A Review Paper: Role of Artificial Intelligence in Recruitment Process

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Abstract: Human resource management, a field that has the involvement of Human Brains, Manpower, Psychological Behavior, code of conduct, human behavior and so on. Every organization has a human resource department specifically dedicated to work towards the betterment of the employees starting from the very sourcing, screening, recruiting, induction, performance management, employee engagement, learning & development and activities. In the modern world, innovation in technology has ended up bringing the science and technology in HR Operations of the company. The innovations led in AI and ML have worked towards implementing them in carrying out the HR process that may lead to reducing rather sharing the work of the HR personnel. Artificial Intelligence work towards simplifying the tasks of the Managers. However, there is another perception that the Artificial Intelligence can replace the human workforce, irrespective of the type of work. Transformation and the deviation of the work towards the automated systems, have its own benefits of reducing the work and also the work becomes less prone to errors.

Keywords: Artificial intelligence, Recruitment process.

I. Introduction

With the ease in the work and improvement in technology, Artificial intelligence has played a great role in every field. Starting with the engineering to the human resource every field has its own use of AI. It has helped the humans to perform the work in organized manner which has impacted the achievement of organizational objective. The HR department plays an important role in streamlining all the other processes that can work towards running the business operations. These business operations involve the manpower from the lower level to the senior level. Streamlining the complete team to achieve a standard work process has become a major part where the

technology has helped in dividing the work load. Though AI finds no comparison to the Human brain, yet it has proved to be a boon by performing the tasks that are meant to be done in a set format irrespective of the Human behaviors.

The question arises how does the technology help? The answer could be by following the prescribed set of instructions and performing the tasks as per the algorithm that has been set. Before implementing any innovation and technological advancement there is a need of set of experiments that are to be performed and literature study with deep and insightful knowledge about the advancements.

In order to overcome such issues, AI is designed in such a manner that can be related to science with the Algorithms that makes it follow the trend and follow a set pattern. Here the perception and the feelings find no involvement. Such technologies are used in voice recognition systems and Bots.

Voice recognition has turned the technology into smart features that has impacted and helped in reducing the tasks by acting as an assistant to any HR and performing the tasks with a set pattern.

As per the tasks the AI is applied, for tasks related to speech to text voice recognition system works and for the systems where there is prescribed set of instructions, for that the Bots are the ones that act as HR assistants when the learning and instructing is involved.

BOTS can be used where the tasks are to be performed as per the keywords and phrases. It can be used for learning, chatting, giving directions and so on. Though there are various hurdles that are faced as the simplest of the decision also have extensive logic solution to be solved.

Shortlisting of the candidates has the set format of the requirement which needs to be checked at the time of verification. This pre-set list of documents as well at the time of shortlisting, AI serves as assistant to the HR leading to

share the work load of the HR. Not just during the joining but even at the time of attrition analysis, AI assists the HR for the task in matching the documents and the past data making the predictions.

Tasks like wherein the HR operation, Talent Acquisition, Talent Development and Retentions are concerned AI proves to be an efficient assistant to HR and reduce their work making it simpler for them to carry out the work for n number of employees with a high level of perfection.

However, the technology has taken up the part to assist humans but have not yet taken over the work single-handedly making it a cumbersome task to cross-check the data so that the things can be brought in-line with the work flow. As long as the data is collected there is a probability that a lot of junk data might get collected which could increase the work sometimes.

Also there are places where the perception, feelings and emotions play an important role when it comes to the work of an HR and in that case AI still has a lacking point which can create a gap between the Employees and the HR.

Last but not the least AI works on binary logic, but no HR has either all black or all white, thus it becomes complex at times, to make the employees comfortable.

As far as the technological advancement is concerned, AI is yet to attain various advancements. This paper states the importance of AI in the work flow of an HR for the Routine Work and sharing the work load of HR along with the importance of AI in HR.

