

## **Use of AI in Resume Screening and Candidate Shortlisting**

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### **Abstract**

Human Resource Management has never been devoid of recruitment because the standards of people that are recruited define the future of organizations in terms of growth and success. Manual screening of resumes and shortlisting of candidates are some of the key challenges that traditional job recruitment approaches encounter in the contemporary employment industry. One job advertisement may get hundreds of resumes, and recruiters do not have many time to go through resumes in detail. The manual procedure is not only time-consuming, but also full of unconscious bias and inconsistency. Consequently, a large number of relatively qualified candidates are usually shunned and organizations lose time in vacancy filling. One approach that has come out to deal with such challenges is Artificial

Intelligence (AI). With technologies like Natural Language Processing (NLP), Machine Learning (ML), and predictive analytics, AI is able to sift through thousands of resumes within minutes, distil important qualifications, put candidates experience into context, and score suitability. AI makes the screening process more precise since they do not identify only the keywords but also the relevance of experiences. The process of shortlisting candidates is further complemented by predictive modelling, gamified tests, and AI-based video interviews that combined enable recruiters to gain even better understanding of how a candidate might perform and fit in the position. AI in recruitment has a number of benefits. It is more efficient in terms of time-to-hire, more consistent in terms of evaluations, promotes diversity since a concise bias reduces the recruitment process, and improves the candidate experience by including chatbots driven by AI that give updates and provide support. Companies like Unilever, IBM, Infosys, and LinkedIn have already implemented AI in the recruitment process and helped to cut down hiring time and enhance the quality of workforce. Meanwhile, constraints should not be disregarded. The bias in the algorithms, data privacy and laws, like the GDPR, a lack of human sense, and how the candidates view unbiased procedures are some of the reasons why AI use in recruitment must be considered with caution and moral responsibility. The general image reveals that AI does not supplant human recruiters but it is a formidable support tool. A hybrid model is the best option, though the first steps of resume screening and shortlisting are done by AI, cultural compatibility, interpersonal skills, and final selection are assigned to human recruiters. In the future, the combination of AI and other technologies like block chain to authenticate credentials, AR to create virtual tests, and emotional AI to detect personalities will continue to change the way recruitment is done. The Artificial Intelligence has thus gone beyond being a technological instrument in the employee recruiting process, it has become a philosophical change of direction into quicker, fairer, and more objective employee recruiting. Done conscientiously, it can assist organizations to obtain varied talent, boost employer branding and stay competitive in the digital age.

**Keywords:** Artificial Intelligence, Resume Screening, Candidate Shortlisting, Recruitment Efficiency, Bias Reduction, Predictive Analytics.

## **I. INTRODUCTION**

Recruitment is one of the core activities of Human Resource Management (HRM), and the quality of employees which is hired by the HR determines its productivity, competitiveness, and overall development in the long-term perspective. The high rate of digitalization's within job markets has raised both opportunities and challenges in the talent acquisition. On the one hand, sites such as LinkedIn and Indeed, Glassdoor and Naukri.com have provided companies with the opportunity to easily post the vacancies and access the global pool of talents. At the same time,

there are many more applications on a single vacancy. It has been found that the average corporate job vacancy is likely to draw around 250 applicants, while 4-6 applicants only can be invited to an interview. This puts an immense pressure on recruiters who might end up spending mere seconds looking at each resume as to whether they want to take it forward or not.

The process of manual recruitment is hence not only time-arduous, but also subject to confusion and unconscious discrimination. Other qualified candidates may not be noticed and others may be shortlisted due to mere coincidence that they have used the correct keywords. Furthermore, there is an immense expense of recruitment and urgency to hire fast, so, the traditional methods cannot be as sustainable as it used to be in the modern competitive business world

Here Artificial Intelligence (AI) will make a game-changing impact. With AI-based solutions, thousands of resumes can be screened within minutes, unstructured and structured data can be analysed, and shortlists of job-candidates who best match the job description could be made ready. Resume interpretation is done using Natural Language Processing (NLP), the results become more accurate over time with the use of Machine Learning (ML) and the ability to predict a candidate based on past behaviour is achieved through predictive analytics. This has made recruitment to be more objective, consistent, and data-driven as opposed to being mostly subjective and manual.



