System Design: Assessli-Verse

A High-Performance AI Voice Interview Simulator

Hackathon Submission

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1. The Problem & The Opportunity

In today's competitive job market, candidates lack access to realistic, scalable, and objective interview practice. They often receive generic feedback or no feedback at all, leaving them unprepared for high-stakes conversations. For companies, this results in a high volume of underprepared candidates, wasting valuable interviewer time on initial screenings.

The opportunity is to create an AI-driven tool that serves as a personal interview coach, providing instant, actionable feedback on both technical substance and communication style, bridging the gap between preparation and performance.

2. Our Solution: Assessli-Verse

Assessli-Verse is a web-based conversational AI platform that simulates job interviews. It allows a user to select a target role (e.g., "Junior Python Developer"), engage in a realistic, real-time voice Q&A session with an AI interviewer, and receive a comprehensive performance report immediately after the conversation.

Key Features:

Role-Specific Interviews: Tailored questions for different job functions.

Dynamic Conversation: The AI asks insightful follow-up questions based on the user's specific responses,

mimicking a real interviewer.

High-Performance Voice Interaction: An optimized architecture ensures transcription and AI generation happen in seconds, not minutes, for a seamless user experience.

Dynamic, Formatted Reporting: The final report includes a quantitative star rating, a dynamic rating description, and a detailed qualitative analysis with structured feedback.

3. End-to-End Data Flow

A typical user interaction follows a clear request-response pattern:

1. The user records their voice answer on the Streamlit frontend.
2. The frontend sends the audio file in an HTTP POST request to the /process-answer endpoint on the FastAPI backend.
3. The backend sends the audio to the **Groq API** for fast transcription.
4. The resulting text is passed to the **local Llama 3 model** to generate the next question.
5. The new question text is passed to the **local pyttsx3 engine** for speech synthesis.
6. The backend returns the new audio file to the frontend.
7. The Streamlit UI updates to display the new audio player, ready for the next turn.

4. Conclusion

The Assessli-Verse project represents a well-researched product concept backed by a sound and high-performance architectural plan. We have the vision and the technical skills required to deliver a high-quality prototype that directly aligns with Assessli's mission.