AI BOT FOR INTERVIEW PREPARATION

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Abstract: In this paper, we propose an interactive AI chatbot which able to ask questions to a potential candidate additional questions in order to obtain a complete answer to a given question. Additionally, the proposed chatbot allows an interactive environment where candidates can also ask questions during the interview. The AI Interview Preparation Bot is designed to assist users in preparing for job interviews by providing a realistic and interactive interview experience. The application utilizes natural language processing to simulate interview scenarios, generating relevant questions based on industry standards and user-inputted preferences.

***Index Terms* - NLP, interactive AI chatbot, job interview.**

I. INTRODUCTION

The job interview process is a critical stage in career development, and individuals often seek effective ways to pre- pare for these high-stakes interactions. Traditional interview preparation methods may lack the personalized and interactivenature required to simulate real-world interview scenarios.This research focuses on addressing this gap by introducingan AI-driven interview preparation bot web application.

According to our knowledge, the chatbot based are: facing with two main limits, as follows:

1) the lack of inter-action with the candidate during the interview: the interviewquestions are predefined. When the candidate answers a question, the answer is saved and the chatbot asks the followingquestion regardless of candidate's answer. In order to more realistic interview, we propose an interaction between the chatbot and candidate.

2) the inability for the candidate toask questions during the interview: the proposed recruitmentchatbots do not allow the candidate to ask questions. Webelieve that giving the candidate this possibility is essential to make the interview becomes more close to a real interview.

To overcome these two limitations, we propose an interactivejob interview chatbot based on AI techniques. This chatbotis able to interact with the candidate in real-time allowingthe candidate to ask questions during the interview. Objective:The primary objective of this research is to develop a user-friendly web application that utilizes cutting-edge AI technologies to simulate realistic interview scenarios.
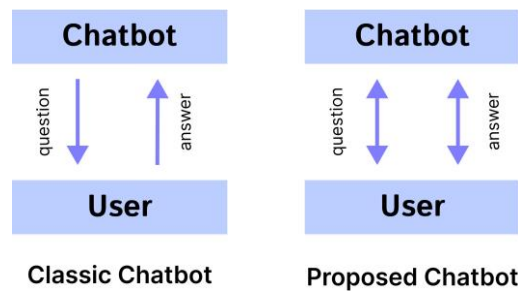
Fig.1 Classic chatbot Vs Proposed chatbot

By integratingChatGPT, a powerful language model developed by OpenAI,the application aims to provide users with a dynamic andresponsive conversation partner. Additionally, the Whisper API is employed to enhance the naturalness and fluency of the AI- generated responses, creating a more immersive experience for users. Fast API is utilized for efficient and scalable backend development, ensuring seamless communication between the frontend and the AI models.

II. PROPOSITION

We propose an interactive chatbot. This proposition outlines the development of an innovative AI-driven Interview Preparation Bot Web Application designed to assist users in refining their interview skills. Leveraging the capabilities of React for frontend development, ChatGPT API for natural language processing, Whisper API for realistic voice synthesis, and   Fast API for efficient backend services, this application not only provides simulated interview scenarios but also enables users to actively engage in dialogues with the bot, facilitating an interactive and personalized learning experience

III. SYSTEM ARCHITECTURE

A) FRONTEND ARCHITECTURE (READ WITH VITE):-

1) React Framework:- The frontend is developed using the React JavaScript library, known for its component-based architecture, whichfacilitates the creation of reusable UI elements.

2) Vite Framework:- Vite is employed as the build tool anddevelopment environment for the React app.

3) User Interface (UI):- The UI consists of components for user authentication, interview simulation, chat interface, andfeedback display. CSS frameworks like TailwindCSS or Styled Components may be used for styling.

4) State Management: React state management or a state management library (such as Redux) is utilized to managethe application state, ensuring efficient data flow between components.

5) API Integration:- Axios or Fetch API is employed for making asynchronous requests to the backend APIs. The fron- tend communicates with the backend to retrieve interview questions, send user responses, and receive AI-generated feedback.

