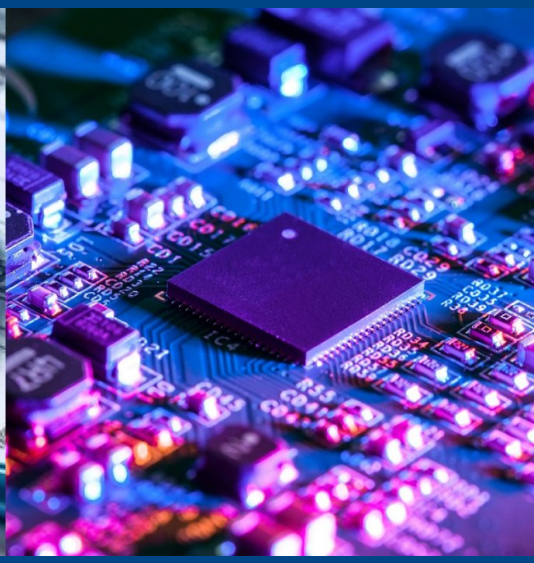
ISSN: 2582-7219





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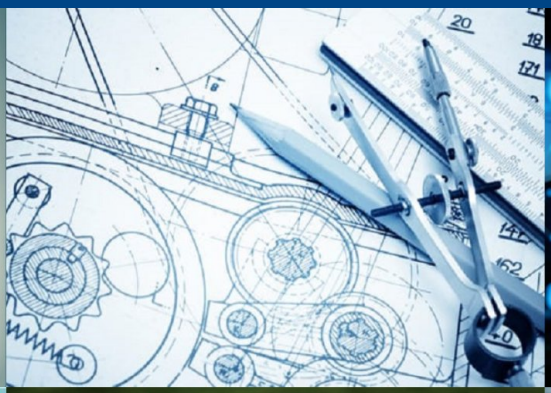

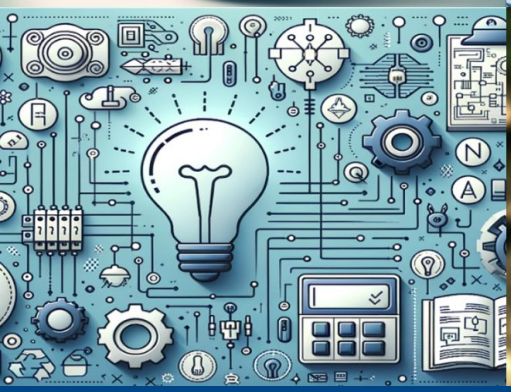

**Impact Factor: 8.206** **Volume 9, Issue 4, April 2026**

© 2026 IJMRSET | Volume 9, Issue 4, April 2026 | DOI:10.15680/IJMRSET.2026.0904253

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

# PREP WISE: AI Automated Interview Processing System

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**ABSTRACT:** Basically, PREP WISE is an intelligent, automated system that can conduct a complete job interview without any human intervention. Its role can be described as that of a virtual human resource manager. Thus, rather than conducting a mere scripted monologue it employs AI and Natural Language Processing techniques to interact and hold a genuine conversation with candidates. Using speech recognition technology, it analyzes responses and delivers dynamically selected behavioral and technical questions based on the flow of the conversation.But it does much more than just ask questions. It does this based on the technical accuracy of the answers, communication skills, and confidence in the answers. Then after the interview, it instantly issues a feedback report to the candidate, telling them exactly what needs to be improved before the real deal. This helps reduce human bias, save time, and streamline the process of interviewing many candidates simultaneously, which is a significant boon for companies and recruiters. In all, it represents a practical application of artificial intelligence to streamline the process of skill testing and hiring.

**KEYWORDS**: Artificial intelligence, automated interview, natural language processing, recruitment automation, skill assessment, speech recognition, virtual interviewer.

## I. INTRODUCTION

Hiring is one of the important aspects of organizational development. It is the primary source of getting skilled talent. Manual evaluations that form the basis of the traditional interview techniques are, however, losing relevance in the current hiring scenario where speed is the primary requirement. These techniques have logistical problems, are time-consuming and can have a scale problem. Also, face-to-face interviews, which are led by humans, are likely to be afflicted by unconscious bias,self-evaluation, and different evaluation strategies. These issues can have a devastating impact on the impartiality and openness of the selection of candidates.

Addressing these issues, innovations in the field of the Artificial Intelligence (AI) and machine learning present an opportunity in changing the human resources. AIs have been integrated into the recruitment process over the last few years to develop new forms of standardized, objective, and automated evaluation. These systems can simulate human-like interactions with the help of technologies such as Natural Language Processing (NLP) and Speech Recognition. They are able to evaluate both verbal and written answers promptly and determine the technical capacity of applicants, communication skills, language proficiency and confidence of an applicant without getting influenced by human fatigue

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With the problems of the conventional screening procedure, the paper presents PREP WISE, an Artificial Intelligence-based Automated Interview Processing System, which is focused on enhancing the process of candidates evaluation and interview preparation. Being a good virtual interviewer, PREP WISE develops and poses pertinent HR and technical inquiries. The system records the answers of the candidates and digitizes the data and auditory data, and also assesses performance based on data-driven evaluation algorithms. The system gives instant, organized feedback reports by changing its sole focus on recording responses, to active evaluation. This will assist the candidates in identifying their strengths and weaknesses.

