



RECRUITMENT THROUGH ARTIFICIAL INTELLIGENCE: A CONCEPTUAL STUDY

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ABSTRACT

An industry or a business or a firm requires quality personnel for accomplishment of objectives framed by them in order to survive in this competitive era. They all are in the beginning of fourth industrial revolution. To remain competitive in this digital world all search for bright, potential and dynamic employees. Organizations with an effective recruitment strategy will be able to employ suitable individual in order to manage the digital world and developing business environment. So the recruitment strategy is the prime factor for every organization in hiring skilled employees who could be more efficient and effective in accomplishing the job objectives. The recruitment strategy as it is a major function of organization apparently takes help of data analysis for decision making process. The data analysis is known as “Artificial Intelligence” which plays a crucial role in recruitment decision. Artificial intelligence in a most basic terminology and is a human develop intelligent machines. AI will work and react like human and its ultimate goal is to facilitate computers to carry out the work as normally done by people. AI leads with an incredible speed and accuracy. The major objective of this paper is to study how Artificial Intelligence influences the recruitment strategy. The study also throws light on the techniques used by companies in AI while recruiting. This study is entirely done based upon secondary sources of information like conceptual papers, various peer reviewed journal articles, books and websites are used to further explore the concept.

Keywords: Artificial Intelligence, Industrial Revolution, Machines Learning, Recruitment.

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1. INTRODUCTION

Organizations develop and sustain by innovating new ideas to compete in the digital era. Innovation leads to decrease in manpower and increase in machine handling. Organizations will also need to train its employees to handle machines, software or any equipment for that matter. Now organizations are trying to implement recruitment techniques which lead to acquire talented employees. Artificial Intelligence term was coined by John McCarthy (1950) soon after when he published a paper entitled “Computing Machinery and intelligence” and this paper lead to open the doors to the field termed as AI. Now, HR managers implement Artificial Intelligence technology to recruit, retain and inspire the proficient manpower which leads to success and growth for both the employer and employee. AI in recruiting has a major role in talent acquisition (Madeline Laurano Co-Founder & Chief Research Office). Nearly 30% of companies implementing AI for recruiting activity which can lesser down time, cost reduction and can place right talent in the right position. Artificial Intelligence is defined as “An area of study in the field of computer science. Artificial intelligence is concerned with the development of computers able to engage in human-like thought processes such as learning, reasoning, and self-correction”. Artificial intelligence is all about fast thinking with lot of knowledge, think as human, logical reasoning, etc., as it is a part of computer science leading to efficiency in problem solving by giving solutions.

2. RECRUITMENT

We are in the early stage of Fourth industrial revolution and it leads to Human Resource Management to act dynamically as it is concerned with manpower as an importance factor of production in the organization performance, which is the most important factor for organizational performance in all activities. Among all functions of management, Human resource manager deal with a challenging task of hiring the qualified aspirant with required skill set, match the job specification for meeting the organizational goals and objectives. For efficient manpower recruitment hr managers have to understand the strategies, functions and conditions of organizations and plan the recruitment pool for new millennial that can be able to fit themselves in organization.

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 process is identification of different sources of personnel requirement to organization. The method is a positive process attracting various aspirants 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. The role of HR manager is to recruit personnel in two different aspects say internal or external factors for the organization. Internal recruitment of candidates which takes place internally such as promotion, transfer, and external recruitment of candidates takes place from external environment such as advertisement, referrals and other sources (Arthur, 2001). HR managers act as a central role between the establishment and the aspirants. As this task requires deciding the appropriate candidate with the skills set as specified by the particular job vacancy.

Human resources are backbone for any organization. According to Finnegan (1983), recruitment means “The right people in the right job”.

3. ARTIFICIAL INTELLIGENCE (AI)

Father of AI, John McCarthy described AI as, “Artificial Intelligence is the science and engineering of making intelligent machines, especially intelligent computer programs”. Artificial Intelligence works as similar as 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”. It is a computer enabled system say a Robotic system that is designed to process information to provide outcomes in the way similar as manpower in the organization do using their ability to learn, taking decisions and sorting out problems. AI is the science of mimicking human intelligence using computers.

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. It is also sometimes defined as trying to solve by computer any problem that a human can solve faster.

