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## AN OVERVIEW OF ARTIFICIAL INTELLIGENCE IN HRM

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### ABSTRACT:

Artificial Intelligence is widely revolutionizing many industries at an alarming rate. Some, of them are advanced AI robots, Cloud-Computing, Machine-language. Artificial intelligence is producing multiple solutions for hiring managers including some basic recruiting tools, intermediate applications and advanced AI solutions. Together or independently, these tools are creating a more effective way for human resources to predict a candidate's future success with their company. Artificial intelligence (AI) is transforming the human resources field altogether. The current study would throw some light on artificial intelligence breakthroughs and implications with respect to Human Resources.

**KEYWORDS: Artificial, Intelligence, Human, Resources, Functions, Implications.**

### INTRODUCTION:

In computer science, artificial intelligence (AI), sometimes called machine intelligence, is intelligence demonstrated by machines, in contrast to the natural intelligence displayed by humans and other animals. Computer science defines AI research as the study of "intelligent agents": any device that perceives its environment and takes actions that maximize its chance of successfully achieving its goals. Heinlein define AI as "a system's ability to correctly interpret external data, to learn from such data, and to use those learning's to achieve specific goals and tasks through flexible adaptation". In general, term "artificial intelligence" is applied when a machine mimics "cognitive" functions that humans associate with other human minds, such as "learning" and "problem solving".

The scope of AI is disputed: as machines become increasingly capable, "intelligence" are often removed from the definition, a known phenomenon is that an AI effect, leading to the quip in Tesler's Theorem, "AI is

whatever has not been done yet." For instance, optical character recognition is frequently excluded from "artificial intelligence", having become a frequently used technology. advanced machine capabilities generally classified as AI include successfully understanding human speech, competing at the highest level in strategic game systems (such as chess and Go), autonomously operating cars, and intelligent routing in content delivery networks and military simulations.

Kaplan and Haenlein classify artificial intelligence into three types of AI systems: analytical, human-inspired and humanized artificial intelligence. Analytical AI has characteristic consistent with cognitive intelligence generating comprehensive representation of the world and using learning based on past experience to inform future decisions. Human-inspired AI has elements from cognitive as well as emotional intelligence, understanding, in addition to perceptible elements, human emotions considering them in their decision making. AI shows characteristics of all types of competencies (i.e., cognitive, emotional, and social intelligence), able to be self-conscious and self-aware in interactions with others.

AI and automation might replace roles, it's easy to forget that, these are same technologies having a huge performance system like finding, securing and retaining employees". In this era of constant change and digital skills shortages, finding the right talent is more challenging than ever. By using AI and automation, businesses can identify a diverse range of top candidates quickly and easily, and at a pace that keeps stride with the frantic speed of modern business."

## ARTIFICIAL INTELLIGENCE AND HR FUNCTIONS

**Personalized employee experiences:** IBM officials in their study discussed how AI is effectively be woven into an employee's on-boarding program. Employees who typically want to meet people and acquire information typically may not know where to go. They may ask their desk neighbour. But what if he/she works in a different department? "What if Joe had been welcomed with new hire information on his mobile device that was tailored to his first assignment?" IBM officials wrote in the report on transforming HR with AI. IBM is looking to create a system that will answer a new employee's most pressing or critical job questions to help get them up to speed fast. AI, for example, could provide training suggestions or provide the names, locations and contact info for people he/she should look to connect with on his first day or so. Same employee could also be advised by AI engines that a new hire webpage contains a lot of useful information.

**Cognitive-supporting decision-making:** IBM officials, who generally promote their own AI capabilities through IBM Watson, also demonstrated ways cognitive engines could help employees arrive at key day-to-day decisions in the workplace. Usually, HR team members would have to handle these tasks:

- **Vacation requests** - Employees that want to put in for vacation days are informed that it is unlikely to be approved as many others have already booked their vacation in that time frame.
- **Determining your mood** - An employee takes a client call. After the call, the employee receives feedback that he seems anxious and should take a break before his meeting.
- **Team training** - When an organization wants to take a more systematic approach to employee training, team

managers are provided with a list of training opportunities for team members.

**Hiring processes** - A hiring manager is provided with information that the company's recruitment approach falls short because it interviews too few candidates. Cognitive solutions can help organizations tap into multiple data sources and reveal new insights to help companies develop candidate profiles, among other things.