This system is primarily aimed at eliminating human bias during the initial screening procedure entirely, as well as the large scale. PREP WISE reduces the administrative overheads of organizations and increases the efficiency of job seekers in preparation by enabling evaluation of several applicants at the same time. Finally, this study demonstrates how AI is practically applied in the field of automation of recruitment and skills estimation in the modern context. These smart appraisal techniques see PREP WISE make significant contributions to developing a more transparent, equitable, and standardized interview procedure.

## II. LITERATURE REVIEW

Artificial Intelligence (AI) has begun making a significant contribution to changing therecruitment process and interviewing over the last few years. With a desire to hire candidates more quickly, accurately, and efficiently, researchers have studied various AI-based approaches to automate the evaluation of candidates. The process of traditional interviewing techniques is very human intensive and it is prone to biasing thus prompting the invention of smart and automated interviewing systems.

Previous studies were primarily concerned with screening resumes with machine learning. Support Vector Machines (SVM), Naive Bayes and decision tree were some of the algorithms that were used to categorize resumes according to job descriptions and matching with keywords. These systems also assisted organizations in minimizing the manual work and accelerating short listing. They, however, did not assess communication skill, poor problem solving ability, and behavioral characteristics of a candidate and could only limit it to document filtering. In order to overcome this drawback, interview systems based on AI-driven chatbots were developed. Such systems were preliminary HR interviews based on Natural Language Processing (NLP). People communicated with chatbots which posed questions and assessed text answers. Despite the scalability benefits such systems gained and the decrease in the interviewer workload, most of them used pre- defined patterns of answers and simple similarity matching strategies. Consequently, their situational awareness could be weak.

similarity, semantic analysis, and models like BERT using transformationers allowed gaining a more profound insight into the answers of the candidates. These methods enabled systems to not only consider the existence of keywords, but also the contextual relevance. Nonetheless, numerous research works paid more attention to comparison of text without incorporating active generation of questions or an organized feedback.

Sentiment analysis is another critical field of study that is used to assess the emotional coloring of candidate speech. Using the system of positive, negative, and neutral responses, AI systems can approximate the confidence rates and style of communication. Sentiment analysis can be used to provide behavioral insights, but it is not usually used in conjunction with a full scoring system.

More so, development of Automatic Speech Recognition (ASR) has also made it possible to have voice based interview systems. Those systems can transform the spoken answers into text to be further analyzed by NLP to provide a more realistic interview setting. Nevertheless, most of the available solutions present speech recognition, answer evaluation and scoring as separate sub-units instead of being a single architecture. In general, the bulk of existing studies cover the separate aspects of AI-based recruitment, including resume sorting, chatbot communication, NLP analysis, sentiment analysis, or speech recognition. Little has been done so far to build up a fully developed system that incorporates secure authentication, dynamically generated questions, voice interaction, intelligent analysis of answers, generation of feedback, and management of interview history through one scalable platform.The suggested system, PREP WISE, will address these shortcomings by combining several AI technologies into a single complex system of interview processing. The system aims to enhance the fairness of recruitment, efficiency, and scalability in current recruitment processes by using interactive mock interviews, smart evaluation, and automated scorecard.

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## III. PROPOSED METHODOLOGY

In the modern recruitment ecosystem, organizations increasingly rely on technology- driven solutions to enhance efficiency, reduce bias, and streamline candidate evaluation processes. Traditional interview methods, although effective in assessing interpersonal and technical skills, are often limited by subjectivity, inconsistency, time constraints, and scalability challenges. Human interviewers may unintentionally introduce bias, vary in evaluation standards, or face difficulty managing large volumes of applicants. With the rapid advancement of Artificial Intelligence (AI) and Natural Language Processing (NLP), there is significant potential to automate and standardize the interview assessment process while maintaining evaluation quality and fairness.

The growing demand for skilled professionals in competitive job markets has intensified the need for structured and data-driven interview systems. Companies and educational institutions conduct thousands of interviews annually, requiring substantial human effort and logistical coordination. Moreover, in remote hiring environments and large-scale campus recruitment drives, maintaining consistency across interview panels becomes challenging.An AI-powered automated interview framework can address these limitations by providing objective evaluation metrics, scalable infrastructure, and real-time feedback mechanisms.

PREP WISE is proposed as an Artificial Intelligence-based automated interview processing framework designed to evaluate candidate responses using advanced NLP techniques. The system aims to simulate real- world interview conditions while ensuring structured assessment and transparent scoring. By leveraging machine learning algorithms, semantic similarity models, and linguistic analysis, PREP WISE can assess candidate responses based on content relevance, technical accuracy, communication clarity, and sentiment attributes. This approach not only improves evaluation consistency but also enhances candidate preparedness through constructive feedback.

Recent advancements in NLP, particularly transformer-based architectures and contextual embedding models, have significantly improved machines' ability to understand and interpret human language. Techniques such as semantic similarity analysis, keyword extraction, sentiment analysis, and grammatical evaluation enable automated systems to assess open-ended responses with high reliability. These technological developments form the foundation of the PREP WISE framework. By integrating such AI-driven methodologies within a modular architecture, the system ensures adaptability, scalability, and future extensibility.

