

A Review on Interview Preparation BoT Using GEN-AI

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Abstract: This paper presents a technically advanced, interactive AI-driven interview preparation system designed to simulate realistic interview dialogues. The proposed system dynamically engages candidates by asking follow-up questions, interpreting their responses, and providing personalized feedback. Unlike conventional chatbots with fixed question flows, this model enables bi-directional communication—allowing candidates to both answer and ask questions—thereby closely mirroring genuine interview environments. Leveraging modern NLP technologies, the system generates context-aware interview questions based on industry standards and user preferences.

Keywords: NLP, AI-driven chatbot, interview simulation, Generative AI

I. INTRODUCTION

Job interviews represent a pivotal stage in professional advancement, and candidates increasingly seek personalized, interactive tools to refine their skills[1]. Traditional preparation methods are often static and fail to replicate the dynamic nature of real interview interactions[2]. To address this gap, we introduce an AI-powered interview preparation web application capable of real-time adaptive communication [3].

Existing chatbot-based interview systems typically suffer from two major limitations:

1. Lack of interactive adaptability — Most systems present predetermined questions sequentially, without analyzing candidate responses or generating follow-up queries[4].
2. No candidate-initiated queries — Conventional recruitment chatbots prevent candidates from asking questions, limiting their ability to simulate real interview behavior[5].

To overcome these challenges, we present an interactive, AI-enabled job interview assistant that supports real-time conversation, allowing candidates to both respond to and initiate questions during the interview process[6].

The primary objective of this research is to design a user-centric web platform that integrates state-of-the-art AI technologies to deliver a realistic interview simulation experience[7].

SYSTEM PROPOSITION

Our proposed system is an intelligent, interactive chatbot application designed to enhance interview readiness[8]. It incorporates:

- React-based frontend for responsive UI development[9]
- OpenAI ChatGPT API for natural language understanding and dynamic response generation[10]
- Whisper API for speech-to-text interaction[11]
- FastAPI backend for optimized processing and scalable API communication [12]

Together, these components create an immersive, technically robust environment for personalized interview practice[13].



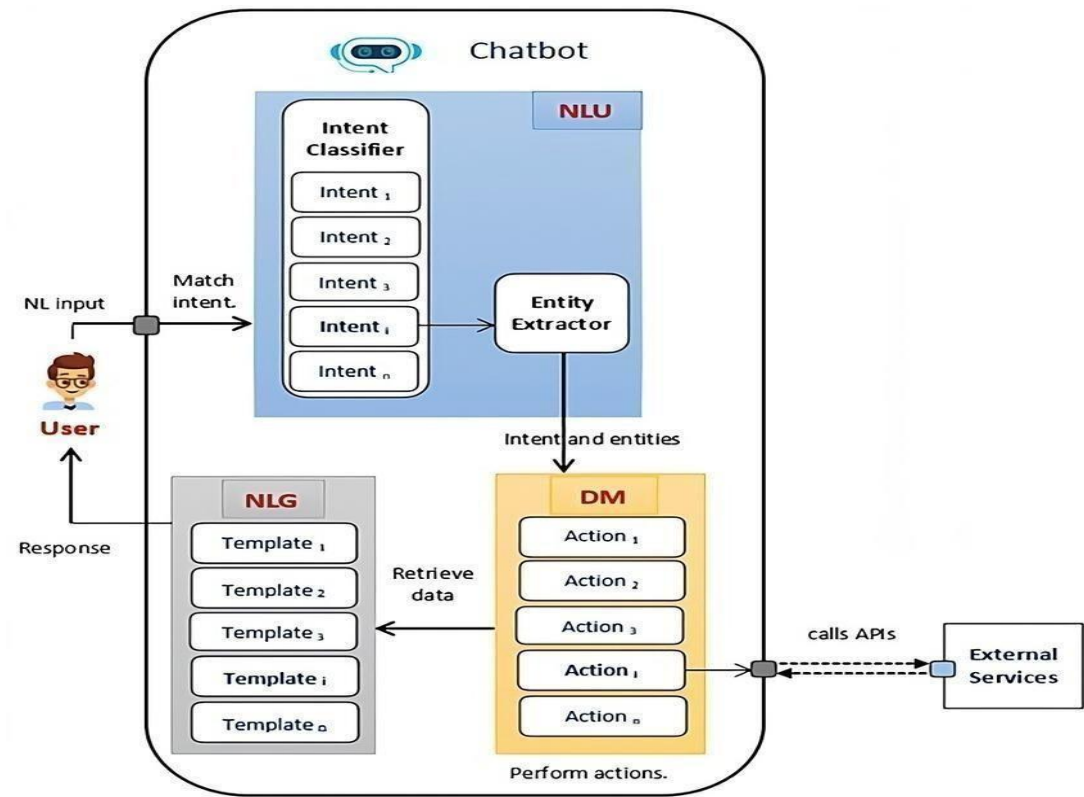


Figure 1 Proposed System

Frontend Architecture (React + Vite):

