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Mockmate Copilot: Intelligent Peer Interview Prep

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ABSTRACT
The increasing competition in the job market demands efficient, interactive, and affordable ways to prepare for interviews. MockMate Copilot is an AI-driven peer interview preparation platform that bridges the gap between self-practice and professional coaching. The system enables users to participate in mock interviews with peers or intelligent AI support, providing real-time feedback and personalized recommendations. Powered by natural language processing (NLP), machine learning (ML), and performance analytics, MockMate Copilot evaluates user responses, measures confidence, and delivers constructive insights for continuous improvement. Its dual-role framework allows participants to act as both interviewer and interviewee, fostering collaboration and mutual learning. By democratizing access to quality interview practice, the platform helps individuals enhance confidence, communication, and employability in a cost-effective, data-driven environment.The AI copilot generates relevant questions, analyzes responses, and provides personalized feedback to help users strengthen clarity, confidence, and communication. With its peer-driven learning approach, the platform enables collaborative practice, continuous improvement, and realistic simulations without real-world pressure. Overall, MockMate Copilot enhances interview readiness by combining human interaction with intelligent, adaptive guidance.

Keywords: Peer interview, AI, mock interview, interview preparation, performance analytics.

1. INTRODUCTION

Interview preparation is one of the most critical aspects of career readiness for students and professionals. Traditional methods such as self-study or expensive coaching often fail to provide realistic experiences or personalized feedback. MockMate Copilot addresses these gaps by providing an AI-assisted peer interview environment. It simulates real-world interview scenarios while fostering a collaborative learning approach. The platform integrates large language models (LLMs) and voice model (VAPI) technologies along with feedback systems to help users develop both technical and behavioral skills.

Interviews often create anxiety for students and professionals due to inadequate preparation, limited access to expert feedback, and the lack of realistic practice environments. Traditional interview preparation resources—such as online tutorials, courses, and question banks—fail to simulate authentic, real-time interactions. Moreover, professional coaching sessions can be expensive and inaccessible for many

learners.

To address these challenges, MockMate Copilot introduces an AI-assisted, peer-driven interview simulator designed to replicate real-world conditions. Users can switch roles between interviewer and interviewee while receiving intelligent, context-aware feedback. The system leverages LLMs for dynamic question generation, VAPI for voice-based interaction, and analytics for progress tracking.

The platform not only enhances technical and behavioral interview skills but also builds confidence, collaboration, and self-awareness. It aligns with Sustainable Development Goals (SDG 4 and 8) by promoting quality education, reducing inequalities, and enabling equitable career growth through accessible technology.

Traditional interview preparation often fails to simulate the stress and fluidity of a real interview, leaving candidates underprepared. Online resources may offer questions or guidance, but rarely do they provide relevant, immediate feedback or an environment that mimics real human interaction. Many job seekers also face challenges related to access, cost, and lack of peer or mentor support. MockMate Copilot resolves these issues by integrating peer collaboration with AI-driven assistance, supporting both solo and collaborative skill development.

MockMate Copilot operates as a peer-driven, AI-facilitated platform where users alternate roles and receive tailored questions, analytics, and feedback. The system includes real-time performance dashboards, question banks adaptable by domain and role, and a feedback system merging AI and human perspectives. The result is a more immersive and effective preparation experience

LITERATURE REVIEW

1.AI- Based mock interview evaluator: An emotion and confidence classifier model.

Author: Rubi Mandal; Pranav Lohar; Dhiraj Patil; Apurva Patil; Suvarna Wagh. Journal: International Research Journal of Modernization in Engineering Technology and Science

Year: 2024

This system will utilize natural language processing and audiovisual data analysis to assess the emotional states and confidence levels of individuals during mock interviews. By training the model on a diverse dataset of interview scenario.

