

Prepwise: AI Mock Interview and Resume Builder

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Abstract:

In the modern employment landscape, the competition for job opportunities has become fierce, and candidates are expected to present themselves with the highest degree of professionalism, skill readiness, and communication aptitude. To address the evolving expectations of recruiters and hiring platforms, we propose Prepwise, an AI-powered platform that streamlines career preparation through mock interviews and resume building. Developed with technologies like Next.js, TypeScript, Vapi, Firebase, and Google AI Studio, Prepwise simulates real-world interview experiences, providing dynamic feedback based on AI analysis of candidate responses. Furthermore, the Resume Builder module uses natural language processing to tailor resumes in line with job description requirements, optimizing them for Applicant Tracking Systems (ATS). Prepwise ensures that users not only practice interviews but also craft professional resumes that enhance their employability. The platform stands as a comprehensive solution aimed at boosting user confidence, improving professional presentation, and maximizing success rates in the recruitment process.

Keywords — Mock Interview, Resume Builder, AI, Next.js, TypeScript, Firebase, Google AI Studio, Job Readiness, ATS Optimization

INTRODUCTION

The transition from academic to professional life demands a high level of preparedness from students and job seekers. Traditionally, preparing for interviews involved mock sessions with peers or mentors, and resume building relied heavily on static templates with little attention to keyword optimization or dynamic content adaptation. In a digital-first hiring environment where recruiters rely on AI-powered screening tools and ATS systems, there is a need for more intelligent, interactive, and personalized career preparation tools. Recognizing this gap, Prepwise emerges as a revolutionary solution that leverages modern web technologies and artificial intelligence to support users in their journey toward professional excellence. Our platform seamlessly integrates Mock Interview Simulation and AI-optimized

Resume Building into a single user-friendly interface. By employing advanced technologies such as Next.js, TypeScript, Firebase, Vapi, and Google AI Studio, Prepwise ensures real-time data processing, voice recognition, intelligent feedback, and a personalized learning experience. The platform is designed to be highly accessible, scalable, and secure, offering users a comprehensive toolkit for mastering the critical aspects of career preparation.

PROBLEM STATEMENT

Despite the availability of career development tools, there remains a significant gap between the needs of job seekers and the services offered by traditional platforms. Most existing tools either provide a basic resume builder with static templates or offer mock interviews without

personalized analysis. Moreover, the majority of candidates are unaware of how to tailor their resumes for ATS systems or practice interviews that align specifically with their target roles. This results in many highly capable individuals missing out on opportunities due to poor presentation or inadequate preparation. There is an urgent need for an AI-driven, personalized, and comprehensive solution that can guide users at every stage—from resume creation to interview performance—ensuring they meet the evolving expectations of employers and recruitment systems. Prepwise aims to fulfill this need by offering an intelligent, interactive, and adaptable platform for mock interviews and resume building.

OBJECTIVES

The main objectives of the Prepwise platform are:
To create an AI-enabled platform that simulates realistic mock interview experiences with voice and text-based interaction, providing users with immediate and actionable feedback.

To develop a Resume Builder module capable of parsing job descriptions, extracting relevant keywords, and suggesting content improvements for ATS compliance.

To implement a cloud-native architecture using Firebase for secure, real-time data storage, authentication, and resume management.

To integrate voice AI capabilities using Vapi, allowing for natural conversation flow in interviews and better assessment of verbal communication skills.

To design a modern, user-centric interface with Next.js and TypeScript, ensuring ease of use, responsiveness, and accessibility across devices.

To offer a holistic preparation platform that enhances a user's technical and non-technical readiness for real-world job application processes.

TECHNOLOGY STACK

METHODOLOGY

(A) Existing System Analysis:

Current systems in the market tend to focus narrowly on either resume building or interview training, rarely combining both in a single platform. Static templates, limited keyword guidance, and generic mock questions dominate the landscape. There is little or no personalization, voice-based interaction is minimal, and dynamic feedback based on user behavior is virtually absent.