Another key motivation behind the development of PREP WISE is the need for unbiased and standardized evaluation mechanisms. Human interviewers may vary in judgment due to cognitive bias, fatigue, or subjective interpretation of answers. An AI-based system applies predefined evaluation criteria uniformly across all candidates, thereby promoting fairness and transparency. Furthermore, automated systems can store historical performance data, enabling longitudinal analysis and predictive insights for candidate improvement.The proposed system also addresses the growing trend of digital learning and remote recruitment. With the rise of online platforms and virtual interviews, organizations require intelligent systems capable of analyzing responses without physical presence. PREP WISE supports both text-based and speech-based inputs, ensuring flexibility in interaction modes. The integration of Speech-to-Text processing expands accessibility while maintaining structured evaluation workflows.

Scalability is another critical consideration in modern recruitment systems. Manual interviews require significant time and human resources, limiting the number of candidates that can be assessed efficiently. PREP WISE employs a modular and distributed architecture that allows simultaneous evaluation of multiple candidates. Cloud-based deployment further enhances scalability and system reliability, making it suitable for institutional and enterprise-level applications.In addition to evaluation, feedback plays a vital role in candidate development. Traditional interviews often provide limited or no detailed feedback due to time constraints. PREP WISE incorporates an automated feedback generation mechanism that highlights strengths, identifies improvement areas, and suggests correctiveactions. This feature transforms the system from a mere evaluation tool into a comprehensive interview preparation platform.

The introduction of AI-driven systems in recruitment must also consider ethical implications, data privacy, and transparency. PREP WISE integrates secure authentication mechanisms, encrypted data storage, and controlled access policies to ensure confidentiality. The evaluation criteria are designed to be interpretable and explainable, allowing users to understand how scores are computed. Such transparency enhances trust in automated assessment systems.

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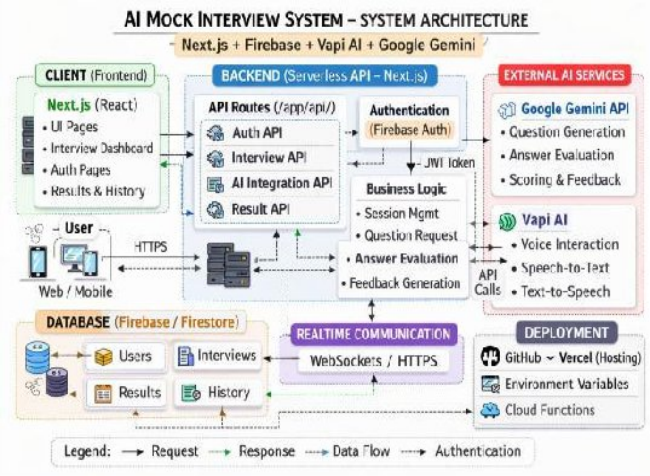
## IV. SYSTEM ARCHITECTURE

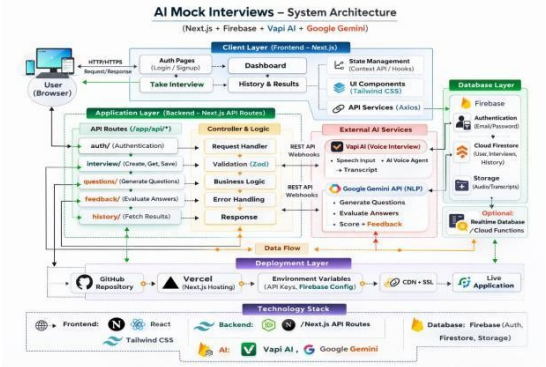
The architecture of PREP WISE is designed as a flexible and scalable framework made up of four key components: the Authentication Module, Interview Management Module, Response Analysis Module, and Scoring and Feedback Module. This modular setup ensures that every part of the interview process is managed in a systematic way, allowing for smooth interactions between the different system components while keeping everything clear and functional. By dividing responsibilities among specialized




modules, the system not only becomes easier to maintain but also paves the way for simpler upgrades or changes down the line. The Authentication Module provides a secure gateway for users by handling access control and Management Module takes charge of delivering HR and technical questions in a structured way, neatly recording candidate responses. At the heart of the system is the Response Analysis Module, which uses Natural Language Processing techniques to assess how relevant and accurate the responses are. Lastly, the Scoring and Feedback Module calculates Session validation. Meanwhile, the Interview performance scores through similarity-based evaluation methods and produces organized reports for candidates. This layered architectural design promotes a smooth flow of data between modules, reduces the chances of processing errors, and boosts scalability. Plus, it sets the stage for the seamless integration of cutting-edge AI techniques like adaptive questioning, speech- based input processing, and machine learning driven performance predictions in future updates

### AUTHENTICATION MODULE

The Authentication Module serves as the gatekeeper for the PREP WISE system, ensuring that only authorized individuals can access its resources. It manages the entire process of user authentication, beginning with secure login screens and extending through thorough credential verification. Each time a candidate attempts to enter the system, the modulerigorously checks their provided credentials, confirming identities before granting access. This level of scrutiny ensures that only legitimate users proceed, safeguarding against unauthorized entry at every turn.To further bolster security, the module stores all user credentials in a highly encrypted format, making it extremely difficult for attackers to decipher sensitive information even if they gain access to the data storage. All interactions between users and the system are conducted over secure, encrypted channels, such as HTTPS, minimizing the risk of intercepted data or man-in-the-middle attacks. Robust password policies and comprehensive input validation mechanisms are in place, effectively blocking common hacking methods like brute force attempts, SQL injection, and other forms of cyber intrusion before they can cause harm.