However, with the bots also there are certain limitations as a human mind does not restrict itself from any kind of thought and questions coming in their mind and every person has its different capability of thinking that gives rise to various number of questions. But, with the bots this won't be possible. This is because the bots are programmed with limited number of questions and they tend to answer those questions while any question out of their databases either left unanswered or not given the correct answer. This can result into misleading of the user.

II. Recruitment

According to Edwin B. Flippo, "Recruitment is the process of searching the candidates for employment and stimulating them to apply for jobs in the organization". Recruitment is a process of identifying different sources of workforces requirement in the Organization. It is a positive process of attracting various applicants searching for jobs and motivates them to apply for the vacancy specified by the establishment. In the word of Mondy (2010), Human resource manager is the utilization of individuals to achieve organizational objectives. HR managers act as a central role between the establishment and the aspirants. HR manager is a backbone of any organization. According to Finnegan (1983), recruitment means "The right people in the right job".

Recruiting the right candidate is not always about the degrees that they possess but also sometimes it is dependent on the skill set that is not mentioned anywhere. And here is when the interview along with the group discussion comes into picture. The complete recruitment process is a mix and match of the education, the courses that are pursued, the experience and the skill set.

Recruitment procedure involves various steps which may tend to keep the team busy, but if the shortlisting of the candidates is done as per the prescribed format, this gives a sigh of relief by decreasing the workload of the HR department.

The complete recruitment process can take about too many days when carried out manually. Also if it is a manual process, there are chances of biasing. But, the same can be overcome if the process is carried out by using AI. However, there are things like the observation of the behavior and the psychological state of the person while appearing for the interview that cannot be noted.

To simplify recruitment, the first shortlisting can be done by the use of technology and further the second step can be taken by the human managers. This division of work yield better results as the managers feel free of the burden of overload and their tasks, majorly the paper work is divided amongst the technological bots that assist them.

III. Artificial Intelligence

"Artificial Intelligence can be defined as the art of creating machines that perform functions that require intelligence when performed by people" (Kurzweil, 1990). The branch of computer science that is concerned with the automation of intelligent behaviour" (Luger & Stublefield, 1993).

Father of AI, John McCarthy described AI as, "Artificial Intelligence is the science and engineering of making intelligent machines, especially intelligent computer programs".

The works of Artificial Intelligence is similar to human intelligence like to learn, to adapt, to identify and to correct. John McCarthy, who coined the term in 1956, defines it as "the science and engineering of making intelligent machines".

The Encyclopedia Britannica states, "Artificial intelligence (AI), the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings". Intelligent beings are those that can adapt to changing circumstances.

According to Dictionary 1: "Artificial Intelligence is an ability of computer or other machine to perform activities that are normally thought to require intelligence. The advancement in the branch of computer science concerned with development of machines having this ability".

According to Dictionary 2: "The subfield of computer science concerned with the concepts and methods of symbolic inference by computer and symbolic knowledge representation for use

in making inferences. AI can be seen as an attempt to model aspects of human thought on computers.

Artificial Intelligence is the introduction of human brains to the machines which can lead to impactful innovation making the human life simple. Though the work gets divided and reduced in every field, still the human intervention is required to cross verify at the same time.

Since every work in day-to-day life has become dependent on science and technology, carrying out the work in a streamlined process has become necessary to deliver the results without taking much time.

In the organization, it is not just a single department that takes the help of AI rather there are many departments that carry out the task with the help of technology. It helps the employees to complete the similar task with less manpower and less errors with greater efficiency.

Also, since there is no point of distraction that can be caused to machines while carrying out certain tasks the work is finished in no time and with less errors. AI is innovation that helps the humans to divide the work but not for dependency. When it comes to manpower management and manpower allocation, it is still necessary that the major actions should be taken up by the human managers.

IV. Review of Literature

According to Heene (1997), competence based model is one type HR tool which is very helpful for organization to achieve their manpower by successfully recruiting, planning and emerging the applicants.

