



## AN OVERVIEW AND SIGNIFICANCE OF ARTIFICIAL INTELLIGENCE IN HRM

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### **Abstract**

*Artificial Intelligence is gaining lot of significance and importance in the present scenario and is revolutionizing many industries and leads to the sustainable development every field of business and Industry. Artificial intelligence is producing multiple solutions in the area of human resources is for hiring managers including 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. This paper focuses on the recent trends, challenges and advantages of artificial intelligence in human resources due to changes of technology in IT landscape.*

**Keywords:** *Artificial Intelligence, Human Resource, Implications.*

### **Introduction**

The computer science and Internet Technology is developing continuously. In computer science, artificial intelligence (AI), sometimes known as machine intelligence, which 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 and reactions that maximize its chance of successfully achieving its objectives. The scope of AI is disputed as machines become increasingly capable, tasks considered as requiring "intelligence" are often removed from the definition, a phenomenon known as the AI effect, leading to the quip in Teller's Theorem, "AI is whatever hasn't been done yet." For instance, optical character recognition is frequently excluded from "artificial intelligence", having become a routine technology. Modern 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. Organizational leaders and human resource executives have faith that merging artificial intelligence (AI) into HR functions like on-boarding and administration of benefits can and will improve the overall employee experience.

AI and automation might replace roles side by side, it's easy to forget that these very same technologies have a huge role to play in 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 frenzied speed of modern business."

### **Objectives of the study**

- To study the recent developments and trends in Artificial Intelligence.
- To know the challenges faced by the industries due the impact of technologies.

### **Literature Review**

There are many definitions of human resource management brought forward by a range of researchers; however most of the definitions do complement each other. A definition by Schemerhorn (2001) is that HRM is how you are able to gain and develop a workforce which is talented; to help the company



achieves its goals, as well as its mission, vision and different objectives at hand. Another definition is that HRM is an approach to employee management with the aim of retaining a workforce which is both capable and committed by different techniques, such as cultural, structural and personnel to bring the organization a competitive advantage (Storey, 2004). According to findings from the Forrester Tech Tide: Cloud Human Capital Management, Q4 2019, organizations are turning to workforce analytics and planning. In these workforce analytics applications, AI and machine learning are becoming even more apparent.

The research conducted within recruitment as a part of HRM has increased in the later decades and there is now more available research on how recruitment actually impact applicant behaviors and employee behavior (Taylor & Collins, 2000). Recruitment is defined as the practice of finding the right candidates which make up a candidate pool which fits an open job vacancy that a company have (Stoilkovska, Ilieva & Gjakovski, 2015). Recruitment can also be said to be the centerpiece within HRM, as it is those employees that are hired who will be subject later on to the other HRM practices. (Griepentrog, Harold, Holtz, Klimoski & Marsh, 2012).

### **Research Background**

In the present globalized world, the traditional ways of how business is conducted are being challenged. Every business is facing global competition. There are no longer only local firms as competitors, but organizations have to compete constantly on a global level as new technology is making the world smaller (Erixon, 2018). This implies that for an organization to stay up to date and keep a competitive advantage, embracing these new technological developments is important factor. HRM involves many different aspects, such as training employees, recruitment, employee relations and the development of the organization (Wall & Wood, 2005). Humans work as a source of knowledge and expertise which every organization can and should draw on. Therefore, acquiring and retaining these types of employees through recruitment play a big role today. The recruitment process used to be longer, take a large amount of time and imply a large amount of paperwork for the recruiters, however this has already slowly started to change with online recruitment becoming common (O'Donovan, 2019).

### **Methodology**

The paper is based on secondary data. The data has been collected from internet, articles newspapers, Magazines etc.