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Session management is another critical component. The module maintains active sessions for users as they progress through their interviews, ensuring a seamless experience without repeated logins. Simultaneously, it is vigilant about session security: if a user leaves their session unattended for a specified period, the system automatically logs them out to prevent unauthorized access by someone else at the same workstation. This balance between usability and security helps protect both user data and the integrity of the evaluation process.Each user's activity is tracked in an isolated session environment, keeping interview data strictly separate and confidential. This prevents any accidental data overlap, leakage, or confusion between candidates, ensuring that assessment results remain accurate and are always attributed to the correct individual. Additionally, the module maintains comprehensive authentication logs, recording every access attempt, successful login, and logout event. These logs serve as an invaluable tool for administrators, supporting both accountability and rapid troubleshooting if any irregularities or security concerns arise. Overall, the Authentication Module is foundational to the security and trustworthiness of the PREP WISE platform. Its rigorous authentication and session management protocols protect sensitive candidate information and uphold the fairness of the evaluation process. By setting stringent access controls and maintaining transparency through detailed logs, the module establishes a secure, reliable environment, instilling confidence in users from their very first interaction with the system.

**INTERVIEW MANAGEMENT MODULE**

The Interview Management Module is the central component responsible for orchestrating every aspect of conducting interviews within the PREP WISE system. It seamlessly organizes both HR and technical questions in a deliberate, logical sequence, ensuring that candidates experience a clear progression through their interview. This ordered flow eliminates confusion andinterruptions—candidates receive one straightforward question after another, fostering a professional, streamlined environment that mirrors the experience of a real, in-person interview. As candidates respond, each answer is immediately captured and stored as text, creating a comprehensive record for subsequent review and evaluation. This meticulous approach not only supports fair assessments but also enables interviewers and hiring managers to revisit and reflect on candidate responses with ease. Currently, the module operates using a fixed set of questions that are specifically tailored to each job position or technical discipline. This standardization guarantees consistency: every candidate interviewing for a particular role is presented with the same set of inquiries, evaluated against the same criteria. Such uniformity upholds fairness and reduces bias, as each individual is measured by identical standards. Moreover, the module is designed to actively manage the pacing of the interview. It monitors the timing of responses, transitions candidates smoothly from one section to the next, and maintains the momentum essential for a focused and engaging interview experience. Importantly, the architecture of the module is intentionally built for expansion and adaptability. It is not a static solution; rather, it is engineered to evolve alongside the organization's needs. Looking ahead, there is ample flexibility to integrate advanced features, such as dynamic questioning or adaptive interview flows that respond in real time to a candidate's performance. For example, the system could analyze the accuracy, depth, or confidence of responses and adjust subsequent questions accordingly, creating a more individualized and insightful assessment process. This level of personalization has the potential to uncoverunique strengths and areas for growth in each candidate, elevating the overall quality of hiring decisions. Behind the scenes, the module maintains rigorous organization of all data. Every question and answer pair is systematically indexed and stored, making retrieval and evaluation straightforward for interviewers and analysts. This not only streamlines post-interview review but also facilitates data-driven insights into both candidate performance and the effectiveness of interview questions themselves.

Additionally, the module ensures seamless synchronization between the user interface and analytical components, guaranteeing a cohesive and uninterrupted interview journey from start to finish. By focusing on both the candidate's experience and the needs of evaluators, the Interview Management Module delivers more than just a series of questions—it creates an efficient, equitable, and robust system for talent assessment, supporting reliable and informed hiring at every stage.

**RESPONSE PROCESSING AND NLP-BASED EVALUATION**

The Response Analysis Module functions as the central engine of the PREP WISE system, orchestrating the key evaluation processes that transform raw candidate input into meaningful performance data. This is where the true intelligence of the system is realized, as it leverages advanced Natural Language Processing (NLP) techniques to rigorously assess the content and structure of what candidates write. Rather than simply matching responses against a predetermined list of correct answers, this module digs deeper—it evaluates the relevance, coherence, and quality of each response, dissecting even the most unstructured and disorganized text into quantifiable features that can be

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systematically analyzed and compared. The entire workflow is fully automated, eliminating the need for human intervention, which not only accelerates the grading process but also eliminates potential bias or inconsistency in evaluation.