**Management and leadership:** We operate like Zen masters. We read books, we go to workshops, we copy the bosses we admire, and we glorify the successful leaders of the day. Do we really know the science of leadership? I would suggest it's a fleeting topic. Now we are focused on purpose, mission, and followership. A few years ago it was "servant leadership" and when I was young it was "execution and financial acumen." Most studies find that there are dozens of management and leadership traits that define success, and each of us bring a slight different and unique combination of them.

AI can now help decode this the vendors who have built "AI-based" coaching tools, systems that request feedback, read the reviews, and intuit sentiment from employees and teams. They use this data to match the individual and teams' issues against higher performing teams, and use that data to give managers and supervisors "nudges" on how to do better. Once a client told that within 3 months of using the tool their leadership teams showed a 25% improvement in corporate values just based on small behavioural nudges. (Vendors in this space include Reflektiv, BetterWorks, Ultimate Software, Zugata, Humanyze, ADP, Impraise, and more.)

**Fraud and compliance:** The opportunities are massive. A study found that employees who steal or commit crimes are "contagious" to their peers (people who work with them picks up bad habits). AI can look at organizational network data (email traffic, sentiment of comments) and identify areas of stress, areas of possible ethical lapses, and many other forms of compliance risk, and the point out the "red areas" to HR or compliance officers so they can intervene before bad behavior occurs. (Vendors in this space include Trust Sphere, Keencorp, Volley, Cornerstone, and more.)

**Well-being and employee engagement:** AI is now being used to identify behaviours that cause poor work performance. For safety, AI can identify behaviours and experiences that lead to accidents. A new breed of survey tools can identify patterns of stress and bad behaviour and alert HR or line managers. (Vendors in this space include Limeaid, VirginPulse, Glint, Ultimate Software, CultureAmp, TinyPulse, Peakon, and more.)

**Employee self-service and candidate management:** A new breed of intelligent chatbots can make interactions intelligent and easy. (Vendors in this space include IBM, ServiceNow, Xor, Mya, Ideal, Paradox, and more) (Joshbersin, 2018).

## DISCUSSION:

AI is not some magical computerized persona; it is a wide range of algorithms and machine learning tools that can rapidly ingest data, identify patterns, and optimize and predict trends. The systems can understand speech, recognize the photos, and use pattern matching to pick up signals based upon the mood, honesty, and even

personality. These algorithms are not “intuitive” like human beings, but they are fast, so they can analyze millions of pieces of information in seconds and quickly correlate them against patterns.

According to statistical survey, AI systems can “predict” and “learn,” by plotting curves of possible outcomes and then optimizing decisions based on many criteria. So you could imagine an AI system that looks at all the possible means of demographic barriers to be eliminated, job history, and interview questions with a candidate and then “predicts” how well they will perform on the job. (HiredScore, Pymetrics, HireVue, IBM, and others are working on this.)

All these applications are advanced, and as exciting as they seem, there are plenty of risks to worry about. The biggest is that AI cannot work without “Training data.” In other words, the algorithms learn from the past. If your current management practices are biased, discriminatory, punitive, or overly hierarchical, you may just wind up institutionalizing all the things you hate. We need AI that is transparent and “tuneable” so we can inspect the algorithms to make sure they’re doing the right things. Just like the early automobiles didn’t always drive straight, our early algorithms are going to need “bumpers” and “tuning knobs” so we learn how to make them more accurate.

The systems can institutionalize bias. Suppose your company has never hired women in engineering and has very few African American engineers. The AI recruitment system would naturally conclude that women and black engineers are less likely to move into management. This type of bias has to be carefully removed from the algorithms, and it will take time to do this well.

There’s a risk of data exposure and inadvertent misuse as well. Considering a common use of analytics where we try to predict the likelihood of a high-performer leaving the company, we can inform the manager about his departure in order to create the fact that his wrong behaviour – the manager may ignore this person, or treat him or her differently. We have to learn how to apply behavioural economics carefully. AI is a “tool” for suggestion and improvement and it is not an independent decision making system alone today.