B) Backend Architecture (Python with Fast API):-

i) Fast API, a modern, fast (high-performance), web frame-work for building APIs with Python 3.7+ is chosen for the backend. Fast API leverages type hints to enable automatic data validation and documentation generation.

ii) Whisper API: The Whisper ASR (Automatic Speech Recognition) API is integrated to enable **speech-to-text conversion**. This is beneficial for users who prefer verbal responses during interview simulations.

iii) ChatGPT API: The OpenAI ChatGPT API is used for natural language processing. It handles user input during the interview simulations and generates AI-driven responses. The backend manages the communication with the ChatGPT API, handling requests and responses.
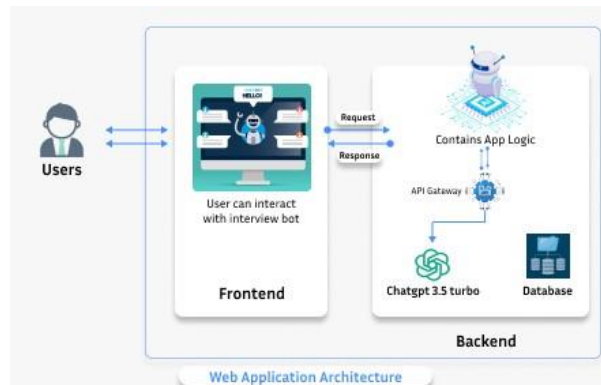

Fig 2 System Architecture

IV. USE CASE EXPLANATION

In our interactive chatbot application, candidates can engage in various interactions to enhance their interview preparation. The following are the key use cases:

A) Ask Question:- Candidates have the ability to ask questions to the chat-bot, seeking clarification on interview-related topics, industry-specific queries, or any other information relevant to the preparation

B) Answer Question :- The chatbot presents simulated interview questions to candidates, allowing them to practice and formulate responses. The candidate can articulate their answers, and the chatbot provides constructive feedback to help improve their responses

C) Refuse to Answer :- Candidates may encounter questions during the simulated interview that they prefer not to answer. The chatbot respects this choice, allowing candidates to practice politely refusing to answer questions while maintaining professionalism.

D) Accept Interview :- After a simulated interview, candidates have the option to accept the interview offer. This interaction simulates the process of accepting a job interview, providing a comprehensive learning experience for candidates. These use cases make the chatbot application a versatile tool for candidates to practice and refine their interview skills in a realistic and interactive environment.
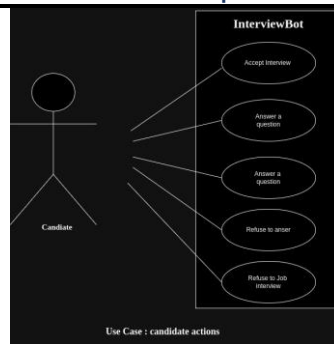
Fig.3 Candidate Use Case Diagram

V. CONCLUSION

In conclusion, the development and implementation of an AI interview preparation bot web application represent a significant leap forward in leveraging advanced technologies to enhance the interview preparation process. The integration of cutting-edge tools and frameworks, including React with the ChatGPT API, Whisper API, Fast API, and the React Vite framework, has resulted in a comprehensive and efficient solution that addresses the evolving needs of job seekers and interview candidates. The React framework, specifically the Vite framework, was chosen for the frontend development due to its efficiency in terms of fast development and performance optimization. The use of React allowed for the creation of a dynamic and responsive user interface, ensuring a seamless and engaging experience for the end-users. The Vite framework, with its quick development setup and efficient bundling, contributed to a faster-loading web application, enhancing the overall user experience.

On the backend, Python was selected as the programming language, known for its versatility and extensive libraries. The backend played a crucial role in managing user data, handling authentication, and facilitating communication with the ChatGPT API. The integration of the ChatGPT API, developed by OpenAI, was a key component of the AI interview preparation bot.

In summary, the AI interview preparation bot web application presented in this research paper represents a successful integration of modern technologies. This project not only demonstrates the feasibility of using AI in interview preparation but also highlights the importance of a user-centric approach in designing and refining such applications. As technology continues to advance, further enhancements and features can be explored to make AI interview preparation bots even more effective and accessible to a broader audience.

VI. REFERENCE

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