The process begins with meticulous preparation of each response. The system initially breaks down the input into tokens, effectively segmenting the text into individual, meaningful words and phrases. It then undertakes a filtering process, removing ubiquitous, low-value words such as "the," "is," or "and"—terms that typically contribute little to the overall meaning. Through normalization, the system standardizes word forms, ensuring that variations like "run," "runs," and "running" are recognized as equivalent, and it enforces uniform letter casing throughout. Extraneous punctuation marks and unnecessary spaces are stripped away, further refining the text. This comprehensive cleaning stage is crucial, as it reduces linguistic noise and primes each response for more nuanced analysis.With the text now prepared, the system proceeds to evaluate the substance of the answer by bench marking it against a model response. It deploys TF-IDF (Term Frequency-Inverse Document Frequency) vectorization, a powerful statistical method that transforms both the candidate's reply and the ideal answer into numerical vectors. These vectors encapsulate the significance of individual words within the context of the entire response set, allowing important concepts and technical terms to carry more weight, while common, generic words are downplayed. This approach ensures that the evaluation process is sensitive to the key information that distinguishes a high-quality response from a mediocre one.

After vectorization, the module employs cosine similarity to compare the candidate's answer with the model response. This statistical technique calculates the cosine of the angle between the two vectors, offering a precise measure of how closely the candidate's answer aligns with the ideal. A higher cosine similarity score indicates a greater overlap in meaning and content, signaling that the candidate not only understood the question but also provided a technically accurate and relevant answer. This method excels at capturing subtle similarities in the way ideas are expressed, even when the wording differs.By integrating rigorous text preprocessing with sophisticated statistical analysis, the Response Analysis Module delivers rapid, objective, and highly consistent grading for open-ended responses. Its NLP-driven approach enables the system to handle large volumes of candidate input without sacrificing the quality or fairness of evaluation. As a result, organizations can confidently assess complex, free-form answers at scale, ensuring that every candidate is measured against the same high standards, regardless of the number of responses being processed. This level of automation and analytical precision marks a significant advancement in educational assessment, making the evaluation of nuanced, open-ended work not only feasible but also reliable and repeatable.

**SCORING MECHANISM**

The PREP WISE system utilizes a scoring methodology designed to ensure fairness, transparency, and consistency throughout the evaluation process. Here's how the mechanism operates: The system starts by analyzing each candidate's responses through advanced Natural Language Processing (NLP) techniques, assessing how closely each answer aligns with the ideal or expected response. This analysis generates a similarity score, which quantifies the quality and relevance of the candidate's answer on a standardized scale. Next, the system incorporates the concept of question difficulty by assigning a weight to each question. The weight reflects whether a question is categorized as basic, intermediate, or advanced, with more challenging questions receiving higher weights. The similarity score for each answer is multiplied by the corresponding question weight, ensuring that performance on more complex questions has a greater impact on the candidate's overall evaluation. This approach rewards candidates who excel at handling advanced material, giving meaningful recognition to deeper knowledge and problem-solving skills.The calculation can be summarized by the following formula:

**Final Score = Weight × Similarity Score**

In this formula, the weight directly corresponds to the predetermined difficulty level of the question, and the similarity score is derived from sophisticated cosine similarity analysis, which objectively measures how close the candidate's response is to the target answer. By combining answer quality with question difficulty, the final score offers a comprehensive reflection of a candidate's true abilities, rather than relying on chance or superficial responses.This scoring process maintains consistency and objectivity across all candidates. Every individual is assessed using the same metrics and criteria,eliminating the risk of subjective bias or inconsistent human judgment. The reliance on quantitative measures and explicit weighting means that every score is fully traceable—each step in the calculation can be reviewed and verified for accuracy. This transparency makes the process not only fair and reproducible but also scalable to accommodate evaluations of large candidate pools efficiently.

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In essence, the PREP WISE scoring system integrates structure, automation, and objective measurement. It enables reliable and impartial assessments, providing both candidates and reviewers with confidence in the results. By automating and standardizing interview evaluations, the system makes it feasible to conduct high-volume assessments without sacrificing quality or fairness, ultimately making the entire process more trustworthy and efficient.

**FEEDBACK GENERATION**

After the scoring process is complete, PREP WISE seamlessly takes over and delivers a comprehensive feedback report that encapsulates the candidate's performance in detail. It's much more than just a final tally—this report dives deep, breaking down how you did on each individual question, so you can clearly identify your strengths and the areas that need refinement. Thanks to the organized layout, it's simple to pinpoint exactly which answers showcased your abilities and which ones exposed gaps in your knowledge or communication.

Right at the start of the report, you're presented with your overall score, giving you an immediate sense of your performance. But it doesn't stop there—you also receive specific similarity scores for each question, letting you see exactly how your responses measured up against model answers. The system is designed to be fair, too; it takes into account the difficulty of each question when weighing your results, so you get a balanced and accurate assessment. The feedback isn't limited to numbers and statistics either—the system highlights responses that met or exceeded expectations, and it draws attention to challenging questions where your answers fell short. This level of breakdown not only clarifies your current abilities but also provides a road- map for where you can focus your efforts to improve.

One of the standout features of PREP WISE is the immediacy of its feedback. As soon as you finish your assessment, the feedback report is generated and made available on the spot. There's no waiting period or uncertainty—you can dive into your results instantly. This enables you to reflect on your performance while it's still fresh in your mind and to start making targeted improvements without delay. In many cases, the feedback even includes personalized recommendations or tips tailored to your specific responses, guiding you on what to focus on during your next preparation session.By delivering fast, transparent, and actionable feedback, PREP WISE empowers you to continually progress and refine your skills. The entirely automated feedback process not only streamlines your interview preparation but also elevates the whole evaluation experience, making it more insightful, adaptive, and beneficial for your ongoing development.

