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Emphasizing Preparation & Development Using AI

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Peer Review Information	Abstract
<p>Submission: 11 Sept 2025</p> <p>Revision: 10 Oct 2025</p> <p>Acceptance: 22 Oct 2025</p> <p>Keywords</p> <p>Artificial Intelligence, RAG, QLoRA, Automated Interviewing, Large Language Models, Quantization, Real-Time Retrieval, Simulation, Feedback, Candidate Assessment, GPT-4.</p>	<p>This project proposes an Emphasizing Preparation & Development Using AI designed to simulate real world interviews while assessing both technical and soft skills. The system incorporates Natural Language Processing (NLP) for answer analysis, Convolutional Neural Networks (CNN) for facial expression recognition, and Media Pipe for body posture detection. Additionally, video sentiment analysis is employed to evaluate confidence and emotional state. The platform generates dynamic, job-specific technical questions and provides instant feedback on communication, body language, and emotional intelligence. This integrated approach enables candidates to improve their strengths, identify weaknesses, and prepare comprehensively for real job interviews.</p>

Introduction

Today, learning new skills and getting ready for jobs is more important than ever. Artificial Intelligence (AI) is helping make this easier and more effective. With the help of AI, people can prepare for interviews, improve their communication, and learn faster through smart tools.

These tools can understand what a person needs to work on and give helpful, personalized feedback. They also make training more flexible, affordable, and available to more people. Because of this, AI is becoming a powerful way to support learning, career growth, and job preparation.

Interviews are still a very important part of choosing the right person for a job. However, the way companies hire people and how careers grow has changed a lot. Because there is so much competition in the job market, candidates

need to be well- prepared to do well in interviews. Practicing interviews with friends or career counselors is helpful, but these methods often have limited options and are not always easy to access.

A new and better way to solve this problem is by using AI-powered interview preparation platforms. These tools offer more dynamic and varied practice opportunities. One example is InterviewX, a modern platform that uses advanced technology to give users a flexible and realistic interview experience.

Preparing for a job interview can be stressful, especially if you don't know what to expect. That's why AI-based mock interviews are becoming popular. These are practice interviews done with the help of Artificial Intelligence (AI).

In an AI-based mock interview, a smart computer program asks you questions like a real interviewer would. It can also listen to your

answers, check your body language (if using video), and give you helpful feedback. This helps you practice in a safe, comfortable environment and improve your confidence.

AI mock interviews are available anytime and can be repeated as many times as you want. They help you get better at answering questions, speaking clearly, and making a good impression—so you're better prepared when the real interview comes.

Literature Survey

1. Haq et al. (2024) proposed another CNN-based approach that concentrated on large, A Survey of AI-Driven Mock Interviews using GenAI and Machine Learning (InterviewX) ICUIS (2024) InterviewX is an AI-powered mock interview system that uses advanced techniques like Retrieval-Augmented Generation (RAG) and Quantized Low-Rank Adaptation (QLoRA) to create personalized interview questions and provide real-time feedback.

2. AI-Based Mock Interview Evaluator: An Emotion and Confidence Classifier Model ICISCoIS (2023) This system uses machine learning (ML) to analyze a candidate's emotions and confidence during a mock interview. By studying how a person speaks — including tone of voice, facial expressions, and body language — the model can identify emotional states like nervousness, calmness, or confidence.

3. Artificial Intelligence-Powered Mock Interview Generator IRJET, March (2025) This AI-based system helps people get ready for interviews by automatically creating questions and checking their answers. It makes interview practice easier and faster, giving users a chance to improve without needing a real interviewer.

4. The rise of digital education tools has significantly transformed how individuals prepare for job interviews. Early platforms focused primarily on static content, offering question banks and suggested answers through web pages or PDFs. These resources, while informative, lacked interactivity and real-time evaluation [1]. As user needs evolved, websites began to offer video tutorials and forums, allowing learners to engage in passive learning. However, these systems still required users to self-assess, making it difficult to track actual improvement in communication and problem-solving under pressure

Research Gap

- Insufficient Integration of Human-AI Collaboration.
- Limited User Skills and Knowledge.
- Access and Infrastructure Problems.
- Limited Personalization and Context

Awareness.

- Risk of Cognitive Overreliance on AI Tools.

Problem Statement

Traditional mock interview techniques often fail to provide a comprehensive assessment of both technical and soft skills. Candidates may excel technically but lack preparation in communication, confidence, and body language. This results in a lack of readiness during actual interviews. Therefore, there is a need for an AI-driven platform that can assess both technical knowledge and soft skills such as emotional expression, posture, and confidence.

Conclusion

The proposed system introduces an AI-based virtual interview analysis platform that integrates facial emotion detection, speech analysis, and knowledge evaluation through large language models. By leveraging convolutional neural networks for facial expression classification, natural language processing techniques for speech interpretation, and Gemini AI for dynamic question generation and response validation, the system delivers a robust and real-time interview simulation experience. The modular architecture supports automated evaluation, eliminating manual intervention in question generation and response assessment.

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