alexa is the amazon computerized voice partner. It very well may be seen on cell phones and amazon's line of reverberation items. Alexa was enlivened by the intelligent PC voice utilized in the first star trek TV arrangement. The expression "Alexa" was picked in light of the fact that "x" is all the more effectively unmistakable for voice acknowledgment, and the term is additionally a tribute to the well-known old library of Alexandria. Verbally associating with machines used to be the stuff of sci-fi and, in spite of the fact that we have not entered the period where smart machines have assumed responsibility for our lives, advanced voice help is rapidly getting one.

#### VI. CORTANA (2015)

In all the Microsoft gadgets there is a bot named Cortana which gets data from Bing and gives online administrations and is additionally useful for Windows investigating.

##### What can Cortana do?

Cortana have parcel of highlights. As a matter of course she goes about as your own news and climate channel, it's the main thing you'll take note. You can dispatch Cortana by clicking start button at that point click on search bar on any Cortana based Windows 10.

Cortana can go about as a reference book, chronological registry and word reference. For instance, on the off chance that you type or make statements like "another word for the insightful?" And you will see a rundown of equivalent words. You can likewise request a specific thing like "What is an ADS?" or on which date something occurred ("When ISRO first propelled their rocket?"), and so forth.

Cortana can likewise offer individual responses to questions, for example, "How's the climate?" Or "To what extent will it take me to go to office today?" However, she needs to know your area, and right now, ought to likewise be the place you work (You ought to permit in Cortana's settings to get to where it might be not the same as your contact list).

##### Instructions to speak with Cortana

There are numerous approaches to speak with Cortana. You can type your question or direction in the pursuit territory of the taskbar. Composing is a choice in the event that you don't submit a verbal request or if your PC doesn't have a mouthpiece. You'll get results as you type, which is very advantageous and makes it conceivable to quit composing and snap on any outcome that coordinates your inquiry right away. You can likewise pick this alternative on the off chance that you are in an uproarious situation.

In the event that you have a receiver introduced and chipping away at your PC or tablet, you can tap on the mouthpiece symbol by clicking inside the hunt window on the taskbar. This stands out for Cortana, and you will realize that you have a sign that she is tuning in.

At last, in settings, Cortana has an alternative to tune in to the verbal prompt "Hello, Cortana". On the off chance that you have empowered that setting you have to state, "Hello, Cortana" and it will be accessible. (This works simply like "Hello, Siri" takes a shot at an iPhone at last, in settings, Cortana has an alternative to tune in to the verbal prompt "Hello, Cortana". On the off chance that you have empowered that setting you have to state, "Hello, Cortana" and it will be accessible. (This works simply like "Hello, Siri" takes a shot at an iPhone.

#### VII. BIXBY (2017)

Artificial Intelligence (AI) is increasingly becoming part of everyday life with voice aids in many consumer home and mobile devices. One AI voice assistant that is available on many Samsung Android devices is Samsung's Bixby.

Bixby was initially featured in Samsung's Galaxy Note 8, S8 and S8 + smartphones, and can be added to Samsung smartphones that run Android 7.0 Nougat or higher.

##### What can Samsung Bixby do?

To fully use Bixby on a compatible device, you need Internet access and a Samsung account. Bixby can operate almost all functions of the device, including basic and advanced settings, as well as access to other local and Internet apps.

Bixby has four main features: Voice, Vision, Reminder, and Recommendation.

##### How to use Bixby Voice

Bixby can understand voice commands and respond back with its own voice. You can talk to Bixby using English or Korean languages. Voice interaction can be initiated by pressing the Bixby button on the left side of the compatible phone or saying "Hi Bixby". In addition to voice feedback, Bixby often displays a text version. You can also turn off Bixby's vocal responses - it will still perform verbally requested tasks. You can download, install, and use almost all of your device settings, initiate phone calls, send text messages, post something to Twitter or Facebook (include photos), get directions, weather or traffic. You can use Bixby voice to ask about, , even more. If a map or graph is available, along with weather or traffic, Bixby will also display it on the phone screen.

Bixby Voice allows the creation of verbal shortcuts (quick commands) for complex tasks. For example, instead of saying something like "Hi Bixby - open YouTube and play cat videos", you can create a quick command, such as "cats" and Bixby will do the rest.

#### How to use Bixby Vision

Using the phone's built-in camera in combination with the Gallery app and Internet connectivity, Bixby can:

- Identify: Take a picture of a milestone or location. Bixby will identify it and also provide a list of what's nearby. This comes in handy when trying to figure out what is in a shopping centre.
- Shop: Point the camera at a product and then touch the Bixby Vision icon to get more information on it and where you can buy it.
- Translation: Although you can communicate verbally with Bixby using only English or Korean, it can translate just about any language text. Use the camera to take pictures of text written in a specific language, and Bixby will display a text translation on your phone screen.
- Read QR Codes: Bixby can read QR Codes without downloading and installing a particular app. If the QR code is designed to initiate an action, Bixby will perform that task (such as visit a specific website or start an app).

#### About Bixby Recommendations

The more you use Bixby, the more it learns your routines and interests. Bixby can then tailor its apps and search more closely for what you like through its recommendation capability.

### VIII. MESSENGER BOTS (NEVER CAME) (2016)

Facebook presented Messenger Bots in 2016. This encourages clients to give speedy reactions and spares

bolster time. Ambassador bots have developed themselves after some time and now help clients with more knowledge.

Facebook m, the content based remote helper that pre-owned human specialists to prepare man-made reasoning frameworks, is finishing the human-helped some portion of the administration following more than two years. A human-increased adaptation of m, which was accessible by means of a bot on Facebook courier, opened up just to around 2,000 individuals living in California. The most recent day of menial helper will be January 19, Facebook stated, and contractual workers dealing with it will be extended to other employment opportunities at the organization. After designers discovered that Facebook shut down a computerized reasoning motor, ai had made its own one of a kind language that people can't comprehend. Analysts at the Facebook ai look into lab (reasonable) found that chatbots wandered from contents and were conveying in another dialect created without human info. This is astounding on the grounds that it is stunning - just as a look at both the awful and terrifying capability of ai. All things considered, we're not so much discussing whether Alexa is stressing your discussions, or whether Siri knows a lot about your schedule and area information. There is a major distinction between a voice-empowered advanced right hand and a computerized reasoning. These computerized right hand stages just commend web search and fundamental voice cooperation apparatuses.

### IX. THE FUTURE OF VOICE ASSISTANT

In the coming time the usage of voice assistant. The use of voice assistant is expected to increase in the coming time, the number of users will not be high. According to a survey in 2018, about 10–12 percent of people who do not own a smart speaker are planning to buy one. If this is true, the user base of smart speaker users will grow, meaning that a quarter of adults in the world will own smart speakers.

Voice assistants are always improving and learning using ML (machine learning). AI companies can improve what assistants can do by using data from existing systems. Finally, a voice assistant can be so smart that if you say that you are missing your mother, it will automatically book a ticket in your home town. It will use the existing data from your calendar to check which days you are free and come to the conclusion that you have the equivalent of booking a ticket in your home town to the missing mother.

### CONCLUSION

In this regard, IPA functions have been revised in the context of AI. However, the use of IPAs for 2nd language learning within NLP has led to several tasks related to IPAs, in particular to be focused. In this, it can be suggested that both tools and applications can be used as possible tools for language learning.