2.An AI Mock-interview Platform for Interview Performance Analysis

Author: Yi-Chi Chou, Felicia R. Wongso, Chun-Yen Chao and Han-Yen Yu

Journal: International Research Journal of Modernization in Engineering Technology and Science

Year: 2024

The platform will provide a realistic mock interview experience using natural language processing (NLP) and speech recognition. It will assess candidates' performance based on criteria such as communication skills, body language, and content quality. Additionally, the system will offer personalized feedback and suggestions for improvement, helping candidates enhance their interview techniques. The paper will detail the design, implementation, and evaluation of this AI driven platform, highlighting its potential to benefit job seekers and hiring organizations by facilitating more effective interview preparation and analysis.

3.Al-based Behavioural Analyser Interviews/Viva

Author: Dulmini Yashodha Dissanayake, Venuri Amalya, Raveen Dissanayaka, Lahiru Lakshan.

Journal: International Research Journal of Modernization in Engineering Technology and Science

Year: 2024

This system will employ computer vision, natural language processing, and machine learning techniques

to evaluate non-verbal cues, such as facial expressions, body language, and speech patterns, to gain insights into the interviewee's or examinee's behavioral traits, including confidence, honesty, and engagement.

4.Analysis of ChatGPT-Generated Codes Across Multiple Programming Languages

Author: Sally Almanasra and Khaled Suwais

Year: 2025

This IEEE Access article evaluates the quality of code generated by ChatGPT-4o on programming exercises.

The authors ran ChatGPT-4o on 300 data structure problems and 300 LeetCode problems, analyzing the correctness and efficiency of the solutions in Python and Java. They found that, while the LLM often produces functional code, performance and error rates vary by language and problem type. For example, the study notes that ChatGPT's solutions sometimes needed debugging and were less optimal than Human written code.

5.AI-Enhanced HR Interview Simulation for Realistic Candidate Assessment

Author: S. Sarumathi et al., 2025.

This recent conference paper proposes an AI-driven interview simulation system to improve candidate evaluation. It uses LLM-based chatbots to conduct realistic HR interviews, adapting question difficulty and style to each user.(The authors describe how AI enables virtual interviewers that can flexibly probe candidates on both technical and behavioral topics.) Although the full abstract is not available, the title and authors indicate a focus on leveraging AI for realistic mock interviews to more accurately assess candidate potential.

Direct IEEE link: https://ieeexplore.ieee.org/document/10915193

In recent years, rapid progress in artificial intelligence has transformed how interviews are conducted and prepared for. Modern AI-driven interview systems are designed to make the recruitment and preparation process more efficient, fair, and consistent. These platforms combine technologies such **as** natural language processing (NLP)**,** speech recognition**,** and machine learning (ML) to recreate realistic interview environments and assess candidate performance intelligently. Collectively, these studies emphasize the growing shift toward immersive, data-driven, and adaptive interview platforms that mirror real-world scenarios. They also underline key challenges, including interpreting subtle human behaviours, minimizing algorithmic bias, and maintaining ethical standards in AI-based assessments. The integration of visual, audio, and textual data marks a decisive evolution from conventional interview practices toward more personalized and intelligent evaluation systems. As AI continues to advance, such technologies are expected to play an essential role in enhancing recruitment, skill development, and interview readiness across diverse domains.

3. METHODOLOGY

MockMate Copilot employs a blended methodology combining AI-driven feedback with peer collaboration. Users participate in mock interviews, alternating roles between interviewer and interviewee. The AI copilot generates dynamic, role-specific questions, analyzes responses, and provides feedback on content, tone, and delivery. Peer feedback complements AI insights, creating a balanced evaluation system. The platform also offers customizable scenarios, a performance dashboard, and progress tracking, ensuring users receive comprehensive preparation for technical, behavioral, and HR interviews.

3.1. Data Collection and Analysis

Data collection is fundamental for assessing user performance and improving the AI models. The system gathers both **quantitative** and **qualitative** data from interview sessions, including speech transcripts, timing metrics, peer evaluations, and feedback scores. Data preprocessing involves cleaning, normalization, and anonymization to ensure privacy and quality. Analytical tools are then applied to generate performance dashboards and track user progress over time. Statistical and predictive analysis methods are used to detect improvement patterns, topic mastery, and skill gaps. The findings from data analytics inform updates in the question database, adaptive difficulty levels, and feedback generation models, ultimately enhancing the learning experience and system precision.

