

A Study on Artificial Intelligence in Reinventing Human Resources

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Abstract –This paper first make a point about terminology as there are lots of concepts that touch upon AI which might strictly be limited to ‘intelligent agents’ that mimic ‘cognitive’ behaviour. We are taking a broad approach to include expert decision-making systems, simulation and modelling, robotics, natural language processing, use of technologically-driven algorithms etc in this paper. Thus, we are including assisted, augmented and autonomous intelligence in the various ways that humans are supported, or replaced, by AI. Many technologies which were once seen as ‘cutting edge’ have become routinized and so no longer noticed as part of the change process. The chat boxes and cobots (robots collaborating with humans) we discuss here will, at some point, be mainstreamed.

Keywords–Artificial Intelligence, Human Resource, Recruitment, Reinvention

I. INTRODUCTION

In computer science, artificial intelligence sometimes called machine intelligence is intelligence demonstrated by machines, in contrast to the natural intelligence displayed by humans. Leading AI textbooks define the field as the study of "intelligent agents": any device that perceives its environment and takes actions that maximize its chance of successfully achieving its goals. Colloquially, the term "artificial intelligence" is often used to describe machines that mimic "cognitive" functions that humans associate with the human mind, such as "learning" and "problem solving".

In the twenty-first century, AI techniques have experienced a resurgence following concurrent advances in computer power, large amounts of data, and theoretical understanding; and AI techniques have become an essential part of the technology industry, helping to solve many challenging problems in computer science, software engineering and operations research.

Human resources is being used to describe both the people who work for a company or organization and the department responsible for managing resources related to employees. The term human resources were first coined in the 1960s when the value of labour relations began to garner attention and when notions such as motivation, organizational behaviour, and selection assessments began to take shape.

Human Resource refer to individuals or personnel or workforce within an organisation responsible for performing the tasks given to them for the purpose of achievement of goals and objectives of the organisation which is possible only through proper recruitment and selection, providing proper orientation an induction,

training, skill developments, proper assessment of employees, providing appropriate compensation and benefits, maintaining proper labour relations and ultimately maintaining safety, welfare and health concern of employees, which is process of the human resource management.

II. LITERATURE REVIEW

“To AI or not to AI”, a play on Shakespeare age-old adage, is making waves into today’s TechEd-up world as many industries are looking into AI solutions for their businesses, especially when it comes to human resources. Many organizations are scared of letting a non-human entity handle certain procedures of business, but the day when AI robots could possibly take over the world is far from today due to the ‘Hollywood’ driven concept of AI. Having an untold potential in the increase of efficiency, partnered with a cost-effective solution, does it not only make sense to adapt to the modern world, but to use the benefits of AI for your businesses recruitment needs, or your needs in general? Is it the right choice for your business? Here is what you need to know in order to answer that question.

1. AI means reduced recruiting timelines

The time of spending hundreds of man-hours filtering through thousands of CVs and online job-board profiles for new employees is coming to an end. For example, ideally, a company, specializing in AI recruiting services, claims on their blog and estimates their AI candidate sourcing algorithm can reduce time to hire from 34 days to 9 days. This is a 73.53% increase in candidate sourcing and on boarding efficiency utilizing a non-biased process that removes stereotypes from sourcing and finds

candidates that are technically appropriate for the position.

Candidate screening is another task that can be automated by technology of AI. By using this intelligent-style method much more online data can get collected such as information from social media profiles, previous online job records, and educational qualifications that will then enhance the ranking system of candidates for recruiters to select from.

Given AI technology can efficiently source and screen multiple candidates in a short period of time the acceptance criteria set by the business and the candidate profile has to be matched to identify and match the most promising candidates for the job. Using this gathered data AI programs can then rank candidates on a scale using various pieces of information such as experience, work history, skill sets, and salary expectations to find the right person. This method of processing data is becoming highly valued in today's market because of its ability to locate passive candidates, who are generally the most desired, as they aren't actively looking for other positions and they are content with their current position meaning they are an asset to their company which in turn means there is less competition to place them.

