PREPWISE AI- Your AI Interview Agent

By Satya Shah

This AI agent helps you gain real-time experience with interviews. Simply upload your job description, resume, and select the appropriate round (HR, Technical, Managerial, General). AI will ask you 4-5 questions as per the round selected. Users can answer by writing in the text box or recording an answer(15 seconds for recording an answer).

The platform also offers a visual of the front camera and the voice AI agent to give a real feel of the interview experience. On completion of the interview, the user gets feedback and a score for each question answered.

-DEMO LINK(Please hear the voice agent carefully during the interviewing process. In the demo video I recorded, it is not properly audible. Keep the volume high during that time). The video is somewhat long because I have also added one other project that I created last month related. - [**LINK**]

-GitHub Link for the project – [LINK]

-NOTE- I wanted to deploy on Streamlit and share the project with you, but I was not able to do so because Streamlit's deployment environment does not support some of the libraries that I used in my project.

If you want to run the project in your environment, just clone my GitHub repo. Add a "**.env**" file with

OPENAI_API_KEY, =>(paid)

ELEVENLABS_API_KEY,=>(free)

ELEVENLABS_VOICE_ID=>(free)

-Download requirements.txt using " **pip install -r requirements.txt** ".

=>ATS RESUME TRACKER

-This is another project, the ATS resume tracker, which I created last month. You can try it out at my Hugging Face space. I have also included an explanation in the demo video.

Try this link for a demo of the project on my Hugging Face space, where I deployed it.

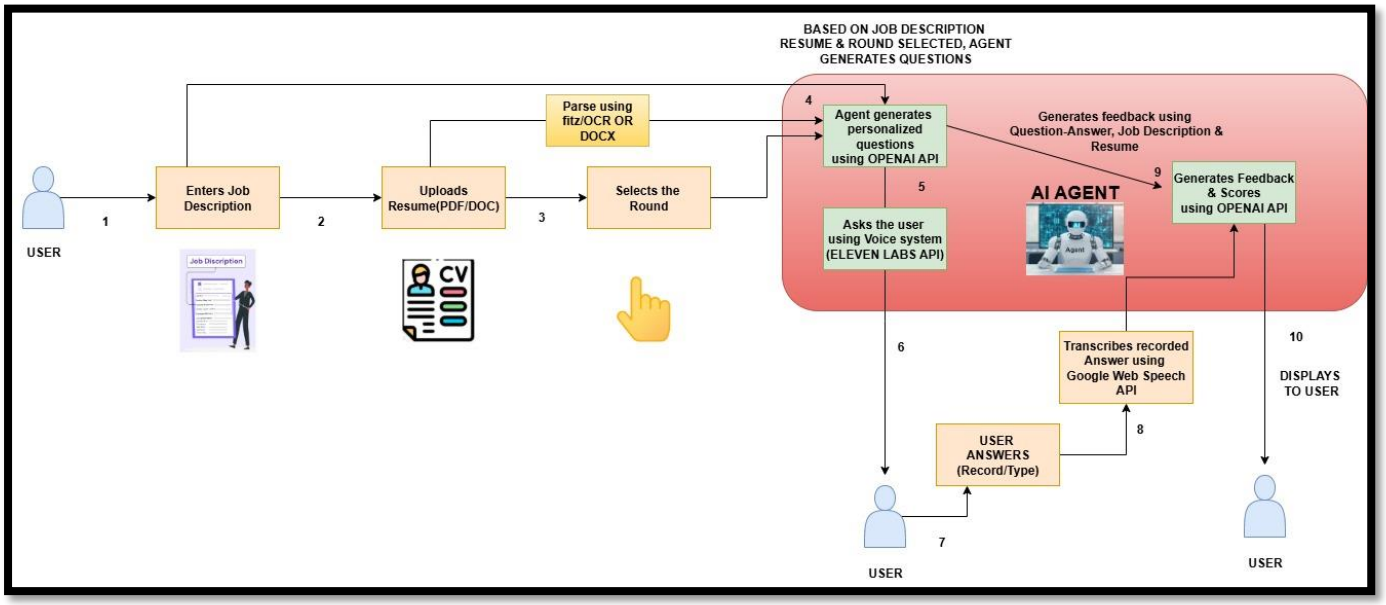
Please use "WHITE MODE" on Google browser for this project on desktop only- [link]

GitHub Link for the project- [link]

=>What does this platform offer?

