



## Artificial intelligence in recruitment: Assessing flipside

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### ABSTRACT

Artificial Intelligence is used for various business processes including hiring employees. The purpose of this article is to assess the flip-side of Artificial Intelligence applied in recruitment software. Its insufficiency of delivering the expected results in terms of the right match for the hiring, difficulty in language processing. The paper reviews the literature available to understand the principles of Socio-technical systems design requirements and on Artificial Intelligence's usage in the recruitment process. The research is qualitative, has followed the phenomenology approach, and uses the interview technique for understanding the opinions of the users. The results reveal that, though AI in recruitment provides ease in searching the candidate's barriers in language and recognition, low turn-in ratio, incorrect recommendations due to Data inadequacy, skepticism among HR professionals due to lack of human intelligence, need for budgets for acquiring and training are issues. It is proposed to incorporate the guidelines of Socio-Technical System Design and Human-machine teaming for designing the Artificial Intelligence tools. Further studies could be conducted to understand the limitations of the frameworks available for designing such tools.

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## INTRODUCTION

AI stands for Artificial Intelligence (McCarthy, 1950) it is software that helps in executing the tasks carried out by human beings. Artificial Intelligence has been successfully implemented in various business processes as it not only carries out routine, dull work but also helps in strategic planning and decision making which are very difficult and intricate activities for business management. Information and Communication Technology (ICT) integration has proved beneficial to the entire globe (Dela Fuente & Biñas, 2020). One of the surveys conducted by interviewees found that 76% of the employer were convinced that the applications based on AI would play an important role in delivering the HR functions in upcoming times. Due to the pandemic, AI was used for recruitment rapidly (Dashveenjit & Kaur, 2021). But AI technology could not fulfill the expectations to the organization of augmenting by human capabilities to reshape the organization. It creates frustration without understanding the clarity of interface between humans and technology. AI technologies are used for decision-making that may involve risks entailing physical, reputational damage as well as financial loss (Saenz, 2020).

The Socio-Technical System Design is the approach that incorporates human, social, and organizational factors in designing the organizational system. Such design entails a better understanding of interlinkage of all human, social and technical aspects to contribute to better organizational design and its processes (Gordon Baxter, 2011). Most often the technical requirements are considered but fail to address the human aspect. Many of the researchers argue about the pragmatic approach in the development and usability of such systems. Earlier in the 1940s, Tavistock Institute for Human Relations in London focused upon designing the work systems for improving relations between dehumanized employees and employers. It advocates the adaptation of interactive, participative, and creative approaches. The guideline being “If any technical system is designed at the expense of social system it would result into the sub-optimal system” Gordon Baxter and Ian Sommerville (2011) proposed four methods that are useful in the designing system and helps throughout the software development life-cycle. The Cognitive work analysis provides work analysis to understand the work-flow and its human context, The Socio-technical method helps to know the tasks that are to be given to machines and tasks to be performed by people, Ethnographic workplace analysis helps to realize the physical context of the work environment focusing the operational issues affecting the functionality of the system and Contextual design identifies convenience of the user, focuses more on the functional style of people using the system. The Human Machine Teaming framework (Smith, 2019) provides essential guidelines for designing Ethical AI systems that are accountable, de-risked, respectful, secure, honest, and usable. Human-based AI systems are those systems wherein humans and machines interact with each other continuously in the cycle where human act as an expert and have final authority (Saenz, 2020). Creating Artificial Intelligent Systems with Human-Machine Team would provide opportunities to get the best potential by mutual learning between social surroundings and machines.

The success of the whole enterprise and every department lies in finding the right candidate for the accomplishment of the objectives (Breugh, 2008) not only in terms of productivity but also in terms of qualitative and ethical standards set by the organization. The effective procurement of the manpower ensures the saving of cost and time lag between the requirement initiated by the vacancy and placement of the candidate on the post (Price A.2000). AI has been shifting the way procurement of manpower was executed (Abhishek & Agarwal, 2017). Artificial intelligence, having several features of big data along with analytics, provides ultimate usability to recruiters. It aids to automate and streamline the complicated workflow involving repetitive tasks in the recruitment process, removing the time consumption at each step of the process right from matching with error-free job description using the sentiments analysis to assessment for the selection of the candidate such as psychoanalytical tests, aptitude and analytical tests (Abhishek & Agarwal, 2017).