### **Artificial Intelligence and Hr Functions**

The Basic artificial intelligence programs that helps the recruiters with the sourcing and screening processes include screening chatbots and automated social media scraping tools. These tools are designed to provide weak or average indicators about an applicant's likelihood of success with the company. Mya, an AI recruiting assistant created by First Job, is one such chat bot that interacts with applicants to verify they meet job requirements, answer questions and keep them informed on their application's status, according to the Society for Human Resource Management. This bot provides 24/7 support through chat, text message, Skype or e-mail, and will contact a human when it can't complete a task. Social media scraping tools are another type of artificial intelligence recruiting tool. These bots can collect vast amounts of data through an applicant's social media profiles and use this data to predict certain behaviors like future engagement levels. Hiring strategy requires applicants to spend around twenty minutes playing some neuroscience-based Pymetrics games.



### **Recruitment and on boarding**

Many of the organizations are already beginning to integrate AI technology into their recruiting efforts; the vast majority of organizations are not. In fact, Deloitte's 2019 Global Human Capital Trends survey found that only 6 percent of respondents believed that they had the best-in-class recruitment processes in technology, while 81 percent believed their organization's processes were standard or below standard. For this reason, there are tremendous opportunities for professionals to adapt their processes and reap the benefits of using this advanced technology. During the recruitment process, AI can be used to the benefit of not only the hiring organization but its job applicants, as well. For example, AI technology can streamline application processes by designing more user-friendly forms that a job applicant is more likely to complete, effectively reducing the number of abandoned applications.

### **Internal Mobility and Employee Retention**

Human Resource professionals can also utilize the Artificial intelligence to boost internal mobility and employee retention. Through personalized feedback surveys and employee recognition systems, human resources departments can gauge employee engagement and job satisfaction more accurately today than ever before. This is incredibly beneficial considering how important it is to understand the overall needs of employees, however there are several key organizational benefits to having this information, as well. According to a recent report from the Human Resources Professional Association, some AI software can evaluate key indicators of employee success in order to identify those that should be promoted, thus driving internal mobility. Doing so has the potential to significantly reduce talent acquisition costs and bolster employee retention rates.

### **Automation of Administrative Tasks**

The one of the major advantage of leveraging artificial intelligence in various human resources processes is actually the same as it is in other disciplines and industries: Automating low value, easily repeatable administrative tasks gives HR professionals more time to contribute to strategic planning at the organizational level. This, in turn, enables the HR department to become a strategic business partner within their organizations. Smart technologies can automate processes such as the administration of benefits, pre-screening candidates, scheduling interviews, and more. Although each of these functions is important to the overall success of an organization, carrying out the tasks involved in such processes is generally time-consuming, and the burden of these duties often means that HR professionals have less time to contribute to serving their employees in more impactful ways.

### **Candidate Resumes and Employee referrals on Smart Digital Forms**

Human Resource is all about connecting companies with current and prospective employees on a personal level. For this to be achieved on a large scale, HR departments need to be leveraging scalable, AI technology, according to Adriana Bokel Herded, Pega's chief people officer. AI is also involved in enabling HR teams to better understand employee referrals by looking into the kinds of candidates employees are referring and gaining insight on who refers the most successful ones, according to Bokel Herde. "AI can also analyze performance data from previous referrals and recognize when candidates similar to successful employees are being recommended," she said. AI provides HR departments with an opportunity to improve the candidate and employee experience by automating repetitive, low value tasks and freeing up time to focus on the more strategic, creative work that HR teams need and want to get done.



## **Boosting Learning and Development Programs**

The future of learning and development departments using AI will increase tremendously over the next couple of years, according to Elizabeth Greene, director of global learning and development at ON Semiconductor. These departments will be expected to create agile and adaptable learning programs that are able to meet the individual needs of employees. At the same time, they will use data and analytics in a deeper way to show impact back to the business.

Greene shared a few ways in which her company is adopting a data-first mindset building the employee experience through adopting AI:

- Personalizing the learning journey based on job role, existing skill sets development plan and future goals, and proactively addressing any skills gaps that exist.
- Assigning stretch assignments and cross-functional projects based on employee skill sets and projects listed across the organization through social learning channels.
- Content matching and recommendations based on relevancy to the individual employee needs.
- Real-time responses to frequently asked questions via chat bots accessible to all employees to type in questions and quickly receive an automated response.
- Coaching chat bots accessible to leaders needing additional support in their roles.