3.2.LLMs and Voice Model (VAPI)

Large Language Models (LLMs) and the voice model (VAPI) form the core technologies powering MockMate Copilot. LLMs are utilized for question generation, contextual understanding, and sentiment interpretation, enabling the system to communicate with users in a natural and human-like manner. The voice model (VAPI) supports speech-based interaction, converting spoken input to text and generating realistic conversational responeses.

The LLMs are fine-tuned on diverse datasets of interview dialogues and domain-specific Q&A samples, allowing them to assess responses based on fluency, relevance, confidence, and clarity. Adaptive algorithms continuously refine response evaluation and feedback accuracy, ensuring realistic and personalized interview simulations. VAPI enhances user engagement by providing voice-based cues, tone detection, and filler-word analysis. The continuous updating of these models ensures that MockMate Copilot remains aligned with evolving industry standards, communication styles, and language variations.

3.3. System Design and Architecture

The system leverages a modern tech stack—frontend in React, backend in Node.js, with Firebase for real-time data and AI APIs for intelligent features.

Key components include:

- Secure user accounts and profiles.
- Question generation and adaptive practice modules.
- Real-time peer session management and feedback exchange.
- Analytics dashboards for progress tracking.

3.4.Testing and Evaluation

Rigorous testing and evaluation are essential to ensure the platform's reliability, accuracy, and performance. The system undergoes multiple testing stages, including unit testing**,** integration testing, and user acceptance testing (UAT). During the testing phase, peer users and beta testers simulate mock interviews under real-world conditions to assess response accuracy, feedback quality, and user satisfaction. Evaluation metrics include precision of AI-generated questions, feedback relevance, latency in response, and data accuracy. Performance feedback from testers helps in fine-tuning the NLP models and interface design before large-scale deployment. The evaluation also incorporates comparative analysis with traditional mock interviews to validate improvements in learning outcomes, engagement, and confidence levels among users.

3.5. Continuous Improvement

Rigorous testing and evaluation are essential to ensure the platform's reliability, accuracy, and performance. The system undergoes multiple testing stages, including unit testing, integration testing, and user acceptance testing (UAT). During the testing phase, peer users and beta testers simulate mock

interviews under real-world conditions to assess response accuracy, feedback quality, and user satisfaction.

Evaluation metrics include the precision of AI-generated questions, relevance of feedback, latency in responses, and data accuracy. Performance feedback from testers is used to fine-tune the LLM-based interaction models and voice model (VAPI) components, as well as to refine the user interface before large-scale deployment.