According to G. Liddon (2006), described the competence model as a description of knowledge, skills, capabilities and behaviors. These skills are required to perform any kind of job or tasks that have been assigned in the organization. To obtain a productive output and an efficient outcome the organizations may use a competence based system that look forward to the core competencies and design the business strategy accordingly. These strategies are used to determine the working of a business model and streamlined for hiring and selection, assessment, performance management, training and development and employee engagement techniques for their career development.

According to Murgai (2018), this paper states the impact of Artificial Intelligence in human resource management. The aim of this paper was to analyse the scope and use of artificial intelligence in various functions of human resource management like recruitment, selection, employee retention, performance appraisal etc. The researcher used secondary data to achieve the objectives.

According to Geetha R. and Bhanu Sree Reddy (2018), the aim of this paper was to analyze the role of AI in Recruitment process. The main objectives of this paper were to analyze or study the influence of artificial intelligence in hiring process in the companies. The researcher used the secondary data in this study like websites, journals, newspaper etc. to explore the more strategies while hiring or recruiting the candidates' with AI.

According to Raviprolu Anjana (2017), the aim of this paper is to analyze the role of Artificial intelligence in recruitment. The researcher also found out the various techniques & strategies used in recruitment process. Researcher used secondary data to achieve the objectives.

According to Jain S. (2017), in this paper researcher analyzed the engine driving the next wave of transformation in business. The aim of this paper was to investigate the transforming HR with AI. In this paper researcher also analyzed how AI metamorphic the different units of management like marketing, HR, Finance, manufacturing etc. in an nutshell the researcher concluded that the HR managers can be able to use of latest AI technology for all the various functions of human resource like recruitment, selection, training, development, compensation, reward management etc.

According to Ruby Merlin and Jayam R., in this paper, the researcher has analyzed the human machine collaboration in the HR Management role for the various tasks that are repetitive in nature using AI and ML. The tasks does not limit itself from the screening, sourcing and recruiting but also the tasks that are carried on in the HR Operations lifecycle like the performance Management System, Trainings, Learning and Development, and so on.

V. Objective of Study

- To study the impact of artificial intelligence in recruitment process.

VI. Methodology of the Study

This paper is descriptive in nature. The researcher used secondary sources of data such as newspaper, journals, thesis, websites, case studies, reports, magazines etc.

VII. Research Study

Impact of Artificial Intelligence in Recruitment Process

Artificial Intelligence is a use of machine to perform the task that can help in reducing the work of Humans. When the work is performed through a Robot or any Technological machine, there tends to be very less chances for the error. While the recruitment process tends to be the most important task for any company, there is a need to mark up work error free in order to avoid any kind of mistake resulting into the recruitment candidate matching the exact profile.

AI can be used in 3 steps while we follow the recruitment process such as:
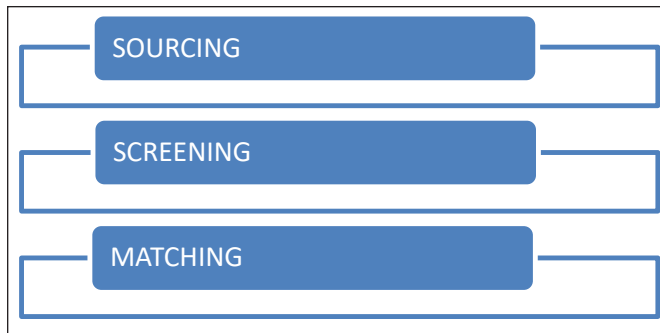
Sourcing needs the data of the professionals that can be a perfect match for the opening in the organization. There are few job profiles that seek certain technical as well as soft skills and the people who have left the organization and are seeking the job become the applicant. The sourcing process is one of the task that becomes tedious for any HR and so with the help of AI and ML this task can be shared and the work can be reduced making it easy for the organization to get the right list of applicants for the right job. Sourcing involves knowledge from various verticals and there is the applicability of the candidate basis their knowledge, academic background, experiences and so on. However, if the prescribed format is set, there are chances for the candidates that the shortlisting can be done at the sourcing level within the minimum amount of time, keeping the candidates posted of their shortlisting or else informing them if they do not fit the required post. All this is possible if the candidate sourcing is done correctly.