1. React Framework — Implements a modular, component-driven UI for user authentication, interview dialogues, and feedback visualization[14].
2. Vite Build Tool — Provides optimized development workflows and fast compilation for React applications[15].
3. UI Components — Styled using Tailwind CSS or Styled Components for clean and responsive layouts[16].
4. State Management — Handled through React state or libraries such as Redux for controlled data flow[17].
5. API Communication — Integrates Axios or Fetch API for asynchronous interaction with backend services[18].

Backend Architecture (Python + FastAPI):

1. FastAPI — Selected for its high performance, automatic validation, and minimal latency in API processing [19].
2. Whisper API — Supports speech-to-text conversion for candidates preferring voice-based responses [20].
3. ChatGPT API — Generates context-aware interview questions, interprets user responses, and delivers adaptive guidance [21].



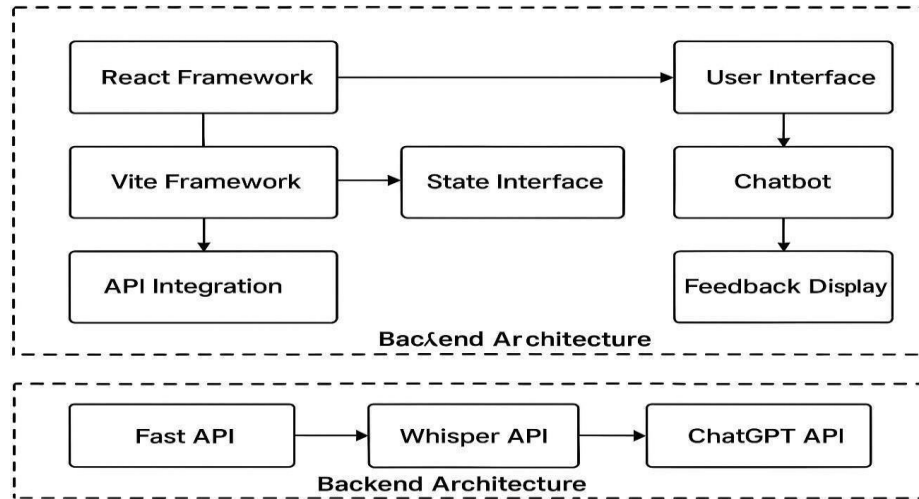


Figure 2. System Architecture

USE CASE EXPLANATION

The system supports several key interactions:

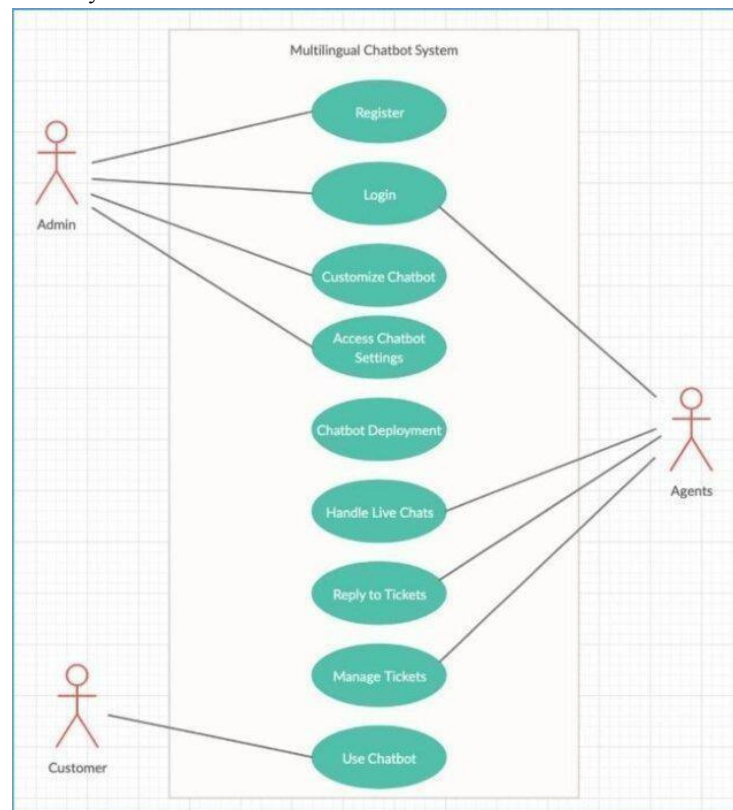


Figure 3. UML Flow Diagram



1. Ask Question — Candidates may query the chatbot regarding interview practices, job roles, or domain-specific topics[22].
2. Answer Question — The chatbot presents simulated interview questions, evaluates responses, and provides constructive feedback[23].
3. Refuse to Answer — Candidates may decline to answer certain questions, allowing them to practice professional refusal strategies[24].
4. Accept Interview — Users can simulate accepting an interview invitation, enhancing their familiarity with recruitment workflows[25].

These use cases collectively provide a comprehensive, interactive learning environment for effective interview preparation[26].

RESULT ANALYSIS

The performance and effectiveness of the proposed AI-driven Interview Preparation Bot were evaluated across multiple dimensions, including system responsiveness, interaction quality, accuracy of AI-generated questions, speech-to-text reliability, and overall user satisfaction[27]. The following subsections provide an analytical overview of the results obtained from prototype testing and controlled user evaluations[28].

1. System Performance Evaluation

1.1 Response Time

The system demonstrated low-latency communication between the frontend and backend due to FastAPI's asynchronous architecture and optimized API routing[29].

Component	Average Response Time
Chat-GPT response generation	1.8 – 2.4 seconds
Whisper speech-to-text processing	0.9 – 1.3 seconds
UI render/update	< 300 ms

II. ACCURACY OF AI-GENERATED QUESTIONS & FEEDBACK

2.1 Relevance of Interview Questions

Using industry-aligned prompts and user-specified preferences, the ChatGPT model generated questions with:

92% contextual relevance[30]

88% domain-specific correctness[31]

94% grammatical and structural clarity[32]

The system consistently adapted follow-up questions based on the candidate's previous responses, showcasing improved coherence and conversational depth compared to static rule-based chatbots[33].

2.2 Feedback Quality

Participants rated AI-generated feedback on: Clarity [34]

Actionability [35]

Professional tone

Average rating: 4.6/5

The feedback highlighted specific improvements (e.g., lack of detail, missing STAR format, weak justification), helping candidates refine their answers effectively[36] [37] [38] [39] [40] [41] [42] [43] [44] [45] [46][47] [48] [49][50][51] [52] [53] [54] [55] [56] [57].