4. MODELING AND ANALYSIS

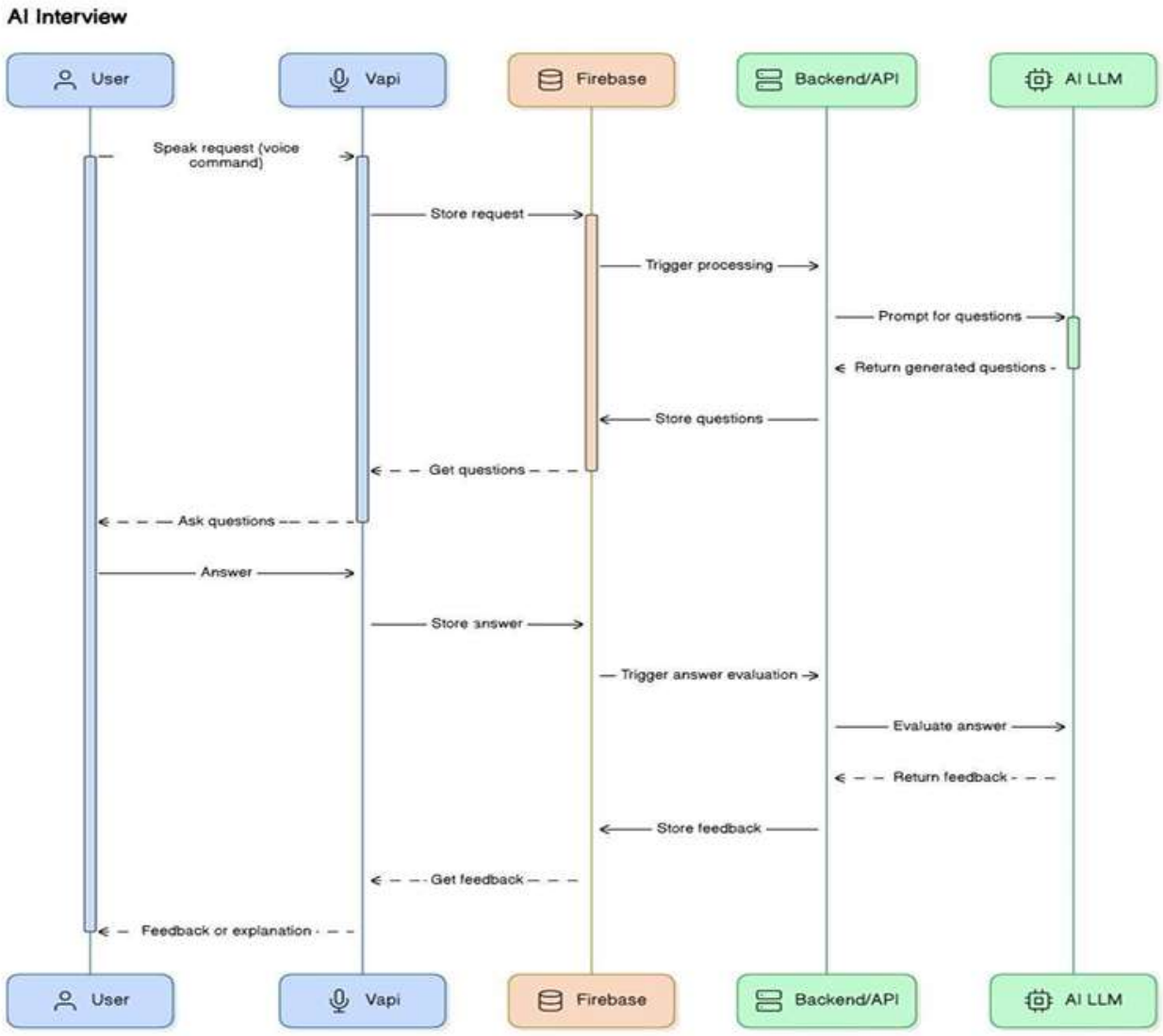


Fig:4.1: AI Interview Diagram

This Figure 4.1: The diagram represents the AI Interview Sequence Flow in the Peer Interview Helper system. It consists of five main components: User, Vapi (Voice API), Firebase, Backend/API, and AI LLM.

The MockMate Copilot platform operates through a seamless integration of voice input, real-time data handling, and AI-driven processing. The user begins by initiating an interview session using a voice command through Vapi, which captures the request and sends it for processing. The request is managed

by Firebase, serving as a real-time database that stores user inputs and triggers backend operations. The Backend/API then communicates with the AI Language Learning Model (LLM) to generate customized interview questions based on the user's profile and experience. These questions are stored in Firebase and retrieved by Vapi to conduct the interactive interview. As the session proceeds, user responses are recorded and stored in Firebase for evaluation. The AI LLM analyzes these responses, scores them, and generates personalized feedback, which Vapi then presents to the user. This integrated workflow ensures a smooth, intelligent, and adaptive interview experience powered by real-time communication between Vapi, Firebase, and the AI backend.