With the AI in place, the enterprise can accrue the perfection of the recruitment process at a limited cost. It makes the recruiter's job easier, simpler, and more efficient (Chanda, 2019). It serves a variety of needs such as searching and checking the profiles of potential candidates available on various social media platforms. It also seeks the people who are willing and ready to change the jobs using its analysis. Some of the AI software also

provides useful insight into personality assessment by their facial and audio analysis (Kaczmarek et al, 2005). AI software has amazing features of interactive communication which helps us to communicate easily and schedule an interview with required candidates and interview panel members. In short, it brings advantages such as removal of the monotony of repetitive tasks; availability around the clock; fast and accurate data facts; reduction in human errors; supports better managerial decisions (Searle, 2006).

The ATS software is a typical sourcing solution system that helps the recruiter to seek potential candidates all over the World Wide Web on social media platforms. It also checks for the probability of converting the potential candidate by using the predictive analysis in terms of job switching history, the candidate's interests and aptitude, and objectives in the career (Marteniz & Sevilla, 2019). The ATS also keeps the track of interview schedule, the communication necessary, and following up. In addition to the interview schedule, the necessary evaluation in the selection, making an offer by providing easy-to-use templates of the writing application are also available (Marteniz & Sevilla, 2019). The software used in the recruitment process typically has a screening process that is cumbersome if performed manually. This software has readily useable filter options that can be applied to find out the matching candidates with the Job Description for the vacant position (Bradley, Smith 2003). The company may receive a high volume of job applications using the keyword search option based on the qualification, skill, profile, experience, and competencies software ensures no job-seeker was overlooked.

There is no easy way to the accurate evaluation of the candidates to test for their abilities. The success of the recruitment activity is the ratio of the potential pool of candidates applied for the position to the total number of job offers received by the candidates. The assessment of candidates would be dependent on the category of job or occupation. The software provides almost all types of evaluation methods that can be simple to administer, user-friendly, and keeping records of the assessment. It also follows with the complete reports which can be easily interpreted eliminating the personal bias of the assessor (Gomez, 2020). They also provide ease of reference checking to check the information provided by the candidate is correct and careful scrutiny by contacting the previous employers and referees list. In short, AI becomes handy in the overall procurement of manpower, at the same time most of the candidates interested in getting hired are not fully aware of AI or ATS software, thus recruiters might miss out on the potentially better candidate for the organization (Ryan, 2019). It also lacks a humane approach and gut instinct that is required while hiring (Hamilton, 2019). Artificial Intelligence systems applied in the recruitment process are not able to examine the soft skills and personality of the candidates (Markov, 2019). Today, in the pandemic setting, business decisions based on the trends and practices that were used to be quantitative studies or statistical-based are found to be unrewarding (Alexander & Smet, 2020). One should not fall prey to AI systems. Rather they have turned futile to address the problems of present-day situations.

## **OBJECTIVES OF THE STUDY**

The general objectives were to understand and to enquire about the experiences in the use of AI for recruitment. Specifically, to find the gaps in the features of the services claimed and experiences of the users and to make suggestions to the application developers based on inferences made.

## **METHODS**

### **Research Design**

This Research has a qualitative design. It used the phenomenological approach which permits the collection of simple descriptions of the participants' experiences (Dela Fuente, 2021; Crotty, 1998). This approach helped to uncover different aspects of Artificial Intelligent tools used for the recruitment process. The telephonic interview to understand the experience of the use of AI software used in HR hiring and also to gain a deeper understanding of experiences of the gaps in expectation from the software and actual product use.

### **Participants**

The participants were HR professionals having 2 or more than 2 years of experience in handling Human Resource Management especially having experience in the recruitment process. The researcher used a purposive sample. The

criteria used to include was, professionals, having more than 2 years of experience in Human resource management. The following table gives the details:

**Table 1: Profile of the respondents**

Details	Gender	Experience in handling HR practices	Percentage of Experience with respect total Experience of respondent
P1	Male	51 months	19%
P2	Male	41 months	15%
P3	Female	26 months	10%
P4	Female	30 months	11%
P5	Male	38 months	14%
P6	Male	36 months	13%
P7	Male	49 months	18%
Total = 7	Female = 29% Male = 71%	271 months	100%

### **Ethical Consideration**

The researcher explained the purpose of the study to the respondents and sought permission to include their opinions for the research purpose only. To hide their identities they were noted as P1 to P7.

### **Instrument**

The telephonic interview was conducted. General questions were as follows:

1. How long you been working in the field of HR?
2. How present pandemic is affecting the job of HR?

The specific questions were as follows:

1. Does AI software for recruitment helps you?
2. What are the issues with online conversation automation?
3. Are you able to find the right match, and how much is the turn-in ratio?
4. Could you make better decisions using AI tools?
5. What are other issues that you would like to share?