**Fig.1- Recruitment through AI**

### **Overview of the AI in Recruitment**

Artificial Intelligence in recruitment This is the use of complex algorithms in order to maximize the recruitment process. It is not confined to the recruitment procedure of screening resumes but covers the whole process of talent acquisition that includes sourcing talent, organization of the hiring process, onboarding of the newly hired employees. I recruitment tools are coming into practice in large organizations where concern of control over large numbers of applications arises.

The popular areas of implementing AI in recruiting are the following:

- **Resume Parsing and Screening:** AI reads, interprets and extracts information out of resumes thus providing structured candidate profiles to recruiters.
- **Candidate Matching:** AI examines resumes and matches them (with the job description).
- **Chatbots to Connect:** AI chatbots talk to candidates to answer questions, carry out updates, and schedule interviews.
- **Video Interview Analysis:** Usage of such methods as Hire Vue looks at the tone of voice, facial expression and word choice of the applicant to judge the personality attributes and communication skills.
- **Predictive Analytics:** The use of AI to determine how likely a candidate will succeed and remain in the organization based on prior candidate and performance data.

The strength of AI is that it consistently allows it to deal with volumes of data unlike human recruiters where such a task would take longer. LinkedIn uses AI in its recruitment services, through which it assesses the profiles and the activity of its users to suggest them to recruiters. Likewise, IBM Watson Talent Frameworks rely on predictive analytics to find a match between candidates and the jobs and it enhances workforce planning.

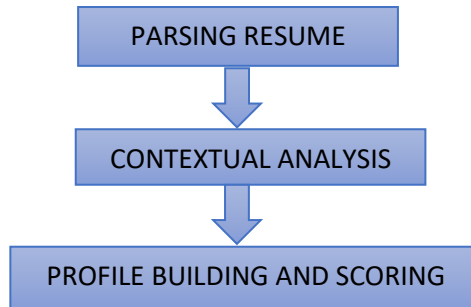
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Compared to conventional recruitment where recruitment is based on the judgment of the recruiter and is subjective, AI is fair and scalable. Nevertheless, human recruiters continue to be necessary in such aspects as final interviews, negotiations that need empathy, creativity, and cultural comprehension.

### **AI in Resume Screening**

The initial process of the recruitment process is resuming screening, which is the most labour intensive of all the processes of recruitment. Recruiters are required to go through piles of resumes, most of which do not qualify to the job. Survey indicates that approximately 75 percent of the resumes submitted in response to a corporate job are unqualified. AI enhances this process by automatic screening of resumes and eliminating ineligible candidates within the shortest time possible.

The resume screening using AI can be categorised into three following stages:



**Fig-2: Stages in resume screening**

- **Parsing Resumes:** No longer is it necessary to first read resumes to extract such data as education skills, work experience, certifications, and achievements because of the different formats and layouts and typography that resumes follow. In contrast to the older applicant tracking systems (ATS) that cast out creative or unusual resumes, the current AI tools are able to read many types of formats.
- **Contextual Analysis:** AI judges the sense and the context of words using NLP. As an illustration, when a job offers leadership skills, the AI will not search only after this keyword but will find the instances when the job candidate led a group or oversaw some work. This contextual analysis causes the issue of the so-called keyword stuffing to be reduced and the resumes to be characterized by the actual competence.
- **Profile building and scoring:** Byte level candidate profile building and a suitability score is created by AI. Recruiters are then free to concentrate on the cream of the candidates instead of trudging through all the resumes.

**Recruiter Perspective:** Recruiters, AI helps them save a lot of time and energy so they can focus more on interaction with the candidates rather than on paperwork. It also enhances likelihoods of recognizing the potentials of highly qualified candidates who may have been ignored.

