AI Mock Interview Platform

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***Abstract*—This project introduces an AI-powered mock interview platform that simulates real-world job interviews through real-time voice-based interactions. Users engage with an AI interviewer capable of generating role-specific questions and providing detailed, structured feedback on performance across key areas such as communication, technical skills, problem-solving, confidence, and cultural fit. The platform is built using Next.js, Tailwind CSS, Firebase, Vapi, and Google Gemini, delivering a secure, scalable, and low-latency web application. By offering realistic, accessible interview practice, the system aims to enhance user confidence and readiness for actual interviews**

I. INTRODUCTION

In today's competitive job market, candidates are expected to perform exceptionally well in interviews, often under pressure and without adequate preparation tools. Existing methods—like reading question lists or practicing with peers—lack realism, consistency, and scalability. They don't replicate the stress, spontaneity, or flow of real interview settings. As a result, many candidates face low confidence, poor communication, and missed opportunities. This project addresses that gap by introducing a voice-based AI Mock Interview Platform—a full-stack web application designed to simulate real job interviews using conversational AI agents.

II. PROBLEM STATEMENT

Preparing for job interviews is a critical yet challenging process for many job seekers, often hindered by the lack of realistic and accessible practice tools. Traditional preparation methods—such as studying static question banks, reading guides, or practicing with peers—fall short in replicating the real-time dynamics,
interviews. This mismatch results in candidates entering interviews underprepared, lacking both the confidence and situational experience necessary for success.

III. RELATED WORK / LITERATURE REVIEW

This platform provides realistic, voice-based interview simulations to help candidates practice in a pressurefree environment, boosting their confidence. With AIdriven analytics, users receive personalized feedback to improve communication and technical skills. It ensures accessibility by offering high-quality coaching regardless of location or financial background, while adapting to various job profiles with customized question sets for both technical and non-technical roles. accessible manner. Traditional methods—such as reading question banks, watching videos, or practicing with peers—fail to simulate the high-pressure, unpredictable, and interactive nature of actual interviews This gap leads to Underdeveloped communication and problem-solving skills and Low confidence in high-stress scenarios

IV. PROPOSED METHODOLOGY

1. Frontend & Backend Development
Framework: Next.js for unified development (SSR + REST).
Styling: Tailwind CSS for responsive and clean UI design

2. Authentication & Data Handling:
Firebase Authentication: For secure signup/login and user profile management.
Cloud Firestore: To store user interview data, feedback logs, and analytics securely. G. Voice Interaction Engine:
Vapi API: To manage two-way real-