(B) Proposed System: Prepwise

Prepwise addresses these deficiencies through a modular, integrated architecture:

Mock Interview Simulation: The platform allows users to select a target job role. Using Vapi, the system conducts voice-based mock interviews where questions dynamically adjust based on the conversation. User responses are evaluated in real-time, and feedback is generated using Google AI Studio models.

Resume Builder: Users upload job descriptions, and Prepwise analyzes them using natural language understanding (NLU) to recommend resume edits, inserting role-specific keywords and optimizing phrasing for maximum ATS compatibility.

Firebase Integration: Interview recordings, feedback reports, and resume drafts are securely stored in Firestore, providing users with access to their progress history and allowing iterative improvement.

AI Personalization Layer: Prepwise continuously adapts its feedback mechanisms based on user history, targeting specific areas for improvement with each session.

KEY FEATURES

Dynamic Mock Interviews: Generate real-time role-specific questions, analyze answers for content, confidence, tone, and language use.

Voice Recognition and Sentiment Analysis: Using Vapi, user responses are transcribed and sentiment is analyzed to measure emotional intelligence and communication clarity.

ATS-Optimized Resume Building: Job descriptions are parsed intelligently, suggesting

content restructuring, skill addition, and keyword optimization to maximize resume visibility.

Real-Time Feedback: Post-interview analytics provide detailed reports on performance in both technical and soft skills.

Intuitive and Responsive UI: Developed with Next.js and React-Icons, ensuring easy navigation, visual clarity, and a pleasant user experience.

Secure Cloud Storage: Resumes and interview session data are encrypted and securely stored using Firebase.

RESULTS

Initial user testing of Prepwise yielded highly promising outcomes.

Over 85% of users reported a noticeable improvement in their interview performance, citing enhanced confidence, better articulation of thoughts, and improved ability to handle unexpected questions. Users also experienced a 30-40% increase in their resume pass rates through ATS systems when compared to their original resumes.

Additionally, the ability to simulate voice-based interviews led to better preparation for real interviews where non-verbal cues like tone, pacing, and articulation matter as much as content. Resume feedback mechanisms helped users in various industries — including technology, finance, and media — to better align their resumes with recruiter expectations. Overall, Prepwise proved to be an efficient and effective tool in boosting candidate career readiness, interview competence, and self-presentation quality.

DISCUSSION

As companies increasingly automate their hiring processes, candidates are expected to demonstrate not only technical proficiency but also strong communication skills and cultural fit. The use of platforms like Prepwise will become essential in bridging the gap between talent and opportunity. By using voice-based interactions for mock interviews and employing AI-backed resume

analysis, Prepwise goes beyond traditional methods to offer holistic development opportunities.

Unlike conventional methods which rely on peer or mentor availability, Prepwise offers scalable, accessible, and continuously available mock interview training. By adding AI-powered dynamic resume feedback, users can now tailor their job applications precisely to the expectations of different roles, industries, and companies.

The successful implementation of a cloud-native architecture, modern frontend frameworks, and AI interaction layers makes Prepwise a highly adaptable system capable of evolving with the changing recruitment landscape.

CONCLUSION

In a time when the job market is increasingly competitive and technology-driven, candidates must use every tool available to stand out. Prepwise offers a next-generation solution that prepares users comprehensively for job success by combining AI mock interviews, intelligent resume-building.

By integrating cutting-edge technologies like Next.js, TypeScript, Firebase, Vapi, and Google AI Studio, Prepwise delivers a secure, scalable, and highly interactive platform. The future roadmap includes the addition of features like body language analysis, facial sentiment reading, multi-language support, and deeper integration with professional networks such as LinkedIn. Prepwise is poised to redefine career preparation, giving candidates not just a competitive edge, but a full-spectrum career readiness toolkit.

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