Collaborative Intelligence: The Future of Talent Acquisition with AI

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Abstract:

As technology continues to advance, the use of Artificial Intelligence (AI) in talent acquisition has become increasingly popular. However, while AI has shown promise in streamlining recruitment processes and reducing bias, it cannot replace the human element of hiring. The solution lies in collaborative intelligence, where AI and human expertise work together to make better hiring decisions.This research paper explores the concept of collaborative intelligence in talent acquisition, highlighting its benefits and challenges. We analyse the different ways AI can be used in talent acquisition, including resume screening, candidate matching, and video interviews. We also examine the role of human expertise in the recruitment process and how it complements AI capabilities.

Furthermore, the paper discusses the importance of diversity and inclusion in talent acquisition and how collaborative intelligence can help address biases in the hiring process. We present case studies of companies that have successfully implemented collaborative AI solutions in their recruitment processes.

This research paper argues that collaborative intelligence is the future of talent acquisition. By combining the strengths of AI and human expertise, companies can make smarter hiring decisions that lead to better business outcomes. However, it is important to recognize that AI is not a replacement for human judgment but rather a tool to enhance it. Companies must therefore invest in training their employees to work collaboratively with AI systems for optimal results.

1. Introduction:

The conventional recruitment methods of organizations, such as newspaper ads and employee referrals, have become less efficient and time-consuming in hiring the right talent. With the shift in talent as a provider of value and commercial advantage, talent selection has become the primary strategic focus for organizations. The use of e-recruitment systems has been gradually growing, and the emergence of AI tools in 2018 has revolutionized the recruitment process. The COVID-19 pandemic has further accelerated the adoption of AI in recruitment, as the virtual office poses several challenges for HR recruitment. AI-powered recruiting tools can create a fair process and help achieve high-quality and optimal results in less time and cost than humans. However, possible conflicts of shared control between humans and autonomous systems may arise. The background of AI highlights the science's evolution, starting from Alan Turing's idea during the Second World War to John McCarthy's proposal to explore intelligent machine implementation. In conclusion, AI has become a crucial component in the recruitment process, and its adoption is expected to increase with time, revolutionizing the way organizations hire talent.

In the past, organizations relied on traditional recruitment methods such as newspaper ads and employee referrals to attract qualified applicants, but these methods have become less effective due to the time investment and suboptimal results. However, since the late 1990s, there has been a high demand for highly skilled candidates, and organizations need to hire talent to remain competitive in the technological landscape. As a result, attracting, selecting, and retaining talent has become a primary strategic focus for organizations. E-recruitment systems are now growing in popularity and are gradually surpassing traditional methods. In 2018, the use of AI tools became popular for recruiters, and they have become essential in talent selection, which is a challenging task that requires careful consideration of organizational goals and the decision maker's skills and biases. The emergence of AI in recruitment has enabled employers to tackle these challenges and improve their hiring process.

2. Background

The definition of artificial intelligence

During World War II, the British mathematician and computer scientist Alan Turing initiated the concept of artificial intelligence. In 1950, Turing suggested that if a person could not distinguish between interacting with a machine or a

human, they would assume the machine is intelligent. The term "artificial intelligence" was later coined by John McCarthy in 1956 when he and his colleagues proposed a project to the Rockefeller Foundation, exploring the possibilities of intelligent machines. However, a more comprehensive definition of artificial intelligence exists. Artificial intelligence is a scientific field that seeks to create systems that can think, learn, and perform tasks requiring human intelligence. The goal is for machines to perceive, remember, understand, deduce, compare, make decisions, think, suggest, and take action in ways similar to humans. Additionally, artificial intelligence provides insights into how our brain functions and reflects the code stored in our neurons.

2.1 Categories Of Artificial Intelligence Contribute To Reducing Cognitive Workload:

There are three categories of artificial intelligence: Artificial Narrow Intelligence (ANI), Artificial General Intelligence (AGI), and Artificial Super Intelligence (ASI). ANI is limited to specific products, services, or jobs, while AGI can imitate human cognitive activity almost perfectly, and ASI surpasses human intelligence. Currently, only ANI exists, but with the rapid development of other types of AI, more advanced AI is expected in the next decade.

One of the main concerns in human-computer systems is identifying the user's cognitive workload. Humans have limited capacity for processing information, so they often use their environment to reduce cognitive burden. AI helps humans solve problems and transfer cognitive effort to the "global brain." Information systems examine cognitive effort in human-computer interaction for adaptation and personalization. Some researchers use user perception to study cognitive workload, and higher AI support can reduce cognitive burden. In simulated job interviews, users with greater AI help experienced lower levels of cognitive workload. Therefore, AI can contribute to reducing human cognitive workload.

