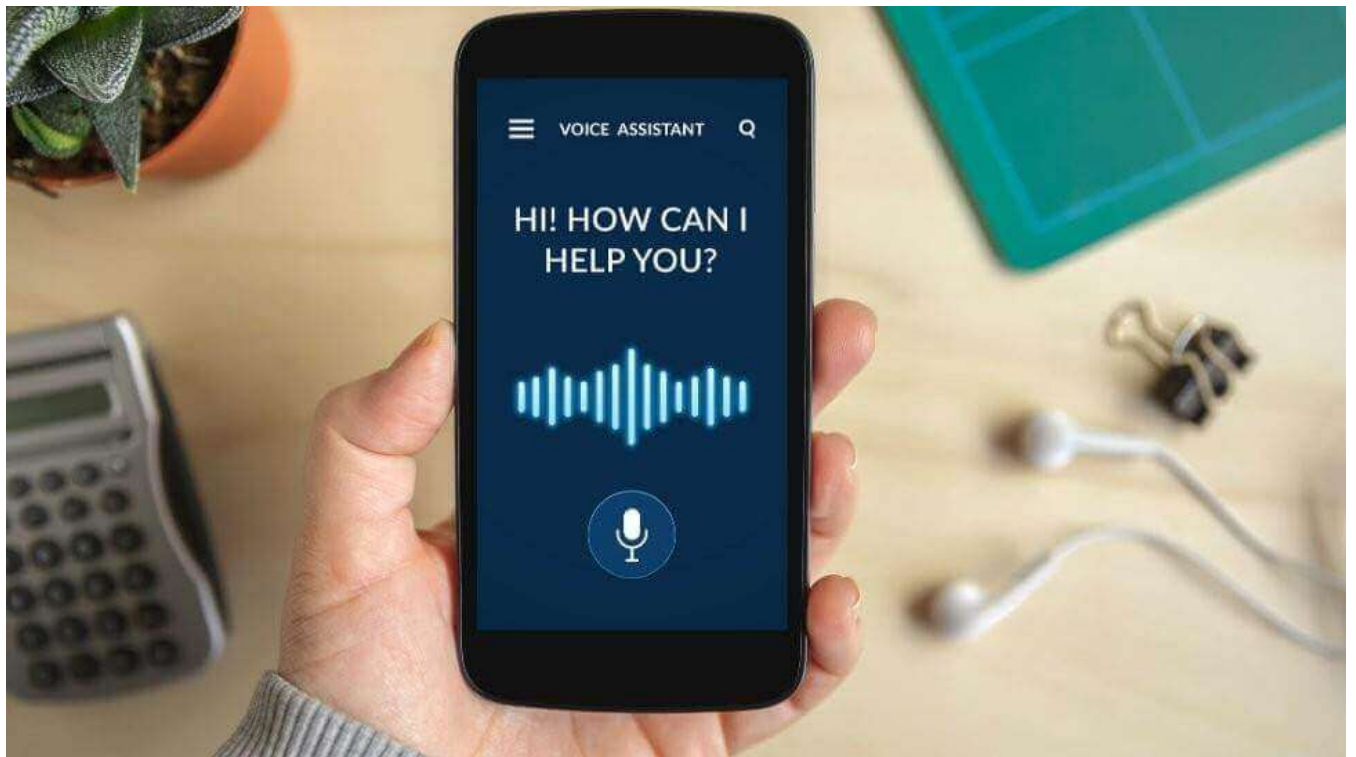


AI Voice Assistants: The Next Leap in Smart Technology

Ayesha Noman

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Health Tune



What are AI Voice Assistants?

AI Voice Assistants are basically virtual digital assistants which are capable of understanding human-language and can perform a variety of tasks using those instructions. From extracting required information from speeches to making phone calls AI Voice Assistants are now everywhere!

Why do we need AI Voice Assistants?

We need these powerful voice agents in order to make our lives easier and boost our productivity. Consider a scenario where an intern has been assigned two tasks one is to take notes during the meeting and then enter meeting outcomes into the CRM. Now instead of manually taking notes during the meeting an AI assistant can be utilized in order to extract key points during the meeting then it can be entered by that intern. Now this is just one simple example we can AI voice assistants in variety of other tasks.

How do AI Voice Assistants work?

In order to understand how AI voice agents work we can divide into 3 stage workflow.

