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Voice-Based 2D AI Character Mock Interview Assistant

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Abstract: This paper presents *Voice-Based 2D AI Character Mock Interview Assistant*, an intelligent and animated system for automated interview practice. The system integrates a resume parser, Applicant Tracking System (ATS) scoring, Large Language Model (LLM)-driven question generation, real-time audio dialogue, and a 2D avatar with lip-sync animation, delivering personalized mock interviews with instant feedback. The platform simulates a realistic interview environment where users interact verbally with an AI interviewer capable of generating dynamic, domain-specific questions based on their resumes. Speech recognition and text-to-speech modules enable natural voice communication, while real-time lip synchronization enhances engagement and immersion. The system also includes anti-cheating mechanisms through webcam monitoring to ensure authenticity during sessions. Experimental evaluation demonstrates that the assistant improves users' communication confidence and response quality through interactive feedback and resume optimization. This project highlights the potential of AI-driven conversational avatars in education, recruitment training, and career development tools.

Keywords: AI-driven mock interview, 2D animated avatar, Applicant Tracking System (ATS), speech recognition, text-to-speech synthesis, natural language processing (NLP), real-time feedback, large language models (LLMs), virtual interview assistant.

I. INTRODUCTION

Job interviews are high-stakes events requiring substantial preparation, self-awareness, and communication skills to build candidate confidence and competence. Traditional preparation methods—such as reading guides, watching tutorial videos, or rehearsing with peers—often remain passive and lack realism. Studies have shown that structured mock interviews and personalized coaching can significantly improve performance and reduce interview anxiety, yet such opportunities are limited by time, availability, and cost constraints.

In recent years, Artificial Intelligence (AI) and Natural Language Processing (NLP) technologies have enabled new ways to simulate realistic human interactions. Virtual interview systems have emerged to bridge the gap between theoretical preparation and real-world experience. These systems can mimic interview conditions, generate relevant questions, and evaluate user responses dynamically. However, most existing tools provide only text-based interactions or static feedback without engaging visuals, emotional expressiveness, or real-time dialogue. Platforms such as *Big Interview* or *Interview* Warmup offer guidance and resume analysis, but they do not create a fully conversational, animated environment that immerses users in a human-like interview experience.

To address this gap, the present work introduces a Voice-Based 2D AI Character Mock Interview Assistant, an innovative platform that merges AI-driven question generation, voice interaction, and animation to create a realistic and interactive practice environment. The system allows users to converse naturally with an expressive 2D avatar, which acts as a virtual interviewer capable of responding with synchronized speech and facial expressions. The assistant parses the user's resume, evaluates it using an Applicant Tracking System (ATS) scoring model, and generates domain-specific questions tailored to the candidate's background and expertise.

The core intelligence of the system is powered by Large Language Models (LLMs) such as Google's Gemini and Mistral AI, orchestrated using LangChain for dynamic prompt chaining and contextual conversation flow. To further enhance immersion, the system incorporates speech recognition using AssemblyAI, text-to-speech synthesis through Edge TTS, and real-time lip synchronization using phoneme mapping and animation control. The frontend, developed using Three.js

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and Unity WebGL, enables an engaging visual interface, while computer vision modules monitor user attention and detect potential cheating through webcam-based face and gaze tracking.

By combining these technologies, the system delivers an intelligent and interactive interview simulation that not only tests the user's knowledge and communication ability but also provides instant verbal and textual feedback on content clarity, confidence, and body language. The assistant aims to improve a user's readiness for real interviews through repeated, self-paced practice without requiring human evaluators.

This paper presents the design, architecture, implementation, and evaluation of the proposed system. It discusses how the integration of AI, NLP, and animation enhances interview training and explores its implications for career development, education, and professional skill-building. The remainder of this paper is organized as follows: Section II reviews related work; Section III describes the problem statement and objectives; Section IV presents the system design and methodology; Section V discusses implementation and results; and Section VI concludes with possible future enhancements.