Artificial Intelligence is classified into major four approaches:

- i. System mechanism that acts like humans –

“The art of creating machines that performs functions that require intelligence when performed by people” (Kurzweil).

A game is proposed by Alan Turing which will check the difference between human and computer working ability. The game will lead to answer the question on “Can a machine think”? This is called “The Imitation Game”. This imitation game is said to be Turing test and described this test as follows:

The game is with three components said, Man (A), Woman (B) and Interrogator (C). The interrogator stays in a room apart from the other two. The object of the game for the interrogator is to determine which of the other two is the Man and Woman. Interrogator given with the value as X and Y, and at the end of the game he says either “X is Man or Y is Woman” or “X is Woman and Y is Man”.

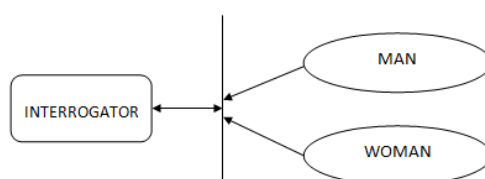


Figure 1 Turing Test (Interrogator, Man and Woman)

“I believe that in about fifty years’ time it will be possible to programme computers, with a storage capacity of about 10⁹, to make them play the imitation game so well that an average interrogator will not have more than 70 percent chance of making the right identification after 5 minutes of questioning” -Alan Turing (1950).

Now the question is raised, “What will happen when a machine plays the role Man in the game? Will the interrogator may decide wrongly as often when the game is played between a man and a woman? So, questions replace the original “Can machines think”? The answer to the game to decide who is who, can be made when it undergoes measuring response-time, voice characteristics, or similar criteria. The Turing test is possible when the intelligent C is programmed with intelligence and if not the test ends up with some criterion.

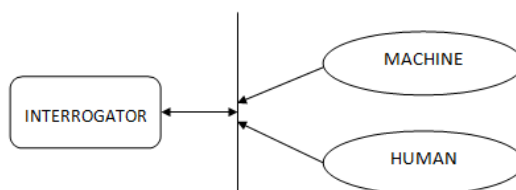


Figure 2 Turing Test (Interrogator, Machine and Human)

ii. System mechanism that think like humans –

Artificial Intelligence is something related to automation of machines activities that we associate with human thinking, activities leads to decision makings, critical problem solving, learning ability (Bellman). Human brain think differently in experience, “big picture”etc.

The cognitive modeling approach is a field of cognitive science. As it is an interdisciplinary field to build cognitive modeling approach for AI technology. To test workings of human mind the cognitive science tries to construct precise and testable theories between the two AI and Experimental techniques. Only when the test is programmed with some way of human thinking then the test will result in machine think like human. And this leads to think about actual working nature of human brain.

iii. System mechanism that think rationally –

Artificial Intelligence is “The study of computations that make it possible to perceive, reason, and act” (Winston). The ability of machine depends upon the input we provide and the required output may depend upon the intelligent programmed to the machines. There by, perception of machine lead to giving vague solutions too.

To check whether machines act rationally there is a need of the laws of Thought Approach. The Greek Philosopher Aristotle provided patterns of argument that always gave correct conclusions. And the law of thought tries to administer the function of brain and that lead to the ground logic behavior.

iv. System mechanism that act rationally –

Artificial Intelligence is “The branch of computer science that is concerned with the automation of intelligent behavior” (Luger and Stubblefield). It is said to be the intelligent agent approach. An agent is a system that perceives and acts. It really matters upon solving actual problems. Therefore, emphasis is on behavior and behavior is more scientifically testable than thought. More in general notion, rather try solving hard problems like human brain it solves like “just try to solve hard problems using intelligent machine”, not knowing who is who.

A rational Agent approach is something which tries to perceive and acts. A formula for rational agent is Agent = Architecture + Program. Agent means a mechanical agent i.e., a computer or a machine. And also the machine can decide what has to be done or what not to be.