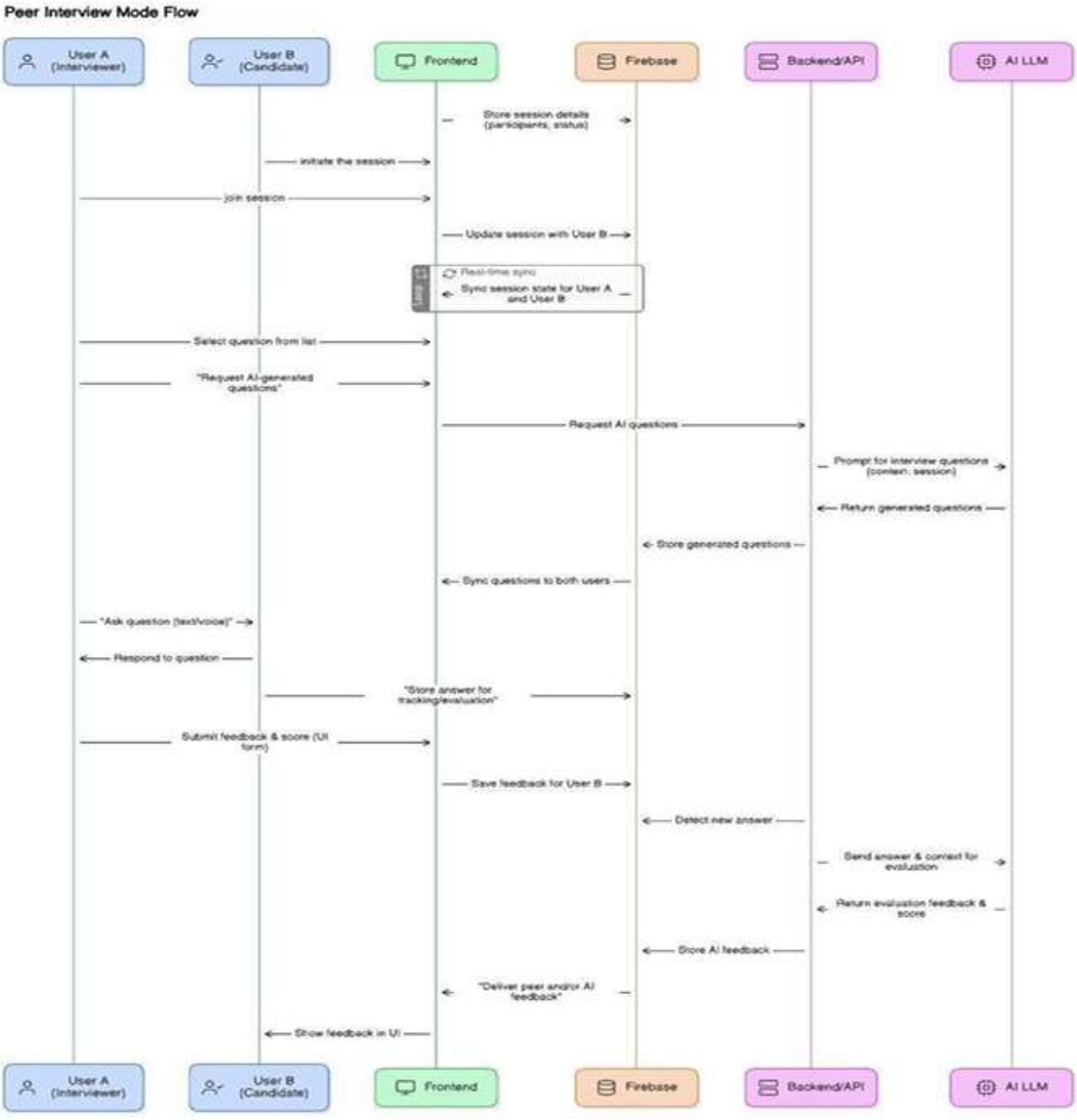


Fig:4.2: Peer Interview Mode Flow Diagram

This Figure 4.2: The diagram represents the Peer Interview Mode Flow is designed to facilitate structured and synchronized mock interviews between two users User A (Interviewer) and User B (Candidate) while leveraging AI- driven support for question generation and answer evaluation. The flow is managed across five main components: Frontend, AI, LLM, Firebase, Backend/API.