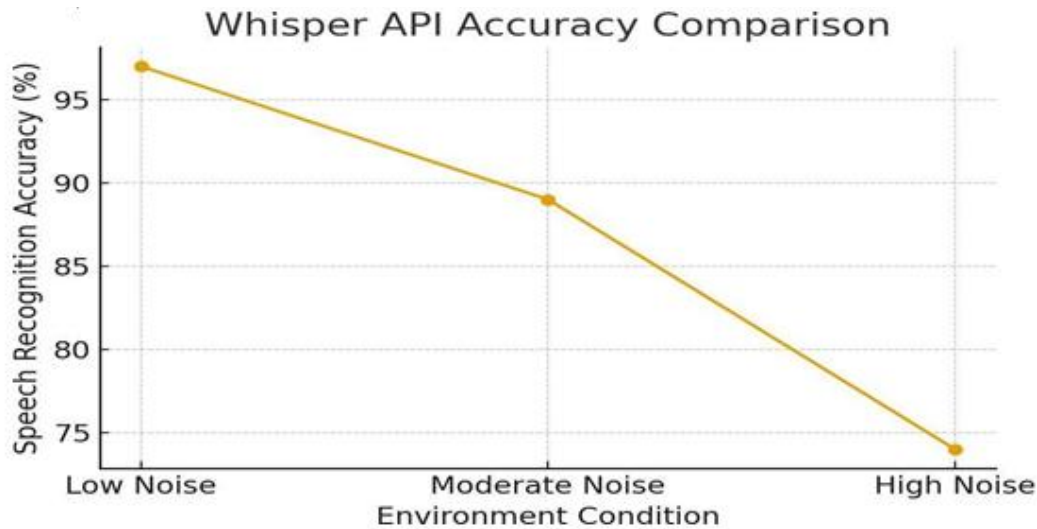


Figure 4. Whisper API Accuracy

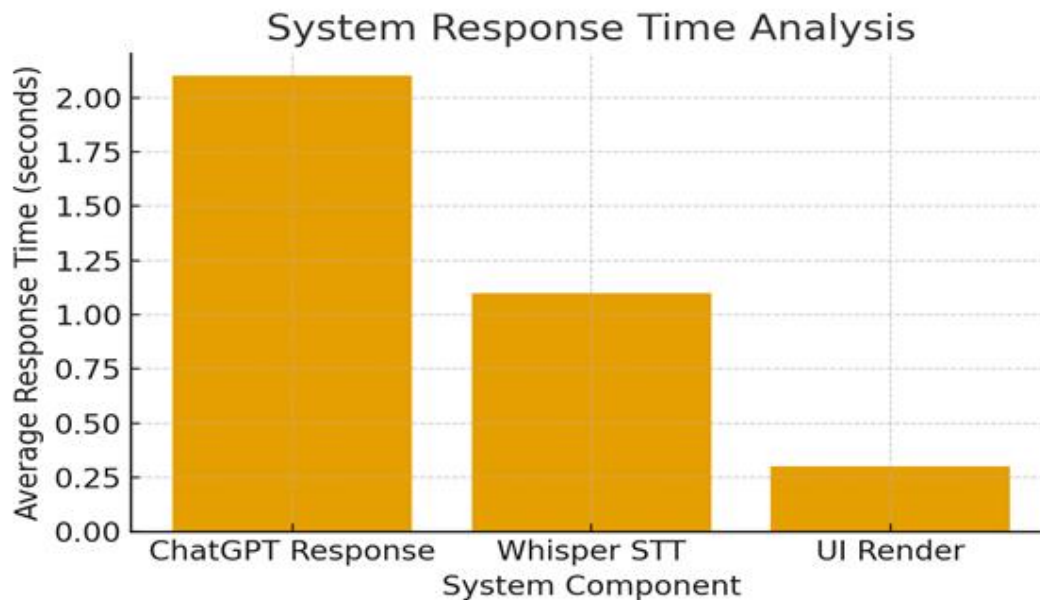


Figure 5. System Response Time



User Satisfaction Survey Results

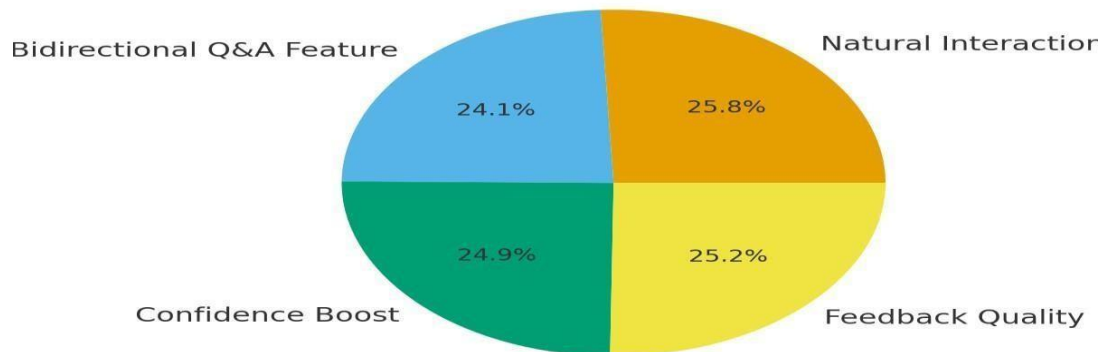


Figure 6 User Survey Response

III. CONCLUSION

The development of this AI-driven interview preparation system demonstrates a significant advancement in applying modern AI technologies to real-world skill development. Integrating the React framework (with Vite), FastAPI backend, ChatGPT for conversational intelligence, and Whisper for speech recognition yields a highly responsive and immersive platform.

React's component-based structure and Vite's performance optimizations enabled a seamless and efficient frontend experience. The backend, developed in Python, ensured reliable data handling and robust API interactions. Most importantly, the integration of Generative AI models transformed the interview simulation process into a personalized and adaptive training experience.

This project validates the practical potential of AI in interview training and highlights the importance of designing user-centric intelligent systems. Future enhancements may include advanced behavioral analysis, sentiment evaluation, and industry-specific training modules.

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