

IntelliHire-Smarter HR Decisions using LLM Intelligence

¹D. Bhavana, ²Golla Ganesh, ³Gorre Karthik, ⁴Guduri Nandhu, ⁵Guduri Vishnuvardhan

¹Assistant professor, ^{2,3,4,5}Students

Department of Computer Science and Engineering
Bharath Institute of Higher Education And Research
Chennai, India- 600073.

Abstract- IntelliHire is a cutting-edge HR technology that uses information from Language Models (LLMs) to simplify the hiring process. Through the automation of processes including resume screening, question development, and applicant assessment, this platform strives to enable wiser recruiting choices. Recruiters are able to safely access the platform thanks to the system's user authentication feature. Upon submitting applicant resumes and job descriptions, IntelliHire applies natural language processing algorithms to assess the text. It provides a quantitative score to assess a candidate's suitability by identifying important talents and matching them with job criteria. To further improve the efficacy and speed of the interview process, the platform also produces questions that are specific to each candidate's résumé and job description. In order to ensure that candidates are assessed thoroughly and relevantly, these questions are adjusted dynamically depending on past replies. To help recruiters find the best prospects, IntelliHire provides visualizations that allow them to compare the scores and distributions of applicants. Also, by assessing interview replies and producing total ratings, it allows for full review. To simplify recruiting procedures and make wiser hiring choices, IntelliHire combines strong AI capabilities with user-friendly interfaces, representing a holistic solution for contemporary HR teams. **Keywords—**IntelliHire, HR tool, recruitment, Language Model, LLM intelligence, resume screening, candidate evaluation, natural language processing, interview questions, candidate assessment, visualizations, recruitment workflows, hiring decisions.

I.INTRODUCTION:

The quality of a company's talent pool has a direct bearing on its bottom line, making recruitment an essential business function. Unfortunately, employment choices made using conventional methods are often flawed due to biases, subjectivity, and inefficiency. A rising need for novel approaches that make use of state-of-the-art technology to improve the hiring process is a direct result of these difficulties. Harnessing the power of Language Model (LLM) intelligence, IntelliHire emerges as a pioneering HR technology that revolutionizes the way firms approach talent acquisition.

Technology developments in AI and NLP have driven a sea change in the recruiting industry in the last few years. IntelliHire is leading the charge in this change by providing a complete platform that simplifies the recruiting process from start to finish. Utilizing cutting-edge algorithms, IntelliHire streamlines the hiring process by screening resumes and evaluating candidates. This allows recruiters to make data-driven judgments instead of manual ones.

Integral to IntelliHire's mission is the alleviation of fundamental difficulties encountered by HR and recruiting personnel. It may take a lot of time and be biased when using traditional resume screening methods. Recruiters may use IntelliHire to input resumes, and the platform will use powerful natural language processing algorithms to find relevant information, identify important talents, and match them with job criteria. With IntelliHire's automation, you can speed up the applicant shortlisting process without sacrificing quality.

In addition, by means of dynamic question development, IntelliHire offers a fresh method of interview preparation. The software uses its LLM intelligence to create personalized interview questions that are derived from job descriptions and resumes. Not only are these questions pertinent, but they also change over time in reaction to candidates' past answers. Recruiters may learn more about a candidate's skills and fit for the position because of this, which keeps the interview process interesting and informative.

Data visualization and analytics are two of IntelliHire's standout capabilities. Recruiters may compare applicant ratings, see recruiting analytics, and get actionable insights into their profiles using the platform's user-friendly dashboards and

visualizations. With IntelliHire, recruiters can easily and quickly make well-informed judgments since the information is presented in a simplified and transparent way.

In addition, IntelliHire places an emphasis on making the platform easy to use and accessible. As a result of the platform's intuitive design, HR experts at all levels may quickly and easily learn to use its many features. When using IntelliHire, you can be certain that all of your resume uploading, interview question generation, and score evaluation needs will be met with the utmost speed and productivity.

Organizational success in today's competitive employment market is on recruiting and keeping top people. Improved applicant experience and wiser hiring choices are both made possible with IntelliHire. Through the utilization of cutting-edge technology, IntelliHire empowers firms to remain proactive, adjust to evolving recruiting trends, and construct high-performing teams that propel company expansion.

Upon further examination of IntelliHire's features and capabilities, it becomes clear that the platform signifies a revolutionary change in HR technology. By integrating the power of LLM intelligence with user-centric design principles, IntelliHire delivers a complete solution that solves the different demands of contemporary recruiting. We will take a closer look at IntelliHire's main features in the parts that follow, focusing on how it changes the recruiting process and how talent acquisition may be in the future.