AI leaders at Entelo discussed the need to create “interpretive” and “transparent” AI systems. In other words, whenever the system makes a decision, it should tell us why such decision has been taken by it, so we as humans can decide that the criteria used by it are still accurate. This is one of the most important criteria for new tools, and unfortunately today most AI systems are a complete black box.

Consider what happens when an autonomous vehicle has a crash. We spend a lot of time diagnosing how it happened, what visual or algorithmic systems failed, and what conditions could have led to the accident. What if AI makes the wrong recommendation on a candidate, or a salary adjustment, or a management intervention? Will we find out? Will we diagnose it? Will we even notice until it’s too late? We have a lot of work to do and learn how to “train” our management-base AI systems to work well.

Today the hype around AI is high. The entire HR software vendor wants you to believe they have a machine learning team and a best-of-breed AI solution. The capabilities are immensely important to this industry, but don’t believe the hype.

The success of an HR tool is dependent on many things: the accuracy and completeness of its algorithms, the ease of use of the systems, but more important than all its ability to provide what is called “narrow AI” – or the specific solutions is that it solve your problems. It possible only when the vendor has massive amounts of data (to train its system) and they gain lots of feedback on how well it works. So I believe the barriers to entry are to be considered, business strategy, and client intimacy, not just having great engineers.

And don't buy a system that's a black box unless you can really prove it in your company. Each and every company's management and people decisions are often culture-based, so we'll have to take time to try these systems in the real world and tune them for best use. IBM, for example, has spent years optimizing its AI-based compensation and career solutions for its company, culture, and business model. The companies are now bringing these tools to corporate clients and finding that each implementation teaches IBM new things about the algorithms to make them better for that industry, culture, or organizational need.

Despite these challenges and risks, the upside is enormous. Company spends 40-60% of their revenue on payroll and such enormous expense is driven by management decisions we make on gut feel. As an AI systems in HR is getting smarter, more proven, and more focused on specific problems, I believe we will see dramatic improvements in productivity, performance, and employee wellbeing. We just have to be patient, vigilant, and willing to invest.

#### **IMPLICATIONS:**

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". It is 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 AI technology. The usage of this intelligent-style method much more online data can be collected like 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. The method of processing data is gaining more value 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 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 have found the 'perfect match' for the role, is interviewing. In today's international job market, numerous expects are actively seeking the roles abroad while not always being able to go to the respective country of their desired job just for an interview. Many startups that are specialized in

AI are interviewing software such as HireVue and Mya. Various companies are shifting their focus on simplifying the interviewing process by utilizing video as the medium. Programs such as HireVue use preset questionnaires that the candidate can then film themselves answering. The technology allows 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 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 the specific role, and inevitably, make a placement at a much faster rate.

Along with numerous man-power, 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". The staggering dollar amount to place one individual. Let's put it in perspective.

In 2017, CNN 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 earlier." This means that over that 12 month period, Amazon hired an estimated employee of 241,900. Amazon is already using AI technology in its recruitment services but for the sake of the argument let's pretend they didn't (like a lot of large companies today) 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 (Average cost to hire) x 241,900 (New employees) = \$998,805,100 in recruitment costs per 1 year (Pay, 2018).

It's estimated that in this scenario Amazon could have spent upwards of \$1 Billion USD on recruitment costs alone over the period of 12 months. It 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.

In the recent IBM Think 2018 panel, Richard Hughes, Senior Vice President at UnitedHealth Group, stated, "The future is going to be centred on the employee experience and taking engagement down to the individual level.." AI isn't just about giving human 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. The data is what 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 Human Resource department. A high salary does not make an employee happy. Most people feel their jobs are their lives, and who wants to live an unhappy life? No one.

Having access to a wider array of data means 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 by Hughes 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.

**CONCLUSION:**

As much as the HR technology landscape continues to be disrupted by AI. HR teams need to balance these cognitive tech advancements with transparency. HR leaders and practitioners need to have a clear understanding of how decisions are being made to mitigate unknowingly injecting bias into their programs. This transparency will be essential in making sure that employees trust the new technology.

As you've gathered by now, 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 Curriculum vitae 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 whereas humans sense emotion and this is something that will not be changing in the foreseeable future.

Therefore, it is up to you to decide if AI technology is the right solution for your businesses' 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 there is a solution for everyone, no matter how big or how small.

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 way, AI technology is only going to keep growing and 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.

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