### **Data Collection**

Due to pandemic, the respondents were contacted over the telephone and their convenient time for discussion was sought. The telephonic interview with the intention to understand the typical systems of AI software used in HR hiring and the problems in the process were held. The researcher started interview by informal note to make the respondent feel comfortable. The questions were open ended and pre-decided to explore the challenges faced by

recruiter. The duration of telephonic interview lasted 15 to 20 minutes. The answers were noted down by the researcher

**Data Analysis**

The answered noted by the researcher were read thoroughly and reflected upon and further were summarized to get the inferences. The noted answers were discussed with 2 respondents for confirmation.

**RESULTS AND DISCUSSION**

The interview held with the HR recruiters who used AI software revealed the following aspects:

Question	Summary of Answers:	Theme & Frequency	Sub-theme & Frequency
Does AI software for recruitment helps you?	The AI recruitment software is really useful for quick searching for potential candidates online. With the help of internet technology the life of HR recruiters have become better. We could easily locate candidates from different places for different skillsets like Computer technologies, finances, marketing & sales etc. We could contact them easily. Sending and receiving information is easier. Online selection is possible. Sometimes, people do not update their resumes, in some cases, people give fake details. Mostly it saves cost and time.	Ease in Searching (7)	Communication (7); Time saving(7)

The recruiters agreed to the benefits of AI software used for recruiting like saving cost and time to reach out to different people from different backgrounds by search engines. They could contact the potential candidates easily, hold the interviews, and record their reports easily. It makes the recruiter’s job easier, simpler, and more efficient (Chanda, 2019; Marteniz & Sevilla, 2019). The recruiters also opined that people do not update their resumes and send the copies as they are thus, ending up with a mismatch between the profiles to be recruited. In some cases, people manipulate their work experiences.

Question	Summary of Answers:	Theme & Frequency	Sub-theme & Frequency
What are the issues with online conversation automation?	The Chatbots are incorporated to provide real-time experience to the candidates, they act like a substitution for person who attends online queries. Generally found not able to understand slang words	(i) Barriers in Language processing (6) (ii) Barriers in Recognition (6)	(i) Inability of understand slang and reply (6) (ii) Inability of facial and finger prints (6) (iii) Grammatical

	used by the candidates. It makes mistake in understanding the grammar also. Even sometimes candidates are not allowed to login due to inability to recognize the face or bio-metrics.		mistakes
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The recruiters agreed that chatbots are unable to respond to their queries. The chatbots are programmed to reply to simpler and routine kinds of questions. It was confirmed that due to the inability of understanding slang language, incorrect grammar chatbots are unable to reply to queries of the potential candidates (Leah, 2020). The problem of facial or biometric recognition was also found to be a failure.

Question	Summary of Answers	Theme & Frequency	Sub-theme & Frequency
Are you able to find the right match, and how much is the turn-in ratio?	The general turn-in ratio depends upon the no. of applicants and the type of skills required. Many of the times potential candidates are contacted by multiple companies through their social media profiles like LinkedIn, Twitter, Facebook job portals like glass door, times job & monster etc. Here itself, turn-in ratio goes down. Interview experience is also not very pleasant. Moreover, for some jobs, candidates are not at all found online. The candidates sometimes were found not so comfortable over the interview done online.	Low Turn-in Ratio (5)	Difficulties in interview (4)  Difficulties in follow-up (5)

When asked to the HR professionals operating the AI software for recruitment, many of the potential candidates are contacted by different companies at the same time. So, the actual contact to turn-in ratio goes down (Parker, 2021). This was with recruiters as they mentioned in their interviews that sometimes too much data or too little data is received from the searching tools.

Question	Summary of Answers:	Theme & Frequency	Sub-theme & Frequency
Could you make better decisions using AI tools?	AI tool helps us to make decisions on data available. It provides a lot of graphical pattern and trend. But if the query is very unique in terms of multiple skill-sets,	Data inadequacy (5)	Difficulty in making decision (5)  Difficulty in finding Right-Fit (4)