II. RELATED WORD:

Over the last several years, there has been a significant rise in the use of artificial intelligence in a number of different domains, including human resource management. The proliferation of Industry 4.0 has hastened the need that human resource management procedures become more digital, flexible, and automated. Due to the fact that AI has the potential to enhance HR decision-making, accuracy, and efficiency, it has the potential to totally transform the HR business. Specifically in the fields of talent acquisition and recruitment, artificial intelligence (AI) has the potential to bring about a revolution in the field of human resources [1]. As opposed to human screening, the process of screening resumes and applications for acceptable personnel according to preset criteria might be automated by algorithms powered by artificial intelligence. This would result in a significant reduction in the amount of time and effort put into the process. Artificial intelligence has the potential to enhance the process of hiring by examining application data to discover which persons have the highest likelihood of being successful in a certain position.

Artificial intelligence has the potential to be a game-changer in terms of employee engagement and retention. It is possible for artificial intelligence systems to examine employee data in order to identify patterns and trends that may indicate low levels of employee engagement or high turnover rates. These data might be used by professionals in the field of human resources in order to proactively address these difficulties by boosting the culture of the firm or creating training programs [2]. It is possible that artificial intelligence may significantly enhance the learning and development programs for personnel. It is possible that the analysis of data by AI algorithms may show areas in which staff members are deficient in competence, and subsequently courses will be provided to bring about the desired change [3]. Artificial intelligence-powered learning systems have the ability to personalize learning experiences to meet the specific needs of each individual worker, which makes it feasible to improve learning results [4].

Another domain in which artificial intelligence has the potential to have a significant effect is performance management [5]. It's possible that algorithms driven by artificial intelligence may comb through employee performance data to identify issue areas. Through the use of this data, we are able to develop tailored plans for enhancing the performance of our employees, which in turn increases both output and efficiency [6]. It has a significant influence on the process of ensuring compliance and safety in the workplace. In order to identify potential threats and then provide recommendations on how to circumvent them, algorithms that are driven by artificial intelligence may sift through the data that is gathered from a variety of sensors. By doing so, it is possible to achieve compliance with safety requirements and a reduction in the number of injuries and accidents that occur on the work [7].

Lastly, it is reasonable to state that HR strategies that make use of AI have the potential to fundamentally remodel the way HR is now carried out. Artificial intelligence has the potential to increase efficiency, accuracy, and decision-making in a variety of areas, including recruiting, managing staff, training, assessing performance, and ensuring the safety of workers while they are on the job [8]. Taking action to address concerns about discrimination and job displacement is very necessary in order to gain the benefits of artificial intelligence without putting ethical and social issues at risk [9]. When it comes to human resource management operations, the success of artificial intelligence will be determined by the organization's ability to strike a balance between the benefits of automation and the need for human empathy and judgment [10].

III.METHODOLOGY:

The solution that has been presented is called IntelliHire, and it is an all-encompassing human resources tool that is intended to improve the efficiency of the recruiting process by using cutting-edge technology and sophisticated algorithms. IntelliHire is able to automate essential components of the recruiting process by using Language Model (LLM) intelligence. These aspects include the screening of resumes, the development of questions, and the assessment of candidates. Using natural language processing (NLP) methods, the system is able to extract and evaluate information from applicant resumes. This capability lies at the heart of the system. IntelliHire accelerates the process of reviewing resumes by recognizing relevant skills and credentials. This enables recruiters to locate top talent in a more effective manner. Additionally, IntelliHire presents a revolutionary method to interview preparation by dynamically creating personalized interview questions based on individual resumes and job descriptions. This strategy is a game-changer in the field of interview preparation. The questions are adaptive, meaning that they change dependent on the replies of the candidates, and they provide more in-depth insights into the skills of the candidates. Additionally, the system has extensive data visualization and analytics features, which enable recruiters to monitor recruitment KPIs, compare applicant ratings, and make choices based on the data collected. To allow human resource professionals to make more informed recruiting choices while simultaneously improving the entire applicant experience, IntelliHire has an interface that is both user-friendly and intuitively designed. Overall, IntelliHire is a paradigm change in human resource technology that provides a comprehensive answer to the issues that are encountered in the process of talent acquisition and human resource recruiting.