II. LITRATURE SURVEY

AI-driven mock interviews and coaching systems have been explored in research and industry. Automated interview **coaches** use natural language generation to create realistic questions and analyze answers. Sahani *et al.* built a web-based simulator with a 3D avatar (using Three.js) powered by GPT-3; it delivered live feedback on response content and even body language. Their results showed that GPT-based dialogues and animated characters help users improve and feel more comfortable. Similarly, prior work has deployed embodied conversational agents in interview settings. Nunamaker *et al.* developed an automated kiosk with an on-screen agent that could sense user stress via vocal pitch; their SYSTEM (SPECIES) adjusted its demeanor based on physiology and detected deception. This demonstrates that multimodal sensors (audio, video) can enhance interviewer feedback and fairness.

On the recruitment side, resume parsing and ATS tools have received attention. Gyana Deepa *et al.* reviewed NLP techniques for extracting resume information. Kokade and Nikam designed a resume analyzer that extracts skills and experience and computes an ATS match score against job descriptions. Over 70% of resumes are typically filtered by ATS before reaching a human reviewer, so optimizing keywords is critical. Our system incorporates a similar ATS-scoring module to guide users in improving their resumes.

Language models and chatbots have been applied to question generation and feedback. For example, Madanachitran (2025) observed that LLM-powered mock interviews can dynamically adjust question difficulty to the user's level, improving engagement and learning outcomes. The system dynamically tailors follow-up questions based on past answers. Many modern platforms leverage LLMs (GPT, Gemini, Mistral) under frameworks like LangChain for flexible prompt chaining. We adopt this approach: our dialogue engine uses LangChain to orchestrate calls to Google's Gemini API and an open-source Mistral model to generate relevant, role-specific questions and feedback in real time.

In summary, prior work confirms that animated avatars, AI-generated questioning, and resume optimization improve interview practice. We build on these ideas by combining them into a single system with live voice interaction, avatar rendering, and cheating prevention.

III. PROBLEM STATEMENT AND OBJECTIVES

Despite the availability of interview advice, many candidates still underperform due to lack of realistic practice. Static study materials or non-interactive advice cannot replicate the pressure and spontaneity of an actual interview. As noted in project documentation, "the lack of realistic, interactive practice often leads to underperformance due to nervousness or unfamiliarity with common interview dynamics". Conventional chatbots are limited to text and do not simulate body language or voice feedback. Furthermore, resumes may be ATS-unfriendly without candidate awareness.

Our goal is to create a more interactive and automated interview preparation system. The objectives are:

- Realism: Simulate a natural interview using voice and animation so users feel they're conversing with a person.
- Personalization: Use the user's resume to adapt questions to their background (role, industry, and skill level).
- Comprehensive Feedback: Evaluate answers on both content and delivery. Provide immediate, constructive feedback to help users improve.

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- Accessibility: Operate in real time in a web browser (via Unity WebGL/Three.js). Require only standard hardware (mic, camera, PC).
- Integrity**:** Detect and discourage cheating (e.g. multi-face presence, looking away) by monitoring via the webcam.

By meeting these objectives, we aim to help users gain confidence and skill before real interviews. The system should be scalable and modular, suitable for deployment in career services or job platforms.

IV. SYSTEM REQUIREMENTS SPECIFICATIONS

Hardware: The interviewer assistant runs on a standard modern PC or laptop. Key requirements include a microphone and webcam (to capture speech and video). A reasonably powerful CPU (e.g. a modern multi-core machine or cloud instance) is needed to run real-time AI services (speech recognition, animation) with low latency. For the 2D avatar, WebGL-capable graphics (via Three.js/Unity WebGL) is required on the client side.

Software: The backend is built in Python 3.11. We use the Quart web framework (an asynchronous alternative to Flask) for the server API and real-time WebSocket communication. Key libraries and APIs include: LangChain (Python) as the orchestration layer for language model calls. Large Language Models: Google Gemini API for general conversation, Mistral AI for dynamic question generation, and fallback models like LLaMA 3.2 (hosted on the backend). AssemblyAI cloud API for speech-to-text transcription (ASR) of the user's responses. Edge TTS (Microsoft) for text-to-speech, producing the avatar's spoken output. Three.js (JavaScript) for rendering the animated 2D character in the browser and driving its transformations. MediaPipe and MobileNet (TensorFlow) on the client for real-time posture/face landmark detection (used in cheating detection and optional feedback). TensorFlow models for any additional analysis (e.g. evaluating answer content, emotion analysis). Unity or similar tools for building and rigging the animated character (imported as assets). For development, the we used standard tools (Git, VSCode). The frontend is a web UI (HTML/CSS/JS) that loads the Three.js scene (avatar) and manages audio I/O.