- Role-specific question generation. Different question generation for practice.
- Supports PDF(even scanned) & Word file for resume.
- Personalized interview sessions based on the candidate's resume and job description.
- Voice-based interview agent.
- Front camera integration for a real interview feel.
- Real-time coaching/candidate feedback.

=>System Architecture



=>Steps:

1. The user enters a job description.

2. User uploads their resume (PDF or DOCX). It is parsed using pytesseract OCR/fitz for PDF & DOCX for Word files. The system parses the resume using OCR or file reading tools

3. The user selects the interview round.

4. Based on the Resume, Job description & round selected, the agent generates question.

5. The AI agent generates personalized questions using the job description, resume & the round selected (using the OpenAI API).

6. The AI agent asks questions using voice (Eleven Labs API).

7. User answers the questions (by typing or recording).

8. If recorded, the answer is transcribed using Google Web Speech API.

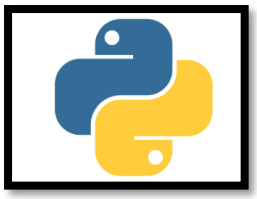
9. The AI agent generates feedback and scores using the OpenAI API.

10. Feedback and scores are displayed.

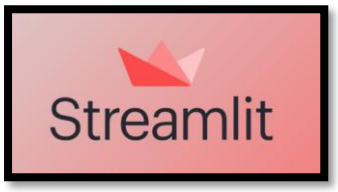
So this way, the user gets a personalized experience based on the resume and job description. This also answers the questions: input needed, AI functionalities in the architecture, and outcomes.

=>Techstacks and libraries used

Python- For Backend



Streamlit- For Frontend



OPENAI API (gpt-4.1-mini)- For LLM Service

ElevenLabs(eleven_multilingual_v2)- For giving voice

Pytesseract/fitz/docx- For parsing a resume

Google Web Speech API- For transcription (when user selects to record answer.)

=>Improvements & Future Scope

1) UI can be improved using REACT instead of Streamlit, with Flask/Fast API for routing. I used Streamlit because I am familiar with it and because of time constraints.

2) Voice transcription can be improved. Because when the user is recording, the speech-to-text transformation is not that accurate. That is why I have kept a text area for submitting an answer. This can be further improved with time.

3) We can also try to use different LLM models and use the best LLM model to generate the feedback.

4) Can also implement LangChain to generate responses instead of directly using the OpenAI API.

5) We can use emotion tone detection from voice(using Microsoft Azure speech SDK) and video(using OpenCV's facial recognition models). For example,

- **If the candidate seems nervous:**
→ AI speaks slower, adds supportive language.
Example: "No worries, take your time with this next question."

- **If the candidate sounds confident:**
→ AI speeds up, asks more challenging follow-ups.
Example: "Great answer. Let's try something a bit more advanced."

- **If the candidate seems disengaged:**
→ AI might prompt:
"Are you still there? If you'd like, we can pause and continue later."

6) We can also add an option that can be selected by the user to choose questions to be asked by AI.

7) For **testing**, to evaluate our AI's Interview output, we can

1. **Consistency checks**: We can compare answers to similar questions across multiple interviews to ensure consistency.
2. **Depth analysis**: Assessing the level of detail and insight provided in the answers.
3. **Hallucination checks**: By verifying that the AI is not generating fictional or unrelated information.
4. **Human evaluation**: Have human evaluators review and rate the interview output for accuracy, relevance, and overall quality.
5. **Automated metrics**: Use metrics such as precision, recall, and F1-score to evaluate the AI's performance.
6. **Comparison to human interviews**: Compare the AI's interview output to human-conducted interviews to assess its effectiveness.

7. **Error analysis**: Identify and analyze errors or inconsistencies in the AI's output to improve its performance.

8)How does my PREPWISE AI stand out from existing tools?

- **Smarter**: It provides more personalized and insightful feedback with a voice assistant to give a real feel.
- **Easier to deploy**: It is designed to be user-friendly and accessible, with a simple and intuitive interface that requires minimal setup and training. After making the frontend in React, we can easily deploy anywhere.
- **More comprehensive**: It assesses not only technical skills but also soft skills, personality traits, and cultural fit, providing a more holistic view of the candidate.