A huge part of the recruiting timeline, after you've found the 'perfect fit' for the role, is interviewing. In today's international job market, numerous expats are actively seeking roles abroad while not always being able to go to the respective country of their desired job just for an interview. There are a few start-ups that are specializing in AI interviewing software such as HireVue and Mya. These companies are shifting their focus on simplifying the interviewing process by utilizing video as the medium. Programs such as HireVue use pre-set questionnaires that the candidate can then film themselves answering. This allows for the recruiter to generically interview a higher number of potential candidates via pre-recorded videos, which can then be sifted through to select individuals who will progress in the talent acquisition process. Using AI technology, the footwork is taken care of from sourcing to interviewing which drastically reduces the recruitment timeline. This, in turn, allows for the talent acquisition team to engage with prospective candidates and determine their ability to perform in the specific role, and inevitably, make a placement at a much faster rate.

2. AI in human resources is cost-effective and better for business overall

Along with numerous man-hours, countless company dollars are being spent on old-fashioned recruitment in today's market. A 2016 Society of Human Resource Management survey found that "the average cost-per-hire is \$4,129". That is a staggering dollar amount to place one individual. Let's put it in perspective.

CNN in 2017 reported that Amazon had 541,900 employees in the third quarter of 2017, which was up

from a little more than 300,000 in the same period a year before. This means that over 12-month period, Amazon hired an estimate of 241,900 new employees. Granted Amazon is already using AI technology in its recruitment services but for the sake of the argument let us pretend they did not and let's pretend their cost of hiring one employee was that of the average found by SHRM. The cost would look like:

$\$4,129 \text{ (Average cost to hire)} \times 241,900 \text{ (New employees)} = \$998,805,100$ in recruitment costs per 1 year.

It is estimated that in this scenario Amazon could have spent upwards of \$1 Billion USD on recruitment cost alone over the period of a year. This is quite astounding and nearly incomprehensible, but possible. With many of the AI recruitment and Human Resources programs available offering tailor-made packages on a monthly, quarterly, and yearly subscription basis, it's not hard to see that you can save a pretty hefty penny by transitioning to AI technology solutions.

3. AI in human resources will improve the employee experience and take engagement down to the individual level.

Richard Hughes, Senior Vice President at UnitedHealth Group, in the recent IBM Think 2018 panel, stated, "The future is going to be centred on the employee experience and taking engagement down to the individual level. There is no way we can do that on any scale without applying the best that 'data science' has to offer." AI isn't only about giving humans a hand at doing lower level tasks, it's about data. Vast amounts of data can be collected at an exponentially higher rate with AI than humans can wish to accomplish. These data drives businesses in general, not only in the Human Resources department.

In larger corporations many employees can feel lost and unengaged by their employers and HR department. Anything from vacation requests not being acknowledged to unenforced policies can be the tipping point for most employees which results in high turnover rates. A high salary doesn't make an employee happy. Most people feel their jobs are their lives, and no one wants to live an unhappy life.

By having an access to a wider array of data you have the ability to make your employees' overall experience better by applying the gathered data and making relevant adjustments to the workplace atmosphere or internal processes. A recent tweet says, "Having good data is like having good health. When you have it, you take it for granted. When you don't, you panic." Simply put, increased data means increased data analytics, which means advanced insights that lead to improved working conditions for employees that keeps turnover rates low.

4. AI in human resources and setbacks to consider

There are multiple advantages to utilizing AI technology for your human resources and recruiting needs, but

nothing is perfect in life, certainly not a budding form of technology that has yet to reach its maximum potential. Many services and programs offered could lack different aspects one might be accustomed to in manual the non AI world, such as the ability to leave feedback to a candidate after a video interview, or specific CV search criteria. One major aspect that AI technology lacks is empathy and human interaction or the opportunity to handpick a candidate and get to know them personally during the recruitment process which simply cannot be done at this time while relying on AI technology to do all the work for your company. AI sees data while humans sense emotion and this is something that will not be changing in the foreseeable future.

Therefore, it is up to you to decide whether AI technology is the right solution for your business needs. Are you a corporation with thousands of employees, spending big bucks on recruitment annually and desperately need a way to streamline the process and cut costs? Are you a mom-and-pop shop that has less than 15 employees and takes pride in getting to know each employee like family? Every business has different goals, budgets, and desires, but the beauty of the AI industry is that it has a solution for everyone, no matter how big or how small.