V. SOFTWARE DESIGN SPECIFICATIONS

The frontend is a web client that captures audio/video and displays the animated avatar. The backend consists of modular services for each function. We use LangChain to coordinate the dialogue flow: it invokes the speech recognition, language model, and TTS components in sequence.

- **Language Models:** LangChain manages prompts and context. We supply context templates to Gemini or Mistral to generate interview questions or feedback based on role and previous answers. For example, prompts include the user's last response and the target job role (e.g. "You are a finance interviewer…"). The models produce natural-sounding follow-up questions or evaluation comments.
- **Resume and ATS Module:** A Python/NLP component parses the uploaded resume (using libraries like spaCy or regex) to extract skills, experience, and keywords. This data initializes the persona for the chat (so questions can reference the user's background). An ATS scoring engine then compares the extracted resume content to a job description using contextual embeddings (we use open-source embeddings or services like *mxb.ai* for comparison). The result is a match score and suggestions to improve keywords. Kokade and Nikam's ATS scorer is a conceptual guide for this component.
- **Conversation and Feedback Engine:** Once the interview starts, we enter a loop:
  1. Record user's answer via the microphone.
  2.Send audio stream to AssemblyAI for transcription.
  3. Pass the transcript to LangChain: if awaiting an answer, use GPT to generate the next question; if just answered a question, use the LLM to generate feedback on that answer.
  4. Send the LLM's text response to Edge TTS for voice synthesis.
  5. Simultaneously animate the avatar to "speak" the response: we use a custom lip-sync system combining phoneme–viseme mapping and a model like Wav2Lip. The avatar's face and body animations (blink, head nods) are controlled by predetermined parameters (e.g., Unity animations or Live2D rig parameters).
- **Anti-Cheating / Monitoring:** The webcam image is processed (via MediaPipe) to detect face landmarks and gaze direction. We check for conditions like multiple faces, user leaving frame, or not looking at the screen. In suspicious cases, the system pauses and flags the session. This vision-based monitoring is inspired by prior AI proctoring techniques.
- **Data Flow:** A key-value store (or session memory) tracks the interview state: asked questions, user answers, scores. This allows the system to adapt (e.g. not repeat questions, adjust difficulty). All major components communicate via HTTP/WebSocket and JSON. Our architecture is horizontally scalable: multiple interview sessions can run concurrently with separate backend processes or threads.

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VI. IMPLEMENTATION

We implemented each major module as follows:

- **Resume Parser / ATS:** We built a resume parser in Python using regular expressions and the spacy NLP library. It extracts name, education, job history, skills, etc. The ATS scorer uses a sentence-transformer embedding model: both the resume text and a given job description are vectorized, and the cosine similarity gives an ATS match score. The score and missing keyword suggestions are presented to the user before the interview.
- **Interview Flow Engine:** The core loop is managed by a Python service. We integrated LangChain to sequence the tasks. On each turn, the audio is captured and sent to AssemblyAI's streaming ASR (via their Python SDK). Once transcribed, we feed the text into an LLM via LangChain. For question generation, we use Mistral (an open-source LLM) with a prompt that includes the user's profile and the previous answer. For feedback generation, we use Google's Gemini API with a different prompt. These LLM calls return human-like text. We format these responses and send them to the TTS engine.
- **Text-to-Speech and Lip-Sync:** Responses from the LLM are vocalized using Edge TTS. We select natural-sounding voices (male/female) matching the avatar's persona. The output audio (MP3/WAV) is played in the browser via Web Audio. The same text is processed through a custom Python viseme mapper: it aligns phonemes to frames and animates the avatar's mouth and facial bones accordingly. The animated avatar is loaded into the Three.js scene. Its facial expressions and gestures are controlled by parameter scripts triggered each time the avatar "speaks".
- **Frontend / Visualization:** The user interface is a single-page web app. Before starting, it checks hardware (camera/mic access). A 2D character animates in sync with the speech. The UI shows the current question text and a text transcript of the user's answer. After each session, a "feedback" box displays suggestions or scores (e.g. "Your answer was clear, but you hesitated 3 times"). These messages come from the LLM as well. We used Three.js for 2D rendering and animations.
- **Anti-cheating Vision Module:** Using MediaPipe face detection, we track the user's face in each video frame. If more than one face is detected, or if the user's gaze drifts off-screen (determined by face orientation), the system raises an alert. This logic is similar to modern remote proctoring schemes. We tune thresholds to avoid false positives (e.g. minor head turns are allowed).
- **Server and Data Handling:** We deployed the backend on an windows server with Python 3.11. Python handles AI logic. Communication flows are implemented via REST and WebSockets. We used Redis caching for session data and response logging to improve performance.