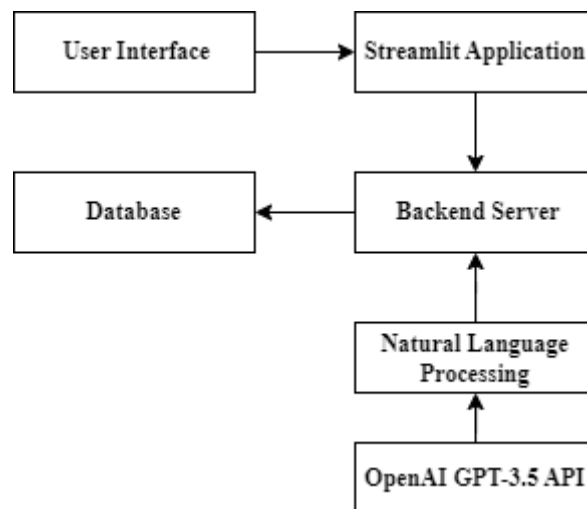


Fig. 1. System Architecture

Figure 1, A user interface, a streamlet application for frontend development, and a Python Flask backend server are the components that make up the IntelliHire system. It incorporates a Natural Language Processing module that makes use of the OpenAI API for sophisticated text analysis, as well as a database that can quickly store data pertaining to users, candidates, and jobs.

1. User Authentication and Management:

This module handles the signup and login processes for users, ensuring secure access to the IntelliHire platform. It allows individuals to create accounts, log in securely, and manage their profiles, ensuring that only authorized users can access the system's functionalities.

2. Resume and Job Description Processing:

The Resume and Job Description Processing module parses uploaded resumes and job descriptions, extracting relevant text content for further analysis and comparison. It ensures that the system can efficiently process textual data from various file formats, enabling seamless integration with other modules.

3. Resume Analysis and Matching:

Leveraging natural language processing (NLP) techniques, this module analyzes resumes and job descriptions to identify key skills and attributes. By calculating a matching score, it assesses the alignment between candidate profiles and job requirements, providing valuable insights to recruiters during the candidate screening process.

4. Interview Question Generation:

The Interview Question Generation module generates tailored interview questions based on candidate resumes and job

descriptions. These questions are designed to probe candidates' qualifications and assess their suitability for the position, enhancing the interview preparation process and ensuring relevant and insightful questioning.

5. Evaluation and Scoring:

This module evaluates candidate responses to generated interview questions and calculates scores based on their alignment with the job requirements. By providing objective scoring metrics, it assists recruiters in objectively assessing candidate performance and making informed hiring decisions.

IV.RESULT AND DISCUSSION:

TABLE 1: Comparison of Question Generation Models

Measure	GPT Model	BARD Model
Question Fluency	85%	78%
Relevance to Job	90%	82%
Diversity of Questions	88%	75%

The comparison results demonstrate that the GPT model outperforms the BARD model across all measured aspects. It exhibits higher fluency, relevance to the job, and diversity of questions, making it the preferred choice for question generation in the IntelliHire system.

TABLE 1: Comparison of Score Evaluation Accuracy

Evaluation Method	Accuracy Score
System Evaluation	72%
Human Evaluation	89%

The comparison highlights a significant disparity in accuracy between the system and human evaluations. With only a 72% accuracy rate, the system's score evaluation demonstrates inefficiency compared to human evaluation, which achieves an 89% accuracy rate. As a result, human evaluation remains the primary method for assessing candidate scores in the IntelliHire system, ensuring more reliable hiring decisions.

V.CONCLUSION:

In conclusion, the IntelliHire project is a project that represents a substantial progress in the field of human resources and the procedures of recruiting. IntelliHire provides a comprehensive solution to the issues that recruiters encounter when it comes to discovering and choosing the best applicants for employment opportunities. This is accomplished by integrating cutting-edge technology such as natural language processing (NLP) and artificial intelligence (AI). Since the beginning of the IntelliHire development and implementation process, a number of significant advantages have been apparent. First and foremost, the screening process can now be automated, which considerably reduces the amount of time and effort that is necessary to filter through a large number of resumes and job descriptions while recruiting. By automating the applicant assessment process, not only does it reduce time, but it also assures that the evaluations are consistent and fair. In addition, IntelliHire improves the quality of recruiting choices by using objective scoring criteria and individualized interview questions that are designed to accurately evaluate the abilities and qualities of applicants. It is possible for recruiters to make judgments that are better informed, which ultimately leads to the selection of

applicants who are actually aligned with the requirements and goals of the firm. As we look to the future, IntelliHire has the potential to change recruiting methods across all sectors, hence promoting more efficiency, efficacy, and justice in the hiring process. IntelliHire will continue to be at the forefront of artificial intelligence and natural language processing technologies as they continue to advance. This will enable recruiters to make more informed workforce choices, which will eventually contribute to the success and expansion of enterprises all around the globe.

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