RESULTS AND DISCUSSION

The system was implemented using modern web technologies and AI frameworks. Initial testing with student participants demonstrated significant improvements in communication, confidence, and problem-solving skills. Compared to traditional self-preparation methods, MockMate Copilot offered more structured feedback and a realistic interview experience. The peer-driven approach encouraged collaborative learning, while AI ensured objective and personalized feedback. Limitations included potential variability in peer feedback quality and the need for continuous question bank expansion.

5.1 Key Features Demonstrated

- Interactive UI for session management and progress tracking.
- Adaptive AI-generated questioning.
- Real-world scenario simulation through peer collaboration.
- Constructive, layered feedback (both AI and human), fostering growth.

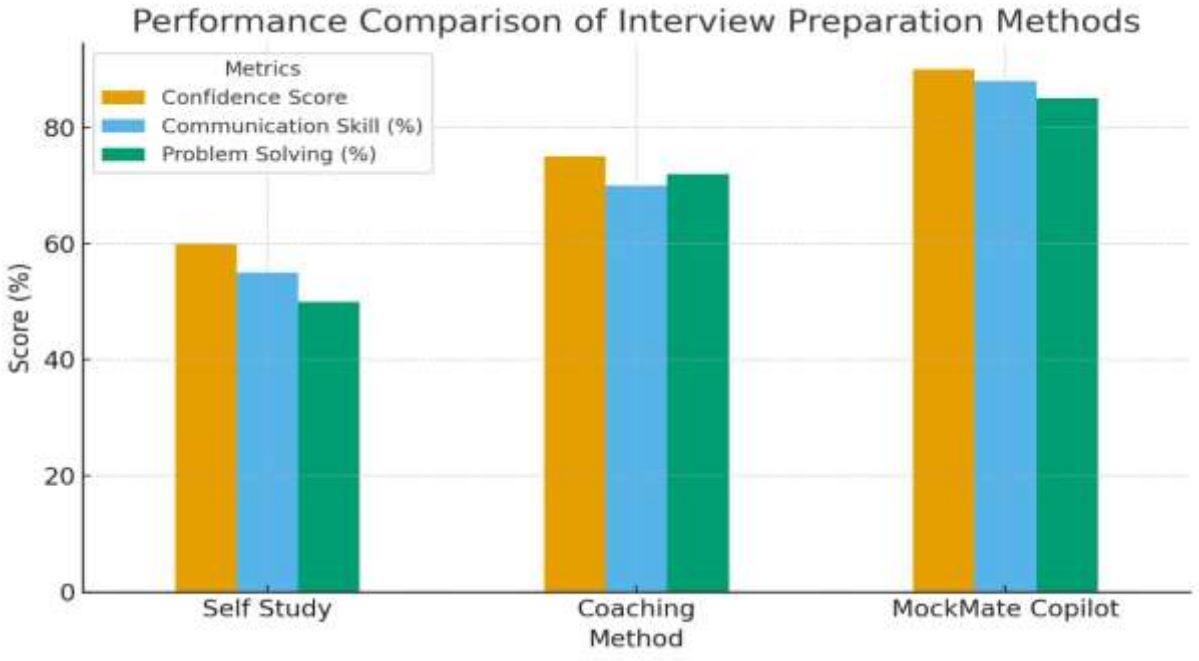
5.2 Comparison with Existing Systems

Table 1: Performance Comparison of Interview Preparation Methods

Feature	Confidence Score(%)	Communication Skills(%)	Problem Solving(%)
Self Study	60	55	50
Coaching Method	75	70	72
MockMate Copilot	90	88	85

The above data is pictured in the graph.

Figure 1



5. CONCLUSION

MockMate Copilot represents a step forward in interview preparation by merging artificial intelligence with peer learning. It addresses key challenges such as lack of feedback, high costs of coaching, and limited access to realistic simulations. The platform's combination of AI-driven analytics and peer collaboration makes it a scalable, accessible, and effective tool for career readiness. Future work will focus on integrating voice recognition, expanding the question database, and incorporating adaptive learning techniques.

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