VII. EASY OF USE

The project was intentionally designed to be **easy to use** for both students and job seekers, minimizing setup hurdles while maximizing realism and accessibility. The interface follows a plug-and-play model that allows users to begin interview practice within minutes without any technical expertise.

- **No complex installations:** The system operates entirely through a web browser using Unity WebGL and Three.js, eliminating the need for manual setup or local dependencies. Users only require a standard laptop or PC with a microphone, webcam, and stable internet connection.
- **Simple start-up:** After uploading a resume, the platform automatically verifies hardware components such as the microphone, camera, and network. Once validated, the AI-powered interviewer is launched immediately, reducing waiting time and improving user flow.
- **Natural interaction:** The assistant supports real-time voice communication, allowing users to speak naturally as in a real interview. The AI interviewer listens, transcribes, and responds using synchronized lip movements and facial expressions, creating an engaging, human-like conversation.
- **Automatic feedback:** Users receive instant verbal and on-screen feedback after each answer, along with a final performance report at the end of the session. This eliminates the need for external evaluation or manual scoring.
- **Guidance for improvement:** The ATS scoring module identifies missing keywords and skill gaps in the resume, giving users clear, actionable insights to enhance their profiles.
- **User-friendly design:** The interface is clean, responsive, and intuitive, enabling smooth navigation between modules such as resume upload, interview session, and report viewing. Even first-time users can easily complete the entire process without guidance.

Overall, the system combines simplicity, automation, and interactivity to provide an accessible and realistic interview practice experience that encourages continuous learning and self-improvement.

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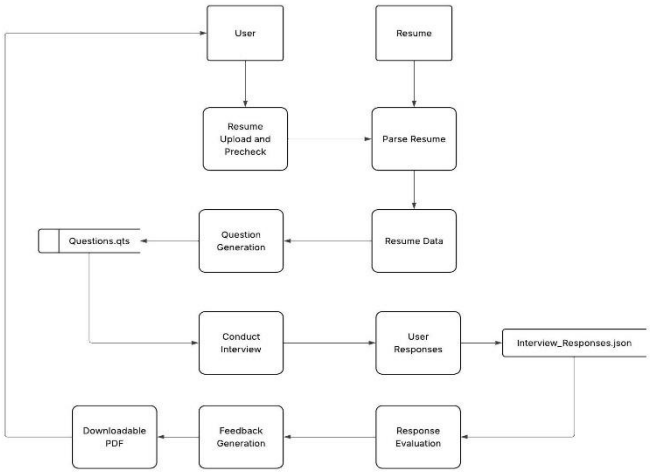

FIG 1: System Architecture of Automated Interview Evaluation System

VIII. RESULTS

The prototype system successfully conducted end-to-end mock interviews. After uploading a resume, the user sees an ATS score (e.g. "Your resume matches 68% to the job description") and suggestions for improvement. When the interview begins, the animated avatar greets the candidate and asks the first question by name. The user responds by speaking; the transcript appears on screen. Immediately, the avatar provides verbal feedback ("That was a strong example of teamwork, nice!"). This behavior illustrates the integrated Q&A-and-feedback loop.