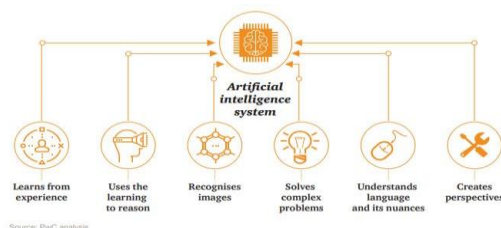


Figure 3 Artificial Intelligence System

4. LITERATURE REVIEW

AI technology however has touched people in their day to day activity in many ways. Beginning from usage of smartphones keyboards to voice-enabled assistants in tabs and laptops and even the persons immediate personal technology supporting devices – technology and its innovation has reached each end of the world among the people when compared to how it was or how it would be or how it is perceived. Even exploitation of AI can occur for the welfare of individuals of country who involve themselves in sectors like financial services, health & safety services, education and governance. However, AI is almost implemented in every sector of the economy. (D. S. Rawat, general manager – ASSOCHAM, Artificial Intelligence and Robotics – 2017).

Jonathan Kestenbaum(2016), executive director of Talent Tech Labs, a talent-acquisition technology consultant in New York, acknowledges that HR professionals may initially feel anxious about the impact of AI on their work. But, he says, “Implementing AI software simply eliminates mundane tasks and time-consuming data analysis to serve as an ongoing problem-solver for HR.

In the words of Dr. A.P.J. Abdul Kalam (2010), “The turning point in the process of growing up is when you the core strength within you that survives all hurt”. The hardest battle, which any human can ever imagine fighting; and never stopping fighting until you arrive at your destined place, that is, a UNIQUE YOU.

The ultimate goal of recruitment process is to find the right aspirant at the right point of time by human resource manager, which may extend the activity by utilizing more number or source. For filling up the specified vacancies we would work from various mediums to find and place the finest candidates. From the two major factors of recruitment say internal factor or external factor depends upon the effectiveness of every organization using different methods and process while recruiting. The recruitment process is successful when it stimulates and selects strong aspirants those prepare to perform successfully on the job. Development and delivery of customized information, data and sources while recruitment activity makes its more effective (Rao, 2010).

In an article published by Forbes.com titled “The rise of Facebook recruitment” stated that, job seekers would have a clear picture about on what they are looking while searching a prospective job. As well the recruiters will also have an idea on who will be their prospective candidates. Facebook Career Pages helps to have a better match between a candidate and a company. For instance, Earls is a casual dining restaurants run in North America has implemented Facebook recruiting campaign and the reason behind choosing FB recruiting is because it allowed them to convey company policies, procedures and cultures as such to potential hires. They also added that as Twitter and LinkedIn did not serve as FB did for social recruitment.

5. OBJECTIVES OF THE STUDY

- To observe how artificial intelligence is used currently in recruiting process.
- To understand the importance of artificial intelligence in recruitment.

6. METHODOLOGY OF THE STUDY

This is a conceptual paper developed on the basis of reviews from literature. The literature supports to understand the concept of Artificial Intelligence and its flow in recruitment strategy. Secondary sources such as Websites, Journals, Reports, Publication of professionals and books are referred for drafting the entire paper.

To draft out the paper in a proper format researcher started to surf all the required keywords which lead to find more research articles related to AI and Recruitment. The search engine Google helped the researcher to find more related blogs which were exclusively focusing on Artificial intelligence, its importance and how does it relates to the business world. Recruitment done using AI was the key term used for the overall paper. Sites like Harver.com, LinkedIn, and Workology all focused majorly on AI and its nature of work.

7. BASICS OF AI IN RECRUITMENT

In the Digitalized economy we are in the beginning of Fourth Industrial Revolution which has quickly taken us into scientific developments such as nanotechnology, robotics, machine learning, algorithm, artificial intelligence are all ranging up and almost acts as a supplement for one another. The revolution of turning into digital era has lead to vagueness between the machine power and manpower. Artificial Intelligence seems to attract HR and Recruitment industry by a blizzard. Recruitment is a task of attracting the prominent aspirant with required job skills and hire them by outsourcing agencies or by HR managers of the business for a job vacancy.

The use of Artificial intelligence and machine learning for job search would reduce the time and cost for both company and the candidate. New technology on recruitment will lead to use more timing on selecting prospective aspirants and less on resume scrutiny. According to Raj Mukherjee, senior vice president of Indeed.com, states that, about 65% of candidates apply for new job within 91 days of being hired at a job. As Indeed.com operates in more than 50 countries and has about 200 million visitors to its site per month.