1st Stage: Automatic Speech Recognition

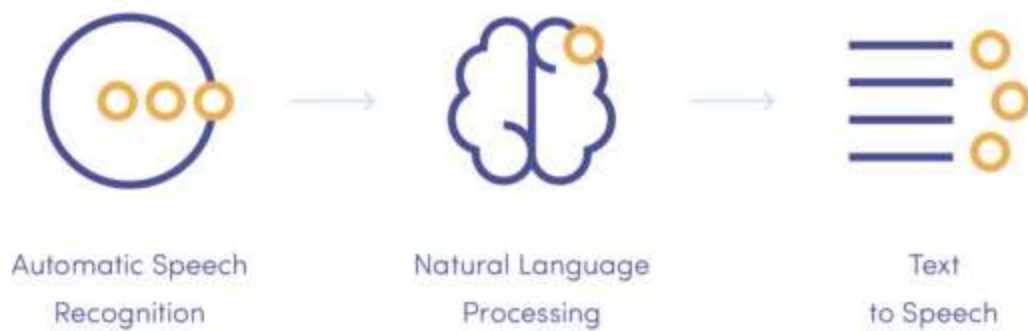
Automatic Speech Recognition (ASR) is a phenomenon which enables any device to recognize the speech and translate it into text. It converts the audio signal into digital form and clean it up. Afterwards it extract features from the audio that represent speech sounds and match sounds to words using ML models. Finally, it outputs the text by choosing most likely word sequence.

2nd Stage: Natural Language Processing (NLP)

Natural Language Processing (NLP) is a technology which interprets the meaning of the words along with their context and also text is removes noise like punctuations or stop words. Note that NLP is the backbone of many AI systems today.

3rd Stage: Text-to-Speech (TTS)

The text is converted in to phonemes (smallest unit of sound in speech). Think of it as translating the written word into a language that machines can understand and speak (Linguistic processing). The analyzed text is then interpreted by a linguistic processing component, which assigns the appropriate prosody, rhythm, and intonation to create a natural flow. Finally, an audible output is created by the voice synthesis component, which produces speech that closely resembles human speech.



Some Popular Voice Assistants

Siri

Siri is one most popular and first voice agent which was developed by Apple. Siri can do a lot of different things, like make phone calls, send text messages, take pictures, answer questions, and show forecasts for the weather. Additionally, Siri is utilized by devices that are compatible with Apple's home automation system, HomeKit.

Google Assistant

Just like Siri Google's voice assistant which was introduced in 2016, is also capable to perform similar tasks. Google Assistant can also be used to control smart devices compatible with Google Home.

Microsoft Cortana

Developed in 2014, Cortana is an assistant created mainly for the purpose of Windows 10 and Microsoft 365 products, making it possible for users to organise and manage their work more efficiently. Even though it is similar to Siri and Google Assistant in its abilities, Microsoft has been struggling to keep up with the big players, and as of 2021 Cortana is no longer supported for iOS and Android.

Application in Medical Field

By automating routine tasks, enhancing patient communication, and providing continuous support, AI voice agents are transforming healthcare. In addition to increasing operational efficiencies, these technologies ensure that patients receive individualized and timely care. As they continue to evolve, their impact on healthcare will expand, offering new opportunities to improve patient outcomes, reduce costs, and streamline healthcare delivery.

Healthcare providers who adopt AI-powered solutions AI voice agents will be better equipped to meet the demands of modern healthcare, providing high-quality care in an increasingly complex and dynamic environment. Some common applications are:

1. Ensuring 24/7 Availability and Immediate Support

We can use AI Voice Assistants to ensure availability and provide 24/7 support to patients. Consider a scenario where a patient, calls at 3 am to inquire about his stomach ulcer's condition, now of course instead of a doctor a voice assistant can assist the patient by understanding his symptoms and recommending appropriate medications or recommendations. If there are serious issues then they can be escalated to doctors.

2. Mental Health Support

AI voice agents can prove extremely helpful when dealing with mental health issues. AI voice assistants can offer support and motivation to patients dealing with mental issues like depression, anxiety, demotivation and many other serious issues like anger management, bipolar disorder etc.

3. Extracting important information from patients

This application of AI voice agents can be very useful in keeping record and tracking patient's progress and health. AI voice agents can detect symptoms, conditions and any new finding which can further assist in disease detection and proper medication.



Healthcare Use Cases for Artificial Intelligence Voice Agents

Here are some examples of how they are currently being used in healthcare settings to illustrate their practical application.

WorkBot

The WorkBot AI Voice Agent is a conversational AI solution for handling inbound and outbound calls, which is very helpful for interactions with healthcare providers. It uses natural language processing to understand patient inquiries, providing personalized support and guidance through voice or text-based conversations, and seamlessly integrates with existing healthcare systems.

The Symptom Checker from the Mayo Clinic

The Mayo Clinic has integrated an AI-powered symptom checker into its services. Patients can use this voice-based system to describe their symptoms, and an AI voice agent will help them answer a series of questions to figure out how bad their condition is. It provides advice on whether the patient should seek immediate care, schedule a doctor's appointment, or use its AI-powered voice assistance to manage their symptoms at home based on the responses.

Clinical Documentation with Suki AI

A voice assistant designed specifically for healthcare professionals is Suki AI. It records the doctor's dictation and enters it directly into the electronic health record (EHR) as structured data. The accuracy of patient records is increased, doctors save time, and burnout from documentation tasks is reduced.