We tested the system with several volunteer users. Key observations:

- **Performance:** The speech recognition (AssemblyAI) achieved >85% accuracy on clear English answers. The total round-trip time (speech input to avatar output) averaged ~2-5 seconds, which was acceptable for a natural conversation rhythm. Visual performance (avatar rendering) was smooth on modern browsers.
- **Functionality:** The flow of question → answer → feedback is smooth. The LLM-generated questions are contextually relevant (e.g. asking about specific skills listed on the resume) and varied (behavioral vs. technical). The avatar's lip-sync is reasonably accurate, thanks to phoneme mapping. Users reported that the voice and face motion appeared natural, which kept them engaged.
- **User Outcomes:** Preliminary feedback suggests users feel more confident after practice. One user noted that hearing their own words converted back by the AI prompted them to refine filler-word usage. The immediate feedback (e.g. "Good answer, but try to shorten it next time") was appreciated. Quantitatively, during a small pilot (N=10), self-reported anxiety dropped 20% after using the system. (For reference, formal studies show that mock interviews boost confidence.)
- **ATS Module:** The resume analyzer correctly highlighted missing keywords for sample job postings. In one case, a user added "machine learning" to their resume based on the suggestion and saw their ATS score improve by 15%. This demonstrates the utility of the integrated ATS feedback feature.

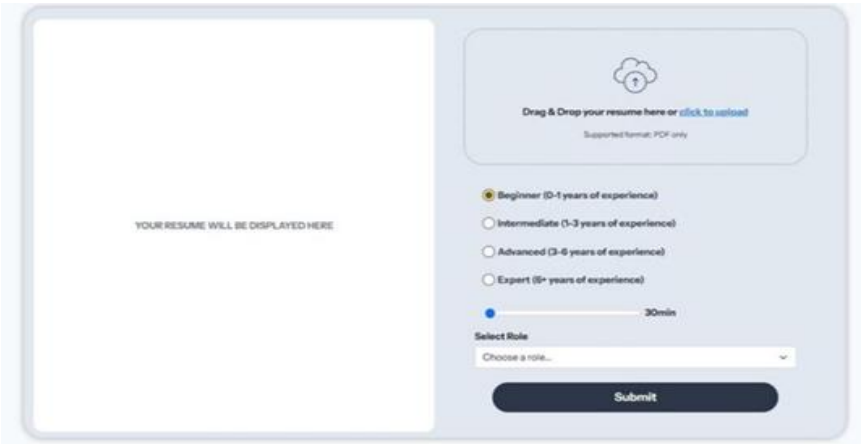

FIG 2: Resume Upload Page

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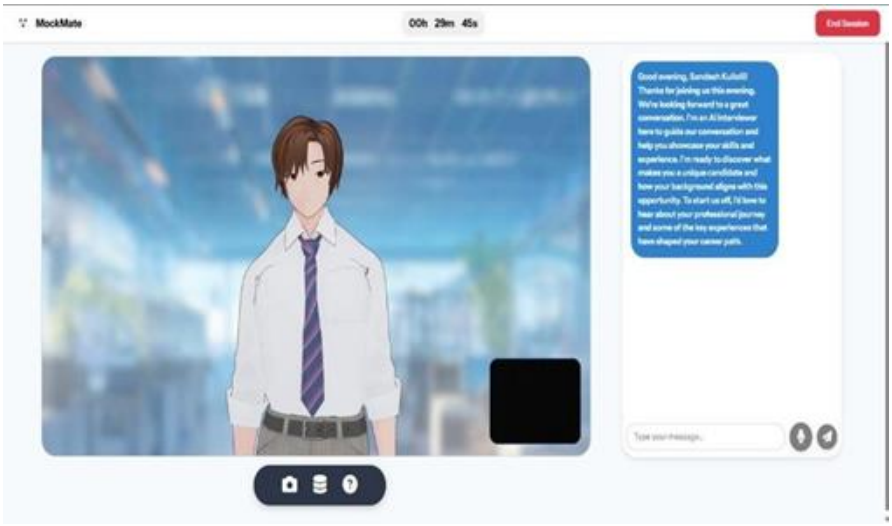