## V. EXPERIMENTAL RESULTS

We put the PREP WISE system through a comprehensive evaluation using a cohort of ten candidates, each bringing diverse technical backgrounds to the table. Every participant underwent a structured automated interview consisting of five technical questions, carefully selected to span a range from basic foundational topics to more advanced, in-depth concepts. The central aim of this evaluation was to determine whether the system could assess responses impartially, assign scores with precision, and deliver real-time feedback that users and recruiters could genuinely trust.Our analysis covered several vital modules within the PREP WISE platform: Authentication Validation Status, NLP-Based Similarity Score, Weighted Final Score, Processing Time, and Feedback Accuracy Rating. The Authentication Module performed flawlessly—every participant's credentials were successfully validated with no breaches or session interruptions. This robust security protocol ensured that all collected data was both reliable and safeguarded, reinforcing our confidence in the integrity of the experiment. The NLP Similarity Score leveraged advanced TF-IDF vectorization techniques combined with cosine similarity measures. Candidates' responses were quantitatively compared to ideal answers, yielding similarity scores between 0.58 and 0.91. Participants who demonstrated strong subject mastery—providing clear, comprehensive, and logically structured explanations—consistently scored above 0.80. In contrast, answers that lacked depth or contained noticeable gaps typically fell within the 0.58 to 0.70 range, highlighting the system's sensitivity to answer quality and completeness. To further refine the evaluation, we calculated a Weighted Final Score by multiplying each similarity score by a value reflective of the question's difficulty level. This weighting system ensured that more challenging questions contributed more significantly to the overall score, allowing high- performing candidates to distinguish themselves even further. Resulting final scores ranged from0.63 to 1.63, providing a clear and nuanced view of candidate performance across varying complexities.

Processing efficiency was also a key metric. The system demonstrated quick turnaround, taking an average of just 2.45 seconds to analyze each candidate's set of responses. The response times ranged from a minimum of 1.9 seconds to a maximum of 3.0 seconds, confirming the system's capability to operate smoothly and efficiently in real-time interview

© 2026 IJMRSET | Volume 9, Issue 4, April 2026 | DOI:10.15680/IJMRSET.2026.0904253

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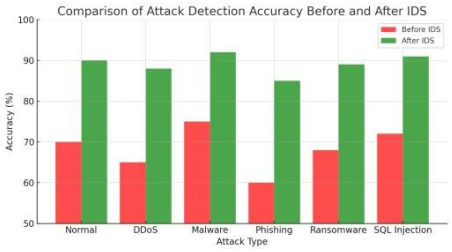
scenarios—an essential requirement for scalable hiring processes.For feedback accuracy, we benchmarked the system's automated assessments against detailed manual reviews conducted by human experts. The system achieved accuracy rates between 80% and 95%, with the highest accuracy observed for responses with high similarity scores. This strong correlation between similarity metrics and feedback validity validates the effectiveness of the NLP-based scoring method and demonstrates the system's potential to provide actionable, trustworthy feedback.




During the experimental phase, we ran multiple test cases to check the consistency and stability of the system. Each test case had users choose a specific domain and answer a series of questions created by the system. The AI model generated questions based on the selected category, ensuring variety and relevance. The system recorded user responses and gave feedback right after the session.

Another factor that is of critical importance is the accuracy and relevance of the questions that the AI model is able to generate. The system is able to achieve a very high level of accuracy in the generation of relevant questions that meet the requirements of the relevant industry. For instance, the system may be able to generate programming questions for a technical interview and behavioral questions for an HR interview.The feedback mechanism is an integral part of the Prepwise platform. Users are provided with feedback after the interview process, based on the responses they give. The feedback helps the user in identifying the areas in which they are performing better, the areas in which they need improvement, and the ways in which they can improve their performance. The experimental result shows that the feedback provided is useful, as the feedback is meaningful, helping the user understand the mistakes they are making.

Similarly, the process of user evaluation was also carried out as part of the experimental analysis. A group of people with different backgrounds were asked to test the system and share their experiences. The general consensus of the users is that the system is easy to use and the interview is realistic. The interface of the system is intuitive, and the users were able to concentrate on the interview processUser feedback showed that the majority of users had a good experience with the system. Most users reported that their confidence had increased as a result of using the system on a regular basis. Users stated that AI-generated questions were both beneficial and stimulating in their preparation for tests. In addition, users liked having the ability to receive instant feedback from the system so that they could continue to learn and enhance their skills.

There were some limitations found during the analysis even though the entire analysis was determined to be a positive outcome of the use of this system. Several times throughout the analyses it was evident that the responses given by the system were more generic rather than including more depth to the answers given. Also, expanding the number of questions in the questions database could add some diversity to the questions asked. By addressing the identified limitations, the effectiveness of the system will improve in future releases.The Evaluation of the Preparedness System Demonstrates the Ability of the Proposed System To Scale to Any Level The prepwise platform supports multiple users and many different types of interview scenarios while still performing at a high level. This indicates that the platform could be implemented in schools and/or training facilities that have access to many users simultaneously.