Now, it is up to you to decide what works for your business, whether that is adapting to the constant growing AI industry or keeping things as they are or just introducing small changes over time. Either of the way, AI technology is only going to keep growing or at some point in the future AI will be the norm and the old-fashioned ways of recruiting and human resource processes will seem like the stone ages.

III. IMPACT OF AI ON DIFFERENT OCCUPATIONS IN FUTURE

1. **Teaching (Kristin Houser, 11th December, 2017):** AI plays very important role in profession of teaching, students learn differently with the help of AI. According to United Nations educational, scientific & cultural organization the percentage of primary and secondary school children not attending school is of high percentage, so digital teachers can attract children to learn something with the help of AI.
2. **Drivers (Vishal Marria, 2019):** AI is going to replace drivers by mid-2030's, it uses certain algorithms for driving a car and prevention of risks and accidents, although driverless cars are existing but it will emerge & transform within few decades by 30%.
3. **Bluecollar and white collar jobs (clalum McClelland 2018):** Bluecollar & white collar jobs will be eliminated, nearly 20 to 30 million jobs will be eliminated by the year 2030 and it can also

eliminate 30% of jobs of labour and it can displace jobs of 800 million of people.

4. **Doctors (Vinod khosla, Silicon Valley investor):** He argues robots are going to replace doctors by the year 2035, and definitely 50% of jobs will be replaced by AI in the next decade. He even said that machines will substitute 80% of doctors in future by healthcare seen entrepreneurs but not by medical professionals.
5. **Lwyers (Mckinsey Global institute):** AI can predict better legal outcomes than humans. It is clear that AI and machine learning emerging and transforming at present, & by the year 2036 1 lakh legal roles will be automated and it reduce the job of lawyers and the way of dealing cases. According to Mckinsey Global institute 23 % of jobs can be automated in future.

IV. AI INTEGRATED COMPANIES

1. **HealthTech:** It is a company which is located in Chicago, Illinois which analyse massive pools of clinical data with the help of AI. It provides health assistance to each individual, and also checks past history of patient and diagnose according to it, it also focusing on cancer research
2. **AEye:** It is a company which is located in Pleasanton, California, it builds vision algorithms which is the main core for autonomous vehicles like it give its preference for animals on the roads, people rather than giving preference to sky and other things.
3. **Captricity:** It is a company which is located in Oakland, California which receives data from many channels including handwritten document. It increases from manual work to digital workflow & leads the organizations and companies like metalife and mass mutual.
4. **Google:** Google is a worldwide search engine. It is leading AI companies in the world and also started 12 Artificial Intelligence leading companies in four years. The main AI efforts in google are oriented towards services it consists of major software project in tensorflow was well as its own tensorflow chip project.

V. CONCLUSION

Integration of HR practices with Artificial Intelligence based applicants definitely have a stronger impact in enhancing the organizational performance. Even though Artificial Intelligence applications may not possess the abilities like humans the emotional and cognitive abilities, but these powerful AI based Human Resource applications can analyse, predict, diagnose, and it is

powerful resource for any kind of organization. But the real fear daunting the Global workforce is how Artificial Intelligence is showing its impact in job cutting across various sectors throughout the world. But, the reality is that it is not the advanced technologies that are replacing people, but it is all about how the people should change and view these technologies in creating wealth and prosperity. There will be some percentage of employees which are affected by the AI based functions, so it is the duty of the HR leaders and organizations to focus on its employee needs and possible outcomes. Finally based on study most of the organizations are successfully integrating Artificial Intelligence based tools in recruitment but in near future AI is everywhere in HR: May be in recruitment, training, on boarding, performance analysis, retention etc., but majority of the organisations are still lagging in integrating AI to its HR-Practices because of its cost associated in integration. To, conclude the AI implementation should be viewed as an optimistic opportunity, because AI enhances the lives, Artificial Intelligence creates better future if it is clearly understood and utilised in a proper way.

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