Travel Assistant Chatbot Using GPT:4

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Abstract: - The primary purpose of this application is to inter act with users in a conversational manner, offering information, support, or assistance in real time. They can undertake a wide range of responsibilities, from answering frequently asked questions to dealing with customer service issues, making product suggestions, and even conducting transactions Chatbots can handle multiple languages, and they can be programmed to change their responses based on context and user interaction. Travel chatbots are AI-powered virtual assistants specifically designed to assist users with their travel-related queries and tasks. These chatbots utilize artificial intelligence and natural language processing techniques to understand user input and generate relevant responses in real time. Their main purpose is to streamline the travel planning process by providing instant information on flights, hotels, itineraries, visa requirements, and local attractions. Chatbot development using OpenAI involves utilizing the power of OpenAI's language models, such as GPT 3 and GPT-4, to create conversational agents. Based on the input they are given, OpenAI's language models, which have been trained on a massive quantity of text data, can produce responses that resemble those of humans. Here we demonstrate an application that is a travel assistant using the Open AI and the PyCharm IDE using the input data from the inbuilt MakeMyTrip Application [3]. This utilizes the conversational ability of Open AI API and extracts information from the user and then processes the information from the mmt application to give a very application interface between the customer and the application.

Key Words: - *Natural Language Processing, Prompt Engineering, Travel booking.*

I. INTRODUCTION

The term "conversational agents" refers to software programs that replicate spoken or written human speech to simulate a conversation or other contact with a real person. Here the challenge is to build a chatbot that has a creative mind of its own and yet needs to make changes by customizing only for the organization [4]. We need to provide an AI chatbot that can be interactive, customer service, and the best deals. Travel chatbots are AI-powered virtual assistants designed to assist users with their travel-related queries and tasks. These chatbots can provide real-time information on flight schedules, hotel availability, travel itineraries, visa requirements, and local attractions.

Additionally, they can offer recommendations for restaurants and activities based on user preferences and assist users in making travel, lodging, and rental vehicle arrangements. Travel chatbots streamline the booking process, provide instant support, and offer personalized recommendations, making travel planning more efficient and convenient. They enhance the user experience by providing 24/7 assistance, reducing wait times, and ensuring accurate and up-to-date information [5]. Additionally, travel chatbots can handle multiple languages, catering to a global audience and facilitating communication with users from different countries.

1.1 Problem statement

The problem statement describes the basic understanding of the application and the kind of work that needs to be done for the project The first Developing an application that provides a chatbot that is sentient and provides organization-specific objectives which can provide customer services. The second is utilizing a method where a person can upload a video and can provide the best deal for the places provided in the video.

1.2 Objective

The objective is used to build a basic road map to build a project:

- Building an Itinerary using user recommendation. This can be but provide a travel Vlog or any other video.
- Using this recommendation provides Airport and flight deals along with hotels and travel packages using the MakeMyTrip application.
- Scraping the details from the MakeMyTrip application and performing data analysis.
- Comparing different prizes and deals using different Itineraries and giving budget ratings using make my trip.

II. METHODOLOGY

2.1 Introduction to Openal API

ChatGPT models, such as GPT-3.5, are part of a family of language models developed by OpenAI. These models are based on the Transformer architecture, which provides processing sequential data, such as text [12].ChatGPT models are trained using a technique called unsupervised learning. They are exposed to big amount of text data from the internet, including books, articles, websites, and other sources. By analyzing and learning patterns from this vast dataset, the models acquire a rich understanding of language and its context. The primary goal of ChatGPT models is to generate human like text responses given a prompt or input from a user. They can understand and generate coherent and contextually appropriate responses [10]. These models can engage in con versation, answer questions, provide information, and even demonstrate some level of creativity

LATEST MODEL	DESCRIPTION	MAX TOKENS	TRAINING DATA
gpt-4	More capable than any GPT-3.5 model, able to do more complex tasks, and optimized for chat. Will be updated with our latest model iteration.	8,192 tokens	Up to Sep 2021
gpt-4-0314	Snapshot of gpt-4 from March 14th 2023. Unlike gpt-4, this model will not receive updates, and will only be supported for a three month period ending on June 14th 2023.	8,192 tokens	Up to Sep 2021
gpt-4-32k	Same capabilities as the base gpt-4 mode but with 4x the context length. Will be updated with our latest model iteration.	32,768 tokens	Up to Sep 2021
gpt-4-32k-0314	Snapshot of gpt-4-32 from March 14th 2023. Unlike gpt-4-32k, this model will not receive updates, and will only be supported for a three month period ending on June 14th 2023.	32,768 tokens	Up to Sep 2021

Fig.1. Different models of GPT -4

Prompt engineering refers to the design procedure and construction of effective prompts or instructions to guide language models in generating desired outputs. It involves carefully crafting the input provided to a language model to elicit the desired response or behaviour. Language models, such as GPT-3, are powerful but need specific instructions to produce desired outputs. Prompt engineering aims to build these instructions which guide the model's response generation and ensures it aligns with the intended purpose [5].