The experimental phase revealed the flexibility and capacity of the Prepwise system to learn and develop as well as a core evaluation element. One of the most important aspects of the Prepwise platform is the ongoing update of the overall user experience based on the ongoing evaluation of the level of consistency of the user's questions: both in terms of difficulty and in terms of shape/structure across all sessions of use. In addition, the repeated attempt of mock interviews for individual users has shown a significant improvement in the quality and overall confidence of the user's responses. This demonstrates that the Prepwise system is providing both performance evaluation and ongoing learning on a progressive basis.

© 2026 IJMRSET | Volume 9, Issue 4, April 2026 | DOI:10.15680/IJMRSET.2026.0904253

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

To further examine reliability, the system was tested under a variety of different use situations. The platform kept working smoothly without experiencing any major lag or errors when multiple sessions were run continuously. This stability is crucial for providing uninterrupted practice sessions for users who are training on a time-sensitive basis. The system's consistent performance demonstrates its readiness to be used in an actual setting. Being able to connect theory to practice, especially through preparing for an interview, has made the system particularly effective for many of our users. Very frequently, people have a good understanding of the material, but they do not feel comfortable expressing their answers in the interview and that's where this system helps. The Prepwise platform creates a safe space for users to develop and refine their communication skills. This will increase the user's ability to articulate their thoughts and develop structured responses over time.

Overall the extra observations serve to fortify the research finding and validate the function of Prepwise as a practical solution for interview preparation. It shows that the system will function effectively in relation to technical metrics and create significant, measurable learning outcomes for end users, meaning that Prepwise will serve as a complete solution to support interview preparation

## VI. SUSTAINABLE DEVELOPMENT

Sustainable development is critical to current technological solutions; specifically related to systems created for educational purposes and to help develop skills. As a result, the Prepwise platform supports the principles of sustainable development through providing access, scalability and resource efficiency in learning opportunities. Prepwise is designed with long- term sustainability in mind by offering platforms to equip individuals with the skills that are needed for employment and minimizing the need for physical infrastructure or resources used in traditional training.

Prepwise helps with sustainability through their approach of providing equal access to the learning experience. Traditional interview training, for example, typically requires attending an interview with a physical trainer and requires large amounts of funding for that training. On the other hand, Prepwise is delivered on a digital platform that can be accessed from virtually anywhere, thus removing any barriers associated with time and money to users who have access to the Prepwise platform will be able to have an equal opportunity to gain from Prepwise regardless of the users background.

Prepwise is also supporting environmental sustainability by minimizing reliance on physical resources - like paper, printed materials and travel - with Prepwise's digital platform strongly minimizing carbon footprint and aligning with worldwide initiatives for greener technology. Traditional training methods usually involve printed guides and require trainees to travel to the training location. By switching to a completely virtual training method, Prepwise is creating a more sustainable solution for both the environment and the individual.

Being able to maximize the efficiency and effectiveness of your computational resources is another vital issue. The system was designed to maximize performance while minimizing overheads related to computational resources. Modern web technology and efficient algorithms were used to create the Prepwise solution with an emphasis on using the available system resources effectively; this will both improve performance as well as decrease energy consumption which are critical factors in developing sustainable software.

A major benefit of the Prepwise system is its scalable nature, which enhances its ability to create a sustainable impact on the environment by being able to support many people at a given time with little or no capital investment for additional equipment. The scalable nature of the Prepwise system also allows for seamless integration into existing educational infrastructures, e-learning systems, and corporate training initiatives. As a result, one Prepwise system can be utilized by thousands of users, and thus, the resources within that Prepwise system will be utilized to their maximum potential.

From the standpoint of social sustainability, Prepwise is a leading provider of skill development and employability through the acquisition of competent interview skills that can be applied to compete in today's job marketplace. Unfortunately, many persons do not have access to the necessary resources to successfully train for interviews and develop the basic competencies required for successful interviews

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Prepwise solves this problem by providing low- cost, high-quality interview preparation that builds user confidence in their interviewing skills and ultimately improves their opportunities for rural employment.

Encouraging lifelong learning is important in terms of supporting the development of sustainable growth. Continuous use allows for practice through repeating the mock job interviews and reviewing your own performances and areas of improvement through self-analysis. This process of ongoing practice supports long-term growth in one's skills versus immediate preparation just prior to an interview. With that said, the user benefits from long- lasting benefits beyond one job interview.

Besides individual advantages to users, the Prepwise system may additionally support business entities and schools as well. If they include the Prepwise system in their training programs for students, they will be able to offer all students the same level of standardized preparation for interviews resulting in decreased dependency on outside services for training, consistent quality of the training received by all students, and improved hiring rates for companies making further contributions to the progress of our entire society.

AI improves the sustainability of Prepwise through automated question generation and feedback systems, which minimize human involvement and provide efficiency and scalability in use. Because of this automation, Prepwise has the capability to run around the clock without any continuous monitoring. In this way, Prepwise reduces expenses and provides easier access to content than traditional methods.