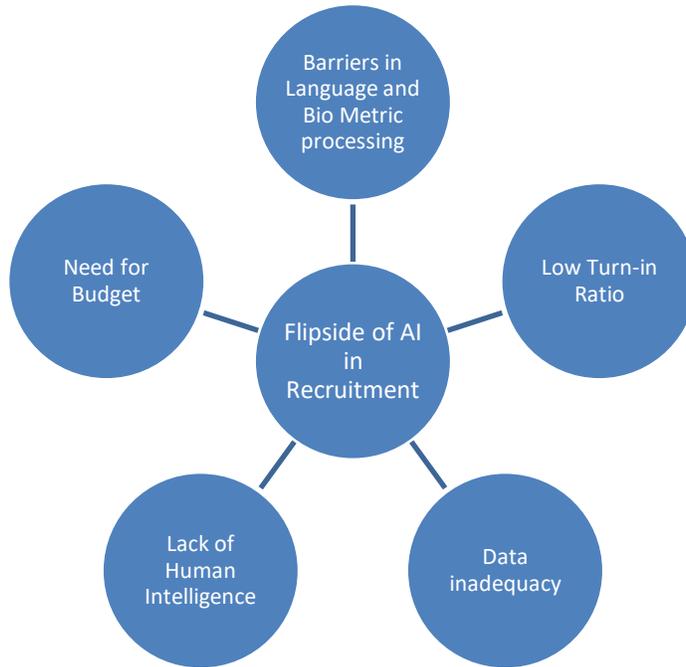
	availability of candidates for some duration, cross skills sets the match is not found. We cannot depend all the time, then we use different alternatives like employee references, placement agencies.		Finding Alternative sources for recruitment (5)
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The data-driven solutions are quantitative and based on the data available. The decision only based on data patterns or trends is found to be inconclusive as reported by the Recruiter and HR managers. The qualifications, skill set match are not enough in recruiting the candidate (Parker, 2021). Moreover, relying only on such data ends up in no recruitment at all. Thus, human intervention is really important in evaluating and judging the candidate’s abilities.

Question	Summary of Answers:	Theme & Frequency	Sub-theme & Frequency
What are other issues that you would like to share?	Basically, No tool present today is replaceable to the professional’s intelligence because it depends on the situation, different criteria of the organization like salary, budget available, nature of job, type of skills needed etc stops us to rely too much on the software. Moreover, we do not get the trained candidate for using the software. Older employees find it difficult to cope up with new technologies. We are also keep budget for software updates and maintenance of the software. It requires negotiation with top management. We also need to training budget to train for using the software.	Lack of Human Intelligence (7) Need for Budget (7) Employee Training (7)	Need for Human Intervention (5) Need for Training Budget (7) Need for Maintenance Budget (7)

Relying too much on AI is a problem as noted by the HR professional in the discussion. Human intelligence is utmost guaranteed no AI would be able to replace it. Thus, social and ethical decisions in the light of human intelligence would be rare possible by the use of technology. That’s why HR professionals were found to be

skeptical to use the technology (Shane, 2019). Hiring the trained people in the operations of AI is one of the biggest challenges. It requires proper budget allocation for training and development the let the employees learn the AI technologies operations.



**Figure 1:** Flipside of AI in recruitment

### CONCLUSION AND RECOMMENDATION

The above discussion presents the real-life problems in AI in recruitment. The notion is the participation of the human element in each stage of the recruitment process is highly recommended despite the variety of developments and experiments are carried out frequently by information technology experts. The interaction between developers and users is still awaiting. As the lacunae in the system throw light on the actual situations which are embarrassing puts a lot of pressure on the recruiters. Thus, it is recommended to the system developers' focus on the social aspect of the organization. From the above data finding researcher would recommend the following: The complete understanding of operations before the AI process is essential.

It is necessary to comprehend not only the conceptual part of function but also the behavioral part of the function. While designing AI recruitment software essential analysis of the human interaction between the HR recruiter and candidates of recruitment should be given due considerations. The language errors recorded at the input must be immediately reported to the user so that correct input from the user is received. Multiple recognition systems could also be added for easy access to the AI recruitment software. The tracking system might incorporate the people's availability to join if they are hired. The AI recruitment software could also be made available in diverse skills areas and all categories of occupations including the attendants to administrators. Every HR professional involved in the discussion was apprehensive about the investment and maintenance of Software used in the HR function. AI is a boon in the guise of a money monster. The expenditure involved in buying the software and updating the software is one of the major parts of the sanctioned budget. Learning software operation to the fullest is also challenging, it requires focus and interest in technical operations learning. Many middle-aged HR professionals find it difficult to cope with the pace of new technology. The Socio-Technical System Design and Human Machine Teaming framework provide the guidelines for designing the AI tools for a better understanding of the human and social part of the organization. Thus, the software developers should take cognizance of these

available frameworks and build better solutions. Further studies could be undertaken to probe, limitations of the software developer to incorporate “human and social” aspects and also limitations of available frameworks for designing effective AI tools for recruitment.

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