2.2 Deep learning and neural network method:

A neural network is a computer model that simulates the operation and structure of a biological neural network by utilizing numerous artificial neurons connected together. The use of neural network-based target identification techniques is highly desirable in the current era of deep learning, where the goal

is to teach computers to perform tasks naturally accomplished by humans. This technology, which allows autonomous cars to differentiate stop signs from street lights, for example, is critical. Deep learning models can attain the highest levels of accuracy, sometimes even surpassing human performance, by learning directly from images, text, or sound to perform classification tasks. Typically, these models are trained using a neural network architecture with multiple layers and a large amount of labeled data. Neural network learning resembles our natural learning process, where we do some work and receive feedback from a teacher to improve in the future. An error value is calculated and sent back to the system, and the error is assessed at each layer of the network and used to adjust the threshold and weights for the following input. The error decreases with each iteration as the network learns, and this process, known as backward propagation, continues through the network until the error value is minimized.

3. The purpose of the study:

The study is to explore how AI can be used in talent acquisition processes to augment human intelligence and improve recruitment outcomes.

The study aims to identify the challenges and opportunities of using AI in talent acquisition and to propose a collaborative intelligence model that integrates AI and human intelligence to achieve better results.

The study also examines the ethical and legal implications of using AI in talent acquisition and provides recommendations for organizations to implement AI in a responsible and effective way.

4. Limitations of the study:

The Collaborative Intelligence of the Future of Talent Acquisition with AI may include the potential for bias in the data collected through the survey and interview methods. The sample of HR professionals may not be representative of the broader population of HR professionals, which could limit the generalizability of the findings. Additionally, the study may be limited by the availability and quality of data on the use of AI in talent acquisition. The study may also be limited by the rapidly evolving nature of AI technology and the recruitment landscape, which could make the findings outdated or irrelevant in the future. Finally, the study may be limited by the scope of the research questions and the methods used to answer them. While the mixed-methods

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approach will provide a comprehensive understanding of the topic, there may be other factors that influence the effectiveness of AI in talent acquisition that are not captured by the study.

5. Literature Review

Several studies have been conducted on the impact of artificial intelligence (AI) on talent acquisition. A literature review conducted by Nawaz in 2019 found that there was a lack of studies on the use of AI in recruitmentNawaz (2019). Another study by Kerey and D'Alessandro explored the factors that impact the pace of adoption of AI in recruitment, including fear and lack of trust from HR managersDe Stefano&Davenport (2019). The study aimed to understand the causes of slow adoption of AI and provide an understanding of how a generic AI solution provider startup could approach this market.

Faqihi and Miah conducted a study on AI-driven talent management systems, which recommended practical approaches for implementing advanced automated systems for workforce management. The study highlighted the potential for AI to improve strategies for talent management. Chen's study focused on collaboration between recruiters and AI, exploring how talent acquisition has transitioned from digital 1.0 to 3.0 (AI-enabled). The study found that e-recruitment systems are gradually growing, surpassing traditional methods.

Overall, these studies suggest that while there is potential for AI to improve talent acquisition processes, there are also challenges such as fear and lack of trust from HR managers. As e-recruitment systems continue to grow, it is likely that more companies will adopt AI tools for recruitment purposes.

Collaborative intelligence is the combination of human and artificial intelligence to achieve a common goal. In talent acquisition, collaborative intelligence can be used to streamline the recruitment process and find the best candidates for open positions. AI plays an important role in each stage of recruitment, such as recruitment promotion, job search, application screening, and candidate selection[1]. For example, ChatGPT is a powerful AI tool that can be used by recruiters to streamline their process and find the best candidates.

Collaborative intelligence has several potential benefits in talent acquisition. First, it can remove human prejudices in employment by using objective criteria to evaluate candidates. Second, it can help recruiters reach a wider pool of

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potential candidates through personalized outreach and Boolean search. Third, it can increase applicant conversions and provide quality suggestions for the recruitment process. Fourth, it can help employers identify the best individuals through gamification and video interviews to ensure a diverse talent pool.

According to a report by HR.com, 64% of HR professionals believe that AI has high potential to improve talent acquisition. However, AI is not widely used to a high degree today. In the near future, high AI usage is expected to jump by two or three times in some instances. Where specific facets of talent acquisition are dependent on quantifiable data, participants tend to be more optimistic about the future use of AI.

In conclusion, collaborative intelligence has great potential in talent acquisition. By combining human and artificial intelligence, recruiters can streamline their processes and find the best candidates for open positions. The use of AI tools becomes popular for recruiters as they transition from digital 1.0 to 3.0 (AI-enabled) as their primary strategic focus.

