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Smart Voice Assistance With ChatGPT

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ABSTRACT

Artificial intelligence is changing the world, especially the interaction between machines and humans. Learning and interpreting natural languages and responding have paved the way for many technologies and applications. The amalgam of machine learning, deep learning, and natural language processing helped Conversational Artificial Intelligence (AI) to change the face of Human-Computer Interaction (HCI). A conversational agent is an excellent example of conversational AI, which imitates the natural language. This article presents a sweeping overview of conversational agents that includes different techniques such as pattern-based, machine learning, and deep learning used to implement conversational agents. It also discusses the panorama of different tasks in conversational agents. This study also focuses on how conversational agents can simulate human behavior by adding emotions, sentiments, and affect to the context. With the advancements in recent trends and the rise in deep learning models, the authors review the deep learning techniques and various publicly available datasets used in conversational agents. This article unearths the research gaps in conversational agents and gives insights into future directions. Voice control is a major growing feature that change the way people can live. The voice assistant is commonly being used in smartphones and laptops. AI-based Voice assistants are the operating systems that can recognize human voice and respond via integrated voices. This voice assistant will gather the audio from the microphone and then convert that into text, later it is sent through GTTS (Google text to speech). GTTS engine will convert text into audio file in English language, then that audio is played using play sound package of python programming Language.

Keyword : - Artificial Intelligence, Machine Learning, Emotion in human computer interaction, Syntax feature extraction, AI- based voice assistance, Python.

1. INTRODUCTION

ChatGPT is a prototype artificial intelligence chatbot focused on usability and dialog. Developed by Open AI, the chatbot uses a large language model trained using reinforcement learning and based on the GPT-3.5 architecture. Open AI's Chat GPT is a large language model that was trained to generate human-like text based on the input it receives. It is based on the GPT-3 (Generative Pretrained Transformer model, which is one of the most advanced language

models available. Chat GPT can be used for a variety of natural language processing tasks, including generating human-like responses to questions and prompts, summarizing text, and translating between languages. Open AI's Whisper is an automatic speech recognition (ASR) system trained on 680,000 hours of multilingual and multitask supervised data collected from the web. The use of such a large and diverse dataset leads to improved robustness to accents, background noise and technical language. Moreover, it enables transcription in multiple languages, as well as translation from those languages into English. Open AI has open-sourced the models and inference code to serve as a foundation for building useful applications and for further research on robust speech processing. Aim here is to build smart voice assistant model with ChatGPT which can provide AI & ML Based smart assistance.

2. RELATED WORK

This humongous dataset was used to form a deep learning neural network [...] modeled after the human brain—which allowed ChatGPT to learn patterns and relationships in the text data [...] predicting what text should come next in any given sentence. ChatGPT works by attempting to understand your prompt and then spitting out strings of words that it predicts will best answer your question, based on the data it was trained on. Let's actually talk about that training. It's a process where the nascent AI is given some ground rules, and then it's either put in situations or given loads of data to work through in order to develop its own algorithms. GPT-3 was trained on roughly 500 billion "tokens," which allow its language models to more easily assign meaning and predict plausible follow-on text. Many words map to single tokens, though longer or more complex words often break down into multiple tokens. On average, tokens are roughly four characters long. OpenAI has stayed quiet about the inner workings of GPT-4, but we can safely assume it was trained on much the same dataset since it's even more powerful. ChatGPT is one of the shiniest new AI-powered tools, but the algorithms working in the background have actually been powering a whole range of apps and services since 2020. So to understand how ChatGPT works, we need to start by talking about the underlying language engine that powers it. The GPT in ChatGPT is mostly GPT-3, or the Generative Pre-trained Transformer 3, though GPT-4 is now available for ChatGPT Plus subscribers—and will probably become more widespread soon. The GPT models were developed by OpenAI (the company behind ChatGPT and the image generator DALL·E 2), but they power everything from Bing's recently released AI features to writing tools like Jasper and Copy.ai. In fact, most of the AI text generators available at the moment use GPT-3, and will likely offer GPT-4 as a next step.Build AI-powered workflows with OpenAI and Zapier Automate GPT. ChatGPT brought GPT-3 into the limelight because it made the process of interacting with an AI text generator simple and—most importantly—free to everyone. Plus, it's a chatbot, and people have loved a good chatbot since Smarter Child. While GPT-3 and GPT-4 are the most popular Large Language Models (LLMs) right now, over the next few years, there's likely to be a lot more competition. Google, for example, just unveiled Bard—its AI chatbot—which is powered by its own language engine called Language Model for Dialogue Applications (LaMDA). But for now, OpenAI's offering is the de facto industry standard. It's just the easiest tool for people to get their hands on.