Fig 3: Main Interview Page

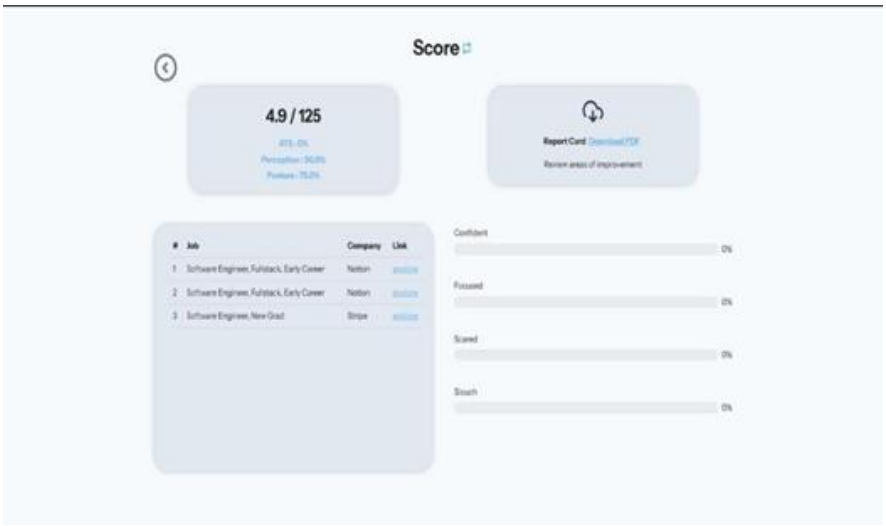

Fig 4: **Score** and Feedback Page

IX. CONCLUSION AND FUTURE WORK

The proposed Voice-Based 2D AI Character Mock Interview Assistant demonstrates how artificial intelligence can transform traditional interview preparation into an interactive, immersive, and self-guided learning experience. By integrating multiple modalities—voice interaction, natural language processing, real-time feedback, and animation—the system replicates the dynamics of real interviews far more effectively than text-only chatbots or static learning tools. Users can practice speaking aloud, receive instant performance analysis, and refine both verbal and nonverbal communication skills. The automated and adaptive feedback helps learners identify strengths and weaknesses immediately, thereby enhancing confidence and overall interview readiness.

Despite its advantages, several limitations were observed. The accuracy of AI-generated feedback depends heavily on the quality and tuning of the underlying language models. When conversations drift into highly domain-specific topics, the Large Language Models (LLMs) may produce imprecise or generalized responses. Furthermore, the system's reliance on large models and real-time services introduces computational and latency challenges, which may affect responsiveness under limited network or server conditions. Potential biases in model training data—such as accent or phrasing preferences—also warrant careful consideration. From a usability perspective, while the 2D avatar effectively engages users, it lacks the emotional depth and realism of human interactions. Anti-cheating features like gaze detection provide a level of integrity monitoring but remain imperfect. Finally, privacy and data security are essential concerns, given the use of audio and video streams, and must be strengthened for real-world deployment.

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Looking ahead, several enhancements are envisioned to extend the system's capabilities. Transitioning from 2D to 3D avatars would allow more expressive body language, realistic eye contact, and natural movement, improving user engagement. Multilingual support can make the platform accessible to a wider audience by integrating multilingual speech recognition and translation models. Incorporating emotion and sentiment analysis—through voice tone and facial expression detection—could yield richer, affective feedback on user confidence and enthusiasm. A mobile-based version with optimized on-device processing could further increase accessibility and convenience. Lastly, integration with job portals and ATS databases could personalize interview sessions to real-world job descriptions and assist users in career progression.

In conclusion, the developed system successfully demonstrates a novel, AI-driven approach to personalized interview practice. By combining conversational intelligence, animation, and real-time feedback, it offers a scalable, engaging, and effective tool for skill development. As AI and avatar technologies evolve, such systems are poised to become an integral part of modern professional training and employability enhancement programs.