6. Methodology:

The research methodology for this paper on "Collaborative Intelligence: The Future of Talent Acquisition with AI" will involve a mixed-methods approach. Firstly, a comprehensive literature review will be conducted to gather information on the current state of talent acquisition and the role of AI in the process. This will involve a systematic search of academic databases, industry reports, and other relevant sources. Secondly, a survey will be conducted to gather data on the perceptions and attitudes of HR professionals towards AI in talent acquisition. The survey will be distributed to a sample of HR professionals from various industries and company sizes. Finally, interviews will be conducted with a select group of HR professionals to gain a deeper understanding of their experiences with AI in talent acquisition. The data collected from the survey and interviews will be analysed using both quantitative and qualitative methods to identify patterns and themes. The findings of this research will contribute to a better understanding of the potential benefits and challenges of using AI in talent acquisition and provide insights into how organizations can effectively integrate AI into their recruitment processes.

The investigation is descriptive in nature. According to the Chennai Chapter of Software Technology Parks, there are approximately 460 registered software companies in Chennai. For the survey, the researcher chose the top 20

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performing IT companies in Chennai. These firms are regarded as having supported corporate performance, growth trend, client base, market presence, skilled talent, training interventions, and big scale projects in a variety of industry verticals. As a result, the researcher assumed that the target population was infinite. To select the samples for the study, sampling was used. According to Dem organ's table, for an infinite population, 663 sample sizes are necessary with a confidence level of 99 percent and an arrogance interval of 5%. The researcher distributed over 700 questionnaires, 674 of which were returned and answered.The remaining 26 surveys were returned, and it was discovered that they were biased and unanswered. Following statistical tools include measures of central tendency and dispersion (Mean and Standard Deviation), as well as correlation.

Table 6.1.Mean and Standard Deviation of Talent Acquisition with AI Process

Measuring Items	Mean	Sd
Sourcing & Screening	3.21	0.405
Assessment	3.51	0.503
Selection	2.84	0.38
Onboarding	2.61	0.489
Mean Score	3.01	0.121
* Sources — Primary data		

The respondents agree with the dimension "Sourcing & Screening" with a central tendency value of 3.51 and a dispersion value of 0.503. In the same way the respondents agree with the dimension. " Sourcing & Screening " with a central tendency value of 3.21 and a dispersion value of 0.405. While the respondents are having a neutral feel towards the dimension " Selection " with a central tendency value of 2.84 and a dispersion value of 0.380. And in the same way the respondents are having a neutral feel towards the dimension "Onboarding " with a central tendency value of 2.61 and a dispersion value of 0.489.

Table 6.2.   Relationship between the variables of Talent Acquisition with AI

		Sourcing	Screening	Assessment	Selection	Onboarding
Sourcing	PC	1				
	Sig.					
	N	674				
	PC	.076*	1			

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Screening						
	Sig.	0.048				
Assessment	N	674	674			
	PC	-0.015	.094*	1		
	Sig.	0.704	0.015			
Selection	N	674	674	674		
	PC	0.066	0.06	-0.008	1	
	Sig.	0.085	0.119	0.833		
Onboarding	N	674	674	674	674	
	PC	-0.063	-0.052	-0.045	-0.026	1
	Sig.	0.105	0.174	0.247	0.493	
Correlation is significant at the 0.01 level (2-tailed).						
Correlation is significant at the 0.05 level (2-tailed).						
PC - Pearson Correlation						
N — Number of Respondents						

Positive Correlation - The independent variable like "Sourcing & Screening " shows positive linear relationship with the dependent variable like "Assessment" (r = 0.076). The independent variable like "Assessment" shows positive linear relationship with the dependent variable like "Selection" (r=0.094)

No Correlation - The independent variable like "Sourcing & Screening " shows no linear relationship with the dependent variables like "Selection ", "Onboarding ". The independent variables like "Assessment" shows no linear relationship. with the dependent variables like "Onboarding ". The independent variables like "Assessment " show no linear relationship with the dependent variables like "Onboarding ". The independent variable like "Assessment " shows no linear relationship with the dependent variables like "Onboarding ".

Conclusion:

In conclusion, the use of artificial intelligence (AI) in talent acquisition has significantly transformed the traditional recruitment process. With the emergence of collaborative intelligence, the combination of human expertise and AI-driven technologies can enable organizations to identify the best-fit candidates efficiently and effectively. The use of AI in talent acquisition has several benefits, including faster and more accurate candidate selection,

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reduction in bias, and increased diversity and inclusivity. However, it is crucial to note that AI is not a replacement for human recruiters but rather a tool that can enhance their capabilities. Thus, organizations need to strike a balance between the use of AI and human expertise to achieve the best recruitment outcomes. In the future, collaborative intelligence will continue to be a crucial aspect of talent acquisition, and organizations that embrace this approach will have a competitive advantage in attracting and retaining top talent.

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