Artificial Intelligence is used by HR in Eight ways while recruiting:

1. **Screening Candidate:** AI tool helps the candidate to engage themselves before or even after they apply for vacancies specified by the organization. Running in the digitalized economy companies can interact with candidates using chat box as it is AI tool. A Chat box helps the candidate by responding to the queries and also AI tool asks for feedback and required information about the candidate.
2. **Candidate Engagement:** We access and apply for job using many job sites but the how many of them revert back to the application is less. AI tool automates a candidate application process using automated e-mails or by using messaging system. As these automated information may keep in touch with the candidate which may lead to quick response from the candidate.
3. **Re-Engagement:** Application tracking system often ends with the closing for job opening takes place. But in using AI tool, it allows to target the determined candidate and check with their interest level in the position applied for. As AI tool also uses the engagement opportunity to keep the updated record of candidate if they approach for new position or promotion.
4. **Post-Offer Acceptance:** Once candidate have done with the application process and further procedures, he or she will be asked for acceptance. And once they have given their acceptance, a gray area exists and it happens usually two weeks before they join to work at organization they preferred for.
5. **New hire On-boarding:** An orientation program is said to be the new hire onboarding system. It is effective to new hires as it introduces policies, procedures and cultures of organization. All these formal procedures can also be answered by AI tools to the candidates and also it aids new hires with information and resources that leads to existing programs.

6. Career Development: Employees always need to be motivated with well-established training programs, equipped with learning environment, and career growth information to be shared by boss or superior which is highly impossible. But, the solution is AI tool as the ability to conduct such programs and coach individually as per the organization need.
7. Employee Relations: Employees usually land up with many queries at work. Queries may be on their benefit coverage, vacation leave, appraisal and what is their payment slab. Sometimes they have complex questions and they require HR manager to answer them for a long time. AI tool manages employees all sort of queries using the chat box, email form or a virtual conversation in a meeting hall.
8. Scheduling: To coordinate for a meeting or even to book for interview halls is something like wasting time and leads to unproductive activity which leads to overflowing of inbox. But, AI tool enables to even book meetings, schedules and even place order for foods without having to do a single thing.

8. IMPORTANCE OF AI IN RECRUITMENT

1. Time saving: AI saves time by keeping the records as such which leads not to do the repeated event. Usual mode of recruitment takes place to spend enough time to screen resume of candidates. And as such screening of resume is a repetitive task.
2. Mapping of Talents: AI assist HR in acquiring best talent required for the organization. It also targets on competency based candidates to place them on right job with the right talent.
3. Cost saving: The task of acquiring right aspirant to the organization takes place with qualitative manner and outsourcing recruitment agency is reduced. So, AI tools helps to save costs.
4. Hire with Quality: AI tool works in a way that it uses huge data for recruitment and does an unbiased screening and selection takes place. There by it leads to hire with quality candidates.
5. Query redressing: Employees get updated information and get immediate responses for their queries. Ultimately, it leads to satisfy employees and ends up with employee engagement. And, it helps in decreasing employee turnover ratio and entitles with good service to the organization.
6. Unbiased recruitment: Hiring of candidates takes places with machines and no involvement of human. So, it leads to unbiased screening and candidate selection.
7. Quality aspirants: AI packages helps to screen and select quality aspirants. It helps to identify candidates' skills, competency and trait that match the job applied for. So, it results in hiring talented candidate.

9. CONCLUSION

Artificial intelligence is a technology which can work smartly as equal to human brain in different situations. It gains attention and importance in automating recruiting system when compared to traditional recruitment methods. Recruitment is the central activity of all organization to work on. Now, recruitment industry is taking up growth by implementing smart way to recruit i.e., recruiting through artificial intelligence. And numerous industries are focusing on the changes taking place in recruitment process. AI technology has tremendous impact on recruitment activity as it enables the recruiter to align all some unstructured candidate bio-data, construct profile into uniformity, identify and match skill sets required for the industry. In today's era, recruiters think AI technology is competing with them for recruitment activity. But, it is human built software to make the work at ease while

the process is carried on. To conclude the role of AI it is the combination of humans and AI that leads to data maintenance, save the cost and time to the organizations with more accuracy and access in total recruitment process.

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