While Screening the AI has already laid its hands through ATS system where few keywords are fed into the system and the resume of the applicant are matched to hold these keywords. This helps in screening of the resume and makes the task easy to complete within the stipulated time. The Applicant Tracking system matches the keywords with the words in the resume and if the content holds the exact words the application is shortlisted. The complete data is filtered in much less time. When all the steps are carried out by using AI, there are chances that the screening has to be cross verified by human resource personnel. When the HR department conducts the complete procedure it takes a lot of time but when half of the work is done by the AI, it helps in reduction in the work load.

Once the list is prepared for the suitable candidates the last step before interviewing is the matching of the profile with the desired traits, location and package. ATS tend to shortlist all the resumes that match with the keywords however, exact profiles need not just contain the keywords for the namesake and for that the Matching of the Profile plays an important role. While matching the complete profile resume is scanned along with the required details such as Salary, Location and the Core Competencies. At this level the USPs of the candidate is concerned the major point to make know whether the profile is best fit or not. Thus, out of n number of profiles, the selected profiles are then called for the interview.

Use of AI helps in perfect candidate matching and helps recruiters to save time and resources in getting the suitable

candidates for a particular job role. With the posting of the Job description on the portals, there are certain systems and patterns that are to be noted while scanning of the resume of the candidates. It happens well when the resume is shortlisted and the scanning is done as per those keywords. It helps in reducing the tasks and selecting the most eligible candidates as per the core competencies and the soft skills mentioned.

VIII. Limitation

There are times when the data collected through AI has the junk data which makes it another cumbersome task for HR when they do not find the exact match. This increases the task of the HR as they need to filter after understanding the profiles and shortlisting the candidates as per the required profiles.

Another shortcoming noticed is that the AI cannot efficiently segregate the profiles for the senior level positions. The reason for such a failure is the need of Managerial skills and the core competencies for the senior positions which require major understanding and need of experience calculator along with just a Resume. Last but not the least AI works on binary logic, but no HR has either all black or all white, thus it becomes complex at times, to make the employees comfortable.

IX. Future Scope

As the science is getting advanced, and in the busy schedule AI is finding its application in many verticals of Human Resource. AI finds its application best in HR Management from reduction of the work load to matching the most suited profile. It is not just this where the use of AI is limited. It has rather topped the list in assisting the HR further in the induction procedures. Where the new joiners are introduced to the organization and the organizational policies, there is a need of the team of HR, these instructions can also be given with the help of bots which shall enhance the scope of AI. Not only this the instructions with the written formalities. All these proceedings have a written prescribed format which can be instructed to the new joiners, this may not just reduce the workload of the HR Team rather shall also help in making the procedure smooth. AI is not just limited to the recruitment or the selection process, it has found its ways beyond that and has now widen its horizons to the next level of assisting HR teams in performance management and payroll process.

Though the human emotional touch and the reactions to manage the situation might not be of great help but the work that is carried out in a prescribed and pre decided format can easily be conducted with the help of AI. Thus, AI tends to present its hands forward in creating a major difference and reducing the workload, thus also providing ways to generate new openings that are more technically sound. All the researchers are looking forward to the enhancements and innovations in introducing the AI and fuzzy logics based HR system in the organizations leading its ways ahead in the future with minimal errors however supervising the results shall always be a task that

would be required. The feedback provided in the closed loop system while designing the AI systems for the HR work shall enhance the capabilities yielding great results and it shall also help in rectifying and correcting the prior results in the network.

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