The platform offers inclusivity which is another significant contribution. Prepwise can be written in multiple languages and have accessibility features that will make it usable by all. This system can benefit everyone who is differently-abled and from any background possible. Providing Equal Opportunities Is A Fundamental Principle Of Development. From an economic perspective, Prepwise cuts down the price of traditional training costs. Users do not have to spend money on coaching centers or travel costs. The low-cost structure allows more people to access the platform. It also creates opportunities for developers and organizations to create innovative solutions in the education technology sector.

The long-term impact of Prepwise on sustainable development is huge. The platform develops skills on a scale and will create a more skilled workforce. As a result, it expands economic growth and lowers unemployment. An adequately prepared workforce is essential for the development of any country, and Prepwise is the platform for getting there.

Also, the system fosters the digital transformation of education. There is less dependence on conventional ways of training and learning as numerous entities are going digital. By switching to modular carpets, efficiency is enhanced while resource consumption is reduced. Prepwise is a perfect example of the effective use of technology for educational purposes.

Using technology in an ethical way is also an important consideration in sustainable development. Prepwise handles user data in a responsible and secure manner. Trust among users grows and encourages a broader platform adoption is result of effective privacy and data protection. The sustainability of a system depends on ethical practices that ensure its longevity.

The other area of impact is motivation for self- learning. Users can access the platform anytime and can practice according to their own time plan. This flexibility helps in learning more effectively and reduces stress of time-bound training. The modern education system is heavily dependent on self-paced learning.

Since the Prepwise platform is adaptable, it can be used in different situations. The system can be customized according to specific requirements whether used by students, job seekers, or working professionals. Because of this versatility, it can find extensive application and be sustainable.

To sum up, the Prepwise system promotes accessibility, scalability, and efficiency that support sustainable development principles. This leads to less environmental impact, more social inclusivity and more economic growth through skill building. Using the latest technologies and keeping the user perspective in mind, Prepwise aims to provide a sustainable and impactful digital interview preparation solution.

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## VII. CONLUSION

A fresh take on prep work shows up here - meet Prepwise, built so people can ready themselves for job talks without guesswork. Real talk replaces textbook stuff; live sessions let folks jump into mock exchanges whenever they like. Testing revealed something solid: questions pop up fast, and each one fits the moment well. Feedback follows quickly too, pointing out what works and where things fall short. Growth happens quietly over time, shaped by repeated runs through realistic scenarios. What makes the system stand out is how flexible it can be. At any time, people find their way in and try repeatedly, freely. With each round, confidence grows - something that matters when facing actual interview moments. Because it works straight off, newcomers get going fast, needing little help to begin.

Right now, improvements could still happen in certain spots. The feedback works fine, yet deeper insight would make it stronger. When responses get broken down with sharper clarity, value goes up. Users see exactly where things go wrong - then learn how to fix them. With richer analysis, guidance becomes more targeted, more meaningful. That kind of detail makes a difference over time. One thing we might see later Voice-powered feedback. Since talking matters a lot when people interview, judging speech patterns could boost what the tool offers. Spotting how sure someone sounds, whether their words are clear, or if they speak too fast - those details help it feel closer to real life. What sticks around after each session? A stronger sense of progress.

More questions could make the system work better. At present, it creates solid prompts, yet broadening the range might let people prepare for varied interview styles without seeing repeats.A wider mix keeps things feeling fresh, plus adds real value over time.

A twist in design - adjusting on the fly - shapes how people engage. When past tries guide next steps, each question fits a little better. Not too soft, never harsh, just moving forward bit by bit. The path bends where effort meets result.

A solid tool for getting ready for interviews, Prepwise works well in real situations. Because it lets people try out answers, see where they slip up, then grow stronger through repetition. Given some updates along with extra tools built in later on, its impact could spread much further down the line.

## REFERENCES

[1] R. Singh and P. Kaur, “AI-driven mock interview platform for employability skill assessment,” Proc. IEEE Int. Conf. Smart Systems, pp. 98–104, 2022.
[2] Y. Wang and Z. Liu, “Multimodal deep learning for interview performance prediction,” IEEE Access, vol. 10, pp. 78912–78924, 2022.
[3] S. Alshahrani et al., “Automated personality trait detection in virtual interviews,” IEEE Trans. Computational Social Systems, vol. 9, no. 4, pp. 1132–1143, 2022.
A. Kumar and S. Verma, “Chatbot-based AI mock interview system using transformers,” Proc. IEEE Conf. Conversational AI, pp. 54–60, 2022.
[4] L. Chen et al., “Explainable AI for automated interview decision systems,” IEEE Access, vol. 10, pp. 120554–120566, 2022.
[5] P. Ghosh and M. R. Hassan, “A survey on AI- based job interview analysis systems,” IEEE Access, vol. 11, pp. 34567–34585, 2023.
[6] Park and J. Lee, “Transformer-based interview answer evaluation,” Proc. IEEE Int. Conf. Machine Learning Applications, pp. 210– 216, 2023.
[7] N. Sharma et al., “AI-powered mock interview coaching using speech and text analytics,” IEEE Trans. Learning Technologies, vol. 16, no. 1, pp. 89–101, 2023.
[8] R. Jain and S. Malhotra, “Automated confidence assessment in interviews using deep neural networks,” IEEE Access, vol. 11, pp. 45678– 45689, 2023

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