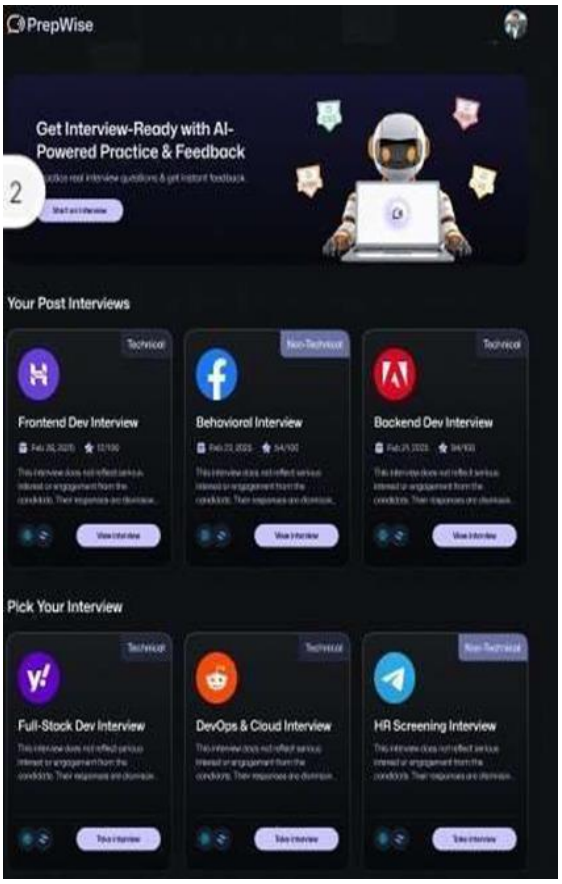

Figure 2. Home page

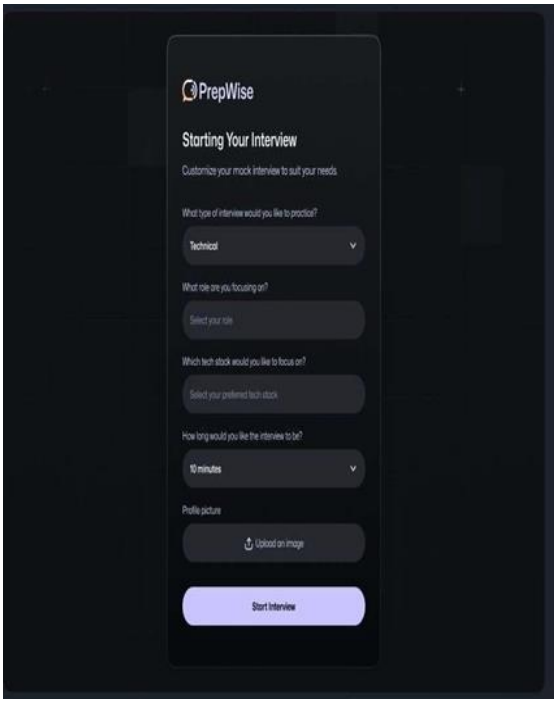

Figure 3. Interview Confirmation page

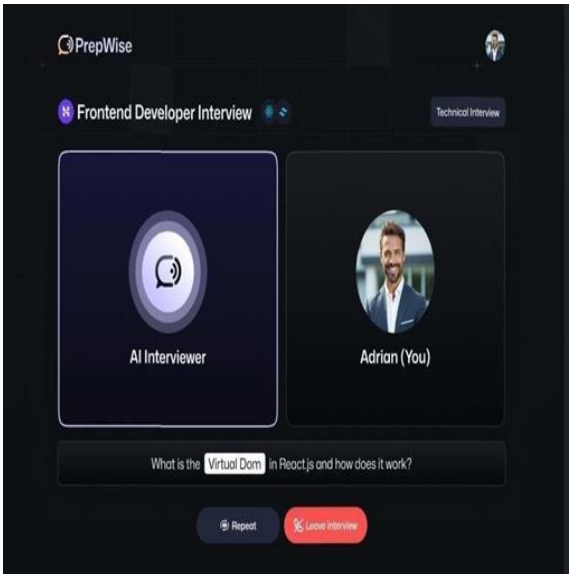

Figure 4. On going Interview page

Figure 5. On going Interview page

VII. CONCLUSION

The AI Mock Interview Platform effectively bridges the gap in job interview preparation by offering realistic, voice-based simulations powered by advanced AI technologies. It enhances candidates' confidence, communication, and problem-solving skills, ensuring they are well-prepared for real-world interviews. The AI Mock Interview Platform revolutionizes job interview preparation by

providing dynamic, voice-based simulations that replicate real world interview conditions. With AI-driven analytics and personalized feedback, it empowers candidates to refine their skills, build confidence, and bridge the gap between traditional study methods and live interview experiences.

VIII. FUTURE WORK

Future enhancements include multi-language support, adaptive difficulty levels, video-based interview simulations, and analytics dashboards for performance tracking. Incorporating mock panel interviews, sentiment analysis, gamification, and advanced speech recognition will further improve accessibility, engagement, and personalization, making the platform a comprehensive career development tool. Future enhancements could also integrate AI-driven roleplaying scenarios, where candidates can practice behavioural and situational questions tailored to specific industries. Expanding collaboration features, such as peer-to-peer mock interviews or mentorship programs, could further enhance learning. By continuously evolving with technological advancements and user feedback, the platform has the potential to become an indispensable tool for career readiness.

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