**Candidate Perspective:** The implications of screening via AI on the part of the candidate are two-fold. On the one hand, it decreases discrimination because of gender, race or age. On the one hand, the candidates who do not apply typical vocabulary or whose career ladders may be considered unconventional might also be discarded. This explains why a candidate should exercise care in drafting their resume by use of the language specific to the role being applied.

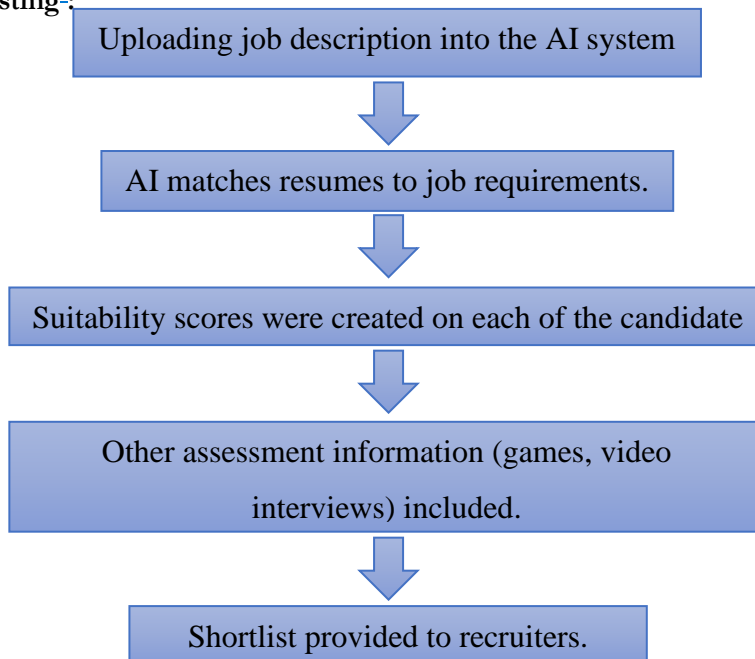
### **AI in Candidate Shortlisting**

After the resumes have been screened, AI also leverages on shortlist of candidates. Shortlisting is not purely an exercise of sieving resumes but finding candidates who have the highest chances of succeeding in the job. Its algorithms use sophisticated ranking protocols on candidates based on a number of factors:

- Academic certificates and pertinence.
- Industry experience and exposure.
- Technology expertise and qualifications.
- Growth and fruits of career.
- Test results or gamified tests.

A such Unilever evaluates problem-solving and logical ability through games based on AI. Performing well will get candidates to AI-based video interviews that evaluate tone and body language. A jury-like selection is conducted after which only the best will make it to final human interviews. This practice helps to avoid unnecessary time wastage and assures that the recruiter is focused on the candidates that possess the technical and behavioural ability on succeeding. Furthermore, AI will make it possible to benchmark the short-listed candidates to industry standards making them competitive in the outside job pool.

#### **AI Shortlisting:-**



**Fig – 3: Process involved in AI shortlisting**

This way of working removes the guess factor and the possibility of human error by being structured and data-driven.

### **Advantages of AI in Resume Screening and Shortlisting**

The implementation of AI in recruiting has a number of benefits:

- **Efficiency:** AI can go through thousands of resumes in a few minutes, saving significant amounts of time to hire.
- **Contextuality:** AI will provide more accurate job-candidate matches based on analysis of context rather than keywords alone.
- **Bias Reduction:** AI systems, when trained correctly, are blind to the factors such as the gender or even race.
- **Scalability:** AI will be able to undertake mass hiring to the large scale industries like IT and retail.
- **Consistency:** Each of the candidates undergoes assessment within the same standards thus there is greater predictability of the decisions.
- **Candidate Engagement:** AI chatbots succinctly respond, ensuring that the candidates remain engaged throughout the process.
- **Strategic Insights:** HR departments can be assisted in long-term planning of their workforce planning with the help of predictive analytics.

An example is that Deloitte found that businesses that applied AI to recruitment processes saw an increase in the efficiency of the hiring process, up to 20 and 25 percent respectively, with better staff diversity outcomes as well.

