AI-Powered Platform for Real-Time Mock Interviews and Personalized Feedback

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Abstract: *In today's highly competitive job market, strong interview skills are essential for graduates seeking further training or employment opportunities. However, many candidates require effective preparation throughout their academic journey to confidently navigate interview situations. To address this gap, researchers are focusing on developing training systems that enhance candidates' communication and interpersonal skills for job interviews.*

Interviews serve as a critical tool for employers to assess a candidate's suitability for a role, relying heavily on social cues demonstrated by applicants. This paper introduces an innovative approach to simulating job interviews through an AI-powered virtual recruiter, incorporating signal processing techniques to analyze candidate behavior, communication, and emotional responses in real-time.

The proposed system is designed to help job seekers, particularly young professionals, improve their interpersonal skills necessary for successful interviews. Key components of the system include a real-time social cue recognition module, a dialogue manager, a behavior monitoring unit, and a 3D interactive environment. Feedback mechanisms integrated within the system evaluate facial expressions, head movements, response time, speech pace, and volume, providing candidates with valuable insights into their performance. Additionally, a speech-to-text module analyzes grammar, while graphical reports allow candidates to track their progress over multiple practice sessions. This research contributes to the field of interview training and assessment, demonstrating the potential of AI-driven technologies in enhancing job seekers' preparedness and social communication skills..

Keywords: Facial Expression Recognition, Sound Analysis, Interview Assessment, AI-Based Application, Real-time Feedback, Speech-to-Text Technology