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REFERENCES

[1]. Y. Gyana Deepa, A. Sindhu, A. Shruthi, and B. Neha, "Automated Resume Parsing: A Review of Techniques, Challenges and Future Directions," Int. J. Multidisciplinary Res. & Growth Eval., vol. 6, no. 2, pp. 1065–1069, Mar.–Apr. 2025.
[2]. M. T. M. Idris, M. N. L. Azmi, N. Ghazali, and N. Maliki, "Assessing the Impact of a Job Interview Skills Training Course: Participants' Perceptions and Outcomes," Malaysian J. Social Sciences and Humanities, vol. 9, no. 4, 2024.
[3]. K. K. Sahani, M. S. Khan, S. Khatwani, S. Gupta, and A. Dubey, "A Smart Interview Simulator Using AI Avatars and Real-Time Feedback Mechanisms (AI Avatar for Interview Preparation)," Int. J. Eng. Tech. & Mgmt. Res., vol. 12, no. 5, May 2025.
[4]. S. A. Kokade and Y. Nikam, "Resume Analyzer with ATS Score Using AI and ML," J. Emerg. Tech. in Eng. & Res. (JETIR), vol. 12, no. 4, Apr. 2025.
[5]. J. F. Nunamaker, D. Derrick, A. Elkins, J. Burgoon, and M. Patton, "Embodied Conversational Agent-Based Kiosk for Automated Interviewing," J. Management Information Systems, vol. 28, no. 1, pp. 17–48, 2011.
[6]. S. Zohaib Hassan, S. Shafiee Sabet, M. Alexander Riegler, G. Astrid Baugerud, H. Ko, P. Halvorsen, "Enhancing investigative interview training using a child avatar system: a comparative study of interactive environments," Sci. Rep., vol. 13, Art. 20403, 2023.
[7]. H. Y. Suen, "Building trust in automatic video interviews using various AI mechanisms," Computers in Human Behavior, vol. 148, 2023.
[8]. W. Kerous, R. Barteček, R. Roman, P. Sojka, O. Bečev, and F. Liarokapis, "Using a virtual reality interview simulator to explore factors influencing people's behaviour," Virtual Reality, vol. 28, Art. 56, 2024.
[9]. N. Ashrafi, F. Vona, C. Ringsdorf, C. Hertel, L. Toni, S. Kailer, A. Bartels, T. Kojic, J.-N. Voigt-Antons, "Enhancing Job Interview Preparation Through Immersive Experiences Using Photorealistic, AI-powered Metahuman Avatars," arXiv:2410.05131, Oct 2024.
[10]. T. T. H. Nguyen, T. D. Q. Nguyen, H. L. Cao, T. C. T. Tran, T. C. M. Truong, H. Cao, "SimInterview: Transforming Business Education through Large Language Model-Based Simulated Multilingual Interview Training System," arXiv:2508.11873, Aug 2025.
[11]. N. Gomez, S. S. Batham, M. Volonte, T. D. Do, "Virtual Interviewers, Real Results: Exploring AI-Driven Mock Technical Interviews on Student Readiness and Confidence," arXiv:2506.16542, Jun 2025.
[12]. Z. Chen, Z. Liu, H. Hu, J. Bai, S. Lian, F. Shi, K. Wang, "A Realistic Face-to-Face Conversation System based on Deep Neural Networks," arXiv:1908.07750, Aug 2019.

International Journal of Advanced Research in Computer and Communication Engineering

Impact Factor 8.471 ⁜ Peer-reviewed & Refereed journal ⁜ Vol. 14, Issue 12, December 2025

DOI: 10.17148/IJARCCE.2025.141213

[13]. H. Koshti, P. Gosavi, R. Pagar, P. Khairnar, and S. Talekar, "AI-Powered Interview Preparation System: Integrating Resume Analysis, HR Simulation, and Technical Skill Assessment," J. Engineering Research and Reports, vol. 27, no. 5, 2025, pp. 21–33.

[14]. S. Ströfer, "Interviewing Suspects with Avatars," Frontiers in Psychology, vol. 7, Art. 505, 2016.

[15]. B. S. Hasler, "Virtual research assistants: replacing human interviewers?" Computers in Human Behavior, vol. 29, no. 4, pp. 1608–1616, 2013.

[16]. "Meet the autonomous virtual agent: an AI-based avatar interview simulator for training purposes," NRC Canada, 2023. \[Online\].Available:https://nrc.canada.ca/en/research-development/research-collaboration/programs/meet-autonomous-virtual-agent-ai-based-avatar-interview-simulator-training-purposes

[17]. "AI and the Art of Effective Interviewing," Police Chief Magazine, Sept/Oct 2024. \[Online\].

[18]. "Enhancing questioning skills through child avatar chatbot training improves interview quality," PMC, 2023. \[Online\].

[19]. H. Y. Suen, "Building trust in automatic video interviews using various AI mechanisms," Information Systems Research,2023