### **Challenges and Limitation**

Besides its advantages, however, AI in recruitment has a number of limitations:

- **Algorithmic Bias:** AI might make the same mistakes as their programming with a bias in data operated. Amazon also had to discard its recruitment AI that promoted male candidates because it had to work with biased historical data.
- **Key word Dependence:** There is the risk that applicants who use different terms to describe their skills are painfully locked out.
- **Privacy About Information:** resumes have sensitive personal information. Laws such as the General Data Protection Regulation (GDPR) in Europe and the Information Technology Act in India

stipulate that business enterprises need to be responsible in the manner in which they handle this data.

- **Lunch of Human Contact:** AI is unable to determine the cultural fit, empathy, and creativity. Peer-to-peer chats and human element are the things that are at risk of being lost when there is an overdependence on AI.
- **Candidate Perceptions:** A lot of candidates think that AI is robotic and impersonalizing the recruitment process.

Therefore, even though AI can make the recruitment process efficient, it requires human supervision to build fairness and understanding.

### **Case Studies and Real Time Applications**

Some of these organizations display the achievements of AI implementation.

- **Unilever:** Unilever now uses AI-enabled games and video interviews in its hiring, achieving a four weeks reduction in the time taken to hire and increase diversity.
- **IBM Watson Talent:** IBM applies AI to the candidate data to predict their suitability of roles. This system allows workforce planning as well.
- **Infosys and TCS (India):** Both of these companies sort through the millions of campus applicants using AI-powered systems of scanning resumes, testing aptitude, and making short lists.
- **LinkedIn Talent Insights:** offers talent intelligence recommendations and global labour market data to recruiters through AI.
- **Amazon:** A warning example of how AI recruitment failed because training data exhibited bias towards the gender.

Such examples demonstrate that when properly executed, AI can be very effective, but its functioning should be monitored.

### **Best Practices for Using Ai In Recruitment**

Best Practice on the Use of AI in Recruitment will help organizations maximize the benefits of AI

- Its role as **Support Tool** Human recruiters must not be edged out of the final result.
- **Routine Audits:** Models that should be audited to find and remove bias.



- **Transparency:** The applicants need to know when the AI is used in the recruitment process.
- **Ethical work structures:** There should be the establishment of guidelines on fairness and accountability by different companies.
- **Training Data Diversity:** To prevent bias in training results, it is important that the AI software be trained on diverse populations.
- Training the Recruiters to use Artificial Intelligence Site is essential.

The measures safeguard fairness and establish trust among candidates.

### **Future Trends of AI in Hiring**

The future of AI in the process of recruitment is in innovation. Chatbots are becoming more interactive serving candidates as virtual HR assistants. Psychometric tests powered by AI will assess creativity and emotional intelligence and AR/VR interplay can introduce potential candidates to virtual job experiences.



**Fig.4- Chatbot as Virtual HR assistant**

Blockchain-based credential verification is also another trend that can guarantee trustworthiness of degrees and certifications. Emotional AI is another developing technology that can examine the tone, gestures, and micro-expressions, thus help to determine aspects of personality.

In technology-based fields, machine-readable results of coding challenges and GitHub-hosted portfolios might weigh heavily, compared to resumes, in the AI algorithm, and in the arts, the algorithm may especially strike more on the portfolio analyses. The innovations are indicators of the fact that AI will not only redesign how recruitment takes place in the future but also redefine the process of how talent will be measured.

## **II. CONCLUSION**

Artificial Intelligence has disrupted recruitment and has made resume screening and shortlisting candidates more time efficient, consistent, and data-driven. It saves on time to hire, increases accuracy and allows recruiters to handle high numbers of applicants. There are several issues that add weight to the issue of wordless interaction, including algorithm bias, absence of the human touch, and limits to privacy. The optimal solution is a hybrid one in which AI is used to complete the first steps of the recruitment process, and human recruiters screen soft skills and culture. Companies that can find balance between technology and empathy will not only attract a superior talent, but also develop superior employer brands and stay relevant in a rapidly changing labor pool.

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