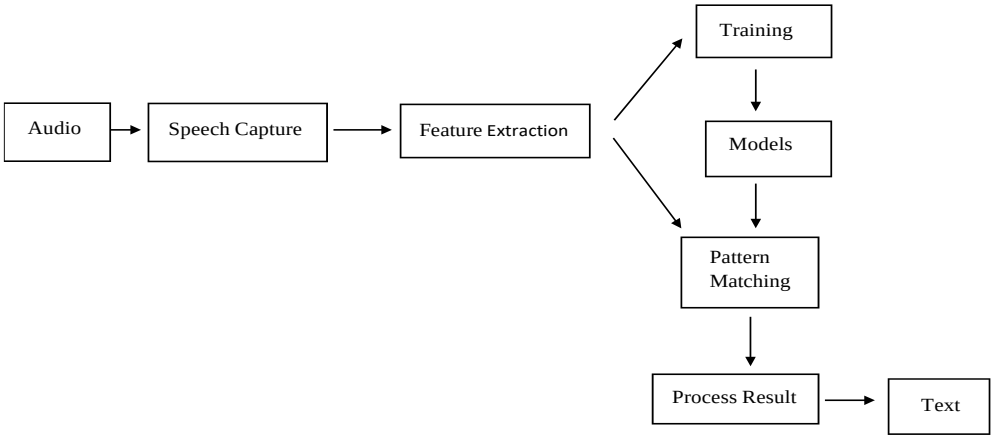

Fig -1: Block Diagram

3. SYSTEM DIAGRAM

Input query through an input audio system,open AI whisper model will basically understand what we speaking and convert that to text,once the conversion is done then it passed to chat got it understand text then give out the output in form of text as well as voice speech. All the data which were recorded get processed by Artificial Intelligence without any human interaction, then the speech waveforms data is transmitted to the decoder, where it finally transforms into text for further use like command.

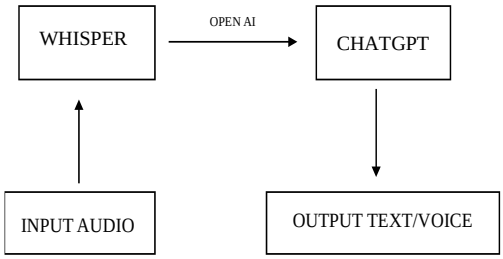

Fig -2: System Diagram

4. METHODOLOGY

Voice assistants are all written in programming languages, which listens the verbal commands and respond according to the user's requests. In this project we have used Python Programming language to build the AI-based voice assistant. A user can ask any question the voice assistance will respond with the result by answering the question. The Voice assistant waits for a pause to know that users have finished their request, then the voice assistant sends users request to its database to search for the request.

- The request asked by the user gets split into separate commands, so that our voice assistant can able to understand.
- Once within the commands list, our request is searched and compared with the other requests.

- The commands list then sends these commands back to the Voice assistant.
- Once the voice assistant receives those commands, then it knows what to do next.
- The voice assistant would even ask a question if the request is not clear enough to process it, in other words, to make sure it understands what we would like to receive.
- If it thinks, it understands enough to process it, the voice assistant will perform the task which the user has asked for.

5. CONCLUSIONS

In our project we have implemented many things compared to other assistants. Now a days it is very useful in human life because it is a hands-free application. It is a very simple application. As well as it is used in a business field also for example in laboratory, the person wears gloves and body suits for their safety purpose so it is difficult to type, through voice assistant they can get any information so that their work becomes easy. Voice assistants are useful in many fields such as education, daily life application, home appliances etc. and voice assistant is also useful for the illiterate people they can get any information just by saying to the assistant, luxury is available for people, thanks to AI based voice assistants. Voice assistant is developing more and more in daily life. Many companies of voice assistant trying to improve interaction and more features to the next level and many of the youth started using voice assistant in daily life and from many sources the result showing very good feedback. Compared to last 2 years voice assistants have been developed more and more.

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