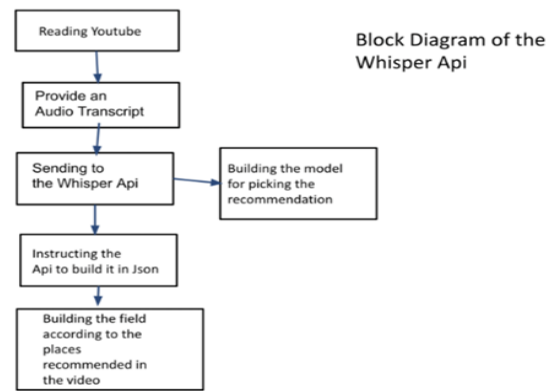Fig.2. Example for prompt engineering
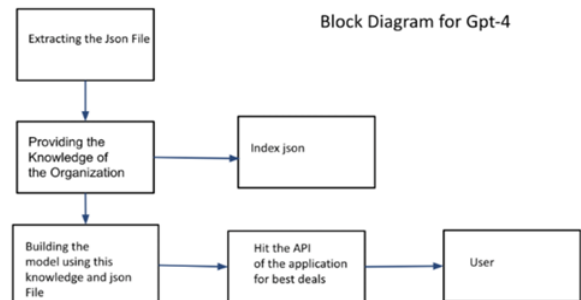

Fig.3. Block diagram of Whisper API

Fig.4. Block diagram for gpt-4

III. IMPLEMENTATION

3.1 Basic Implementation of Chatbot

These are steps to build the application

- First, we read the YouTube video which we have uploaded
- The audio transcript understands the video into the text to provide a list of the places
- Instructing the API to build it in Json to get the final result Json
- Building the model based on the places recommended in the video
- Extracting the JSON File, then providing the knowledge about the Company
- Building the model using this knowledge and JSON File
- Hit the API for the best deals

This is illustrated in the figure given below:

To implement a basic chatbot using OpenAI, you can leverage the OpenAI API and a programming language of your choice. Here's a step-by-step guide using Python:

- Set up OpenAI API: Open an account with OpenAI and get an API key. Run "pip install openai" to install the OpenAI Python library.
- Initialize OpenAI API: - Import the OpenAI library: 'import openai'. - Enter your API key: 'openai.apkey = 'YOURAPIKEY''.
- Create a function to interact with the chatbot: "'python def chatwithbot(userquery): prompt =" User:" + userquery +"ChatGPT:" response = openai.Completion. create(engine='davinci', prompt=prompt, maxtokens=50) chatbotreply = response.choices[0].text.strip() .split("ChatGPT:") return chatbotreply
- Interact with the chatbot: - Call the 'chatwithbot' function and provide a user query: "'python userinput =input("User: ") botresponse = chatwithbot(userinput) print("ChatGPT:", botresponse)

3.2 Adding whisper API recommendations

- Upload the video using the library video Transcript
- Generate a prompt using prompt Engineering
- Using openai. ChatCompletion. create generate the response using JSON

- Tell the preference using the JSON prompt below Chatbot development using OpenAI involves utilizing the power of OpenAI's language models, such as GPT-3 and GPT-4, to create conversational agents [7]. OpenAI's language models are trained on a vast amount of text data and can generate human-like responses based on the input they receive.

IV. CONCLUSION AND FUTURE ENHANCEMENTS

4.1 Conclusion

A chatbot can be applied to enhance customer experiences and streamline customer support processes [9]. Chatbots can provide round-the-clock customer support, allowing customers to get assistance at any time without the need for human agents. Provide basic information, and help with common issues, ensuring continuous support availability. Chatbots can handle frequently asked questions and provide instant responses [6]. By analysing customer inquiries and implementing Natural Language Processing (NLP) techniques, chatbots can understand customer queries and deliver relevant answers quickly, saving time for both customers and support agents. Chatbots can assist customers with placing orders, tracking shipments, and managing returns [8]. They can provide order status updates, and shipping details, and address customer concerns related to their purchases.

4.2 Future Enhancement

- Chatbots can assist customers in diagnosing common technical issues and provide step-by-step troubleshooting guidance. They can help customers troubleshoot software problems, connectivity issues, or setup procedures, offering instant assistance before involving human support agents [11].
- Chatbots can collect customer feedback and conduct surveys to gather valuable insights. They can engage customers in interactive conversations, ask for feedback on products or services, and analyze responses to improve business offerings.
- Chatbots can intelligently recommend complementary products or upgrades based.

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