## **Advantages of Artificial Intelligence**

### **Talent Acquisition**

The most prominent use of AI in HR is seen in the talent acquisition processes. From screening candidates, maintaining databases, scheduling interviews, and answering job seekers' queries, it reduces manpower spent on mundane tasks. It reduces hiring time significantly, allowing the HR team to be more productive in other areas like sourcing, recruitment marketing, employee management, and more. The AI-enabled screening will help in picking out the candidates with the most suitable skill set, relevant experience that fit the company's requirements. AI-based chatbots can communicate with potential candidates and match their profiles against the position requirements. It will narrow down the list to only those aspirants that fit the job description. The AI-enabled system will then schedule interviews and hire the top applicants.

### **On boarding**

After the hiring processes, the AI-integrated system will introduce the new employee to the company information on their first day. From job profile to company policies, the reporting authority, team members, task assignment, and other information, will be automatically relayed to them through an app or laptop. The entire process is defined as on boarding. Artificial intelligence allows customization of the process to cater to individual employees and their respective positions. Algorithms can be integrated within the software for:

- Explaining job profile, duties, and benefits.
- Relevant and important contacts within the company.
- Answering frequently asked questions by new employees.
- Document verifications
- Device requests and more.

### **Learning and Training**

AI-integrated systems can also help in teaching and training the employees in their respective domains. The skills required by a job position are constantly changing with time. With new innovations and



software in the market, it is imperative that we learn and adapt to the new technologies to stay on top. AI will assess the employees' skills and recommend videos or learning programs based on their job requirements. It will automatically read documents or analyze an employee's activities and create appropriate learning programs.

### **Cognitive-Supporting Decision-Making**

IBM conducted a study in 2017 over how cognitive computing will influence HR. The research revealed that artificial intelligence can help professionals make quick decisions on day-to-day matters. The Human Resource department is responsible for the mental, emotional well-being of an employee apart from their work contributions. AI-enabled systems will take over the task of observing and analyzing employees' mood before and after a client call. The HR can then decide if the individual needs a break or can continue.

### **Leadership**

As AI helps improve employee productivity, it can also help train leaders to excel in their position. AI-enabled systems will ask the leaders' team members and assess their remarks to determine a customized coaching module for the leaders. Additionally, the leaders can access online dashboards and view a comparison of their management against their peers. It will help them understand the effectiveness of their methods and how to improve.

### **Administrative Tasks**

AI-based software can automate repetitive, administrative tasks. It can play a role in HR strategy, employee management, analysis of company policies and practices, manage payrolls, and more. It can automate the workforce; investigate corporate compliance, and litigation strategies. From screening to interview scheduling, AI can speed up hiring processes. Additionally, it can also allocate office space and equipment allowing HR staff to direct their time to more valuable tasks.

### **Wrapping Up**

Artificial intelligence requires a lot of data to work efficiently for which it needs proper storage and management. Companies would need extra personnel to operate and maintain the advanced software. Additionally, with the rising preference of SaaS solutions, the low datasets for AI will also pose difficulty in the worldwide adaptation of the technology. The ideal strategy to employ AI in HR management would be to use AI software to analyze the data collected and leave the decision-making to the human staff. Before implementing AI within HR operations, examine the areas where AI could be useful. If the primary reason is to improve the overall employee experience, it could increase productivity and decrease operational costs.

### **Artificial Intelligence programs**

#### **Chatbots**

Certain technology, such as chatbots, can help employee's access important information about policies and procedures from anywhere and at any time. Chatbots communicate by text and can be useful for answering common employee questions. Two-thirds of respondents said that they believe employees are more comfortable using chat bots than other forms of contact for transactional inquiries about paid-time-off policies, open enrollment and leaves of absence, according to a 2017 Service Now survey of 350 HR leaders. Service Now is a cloud computing company based in Santa Clara, Calif. Employers that use chat bots need to ensure that they are complying with data security, disability and other federal and state employment laws.

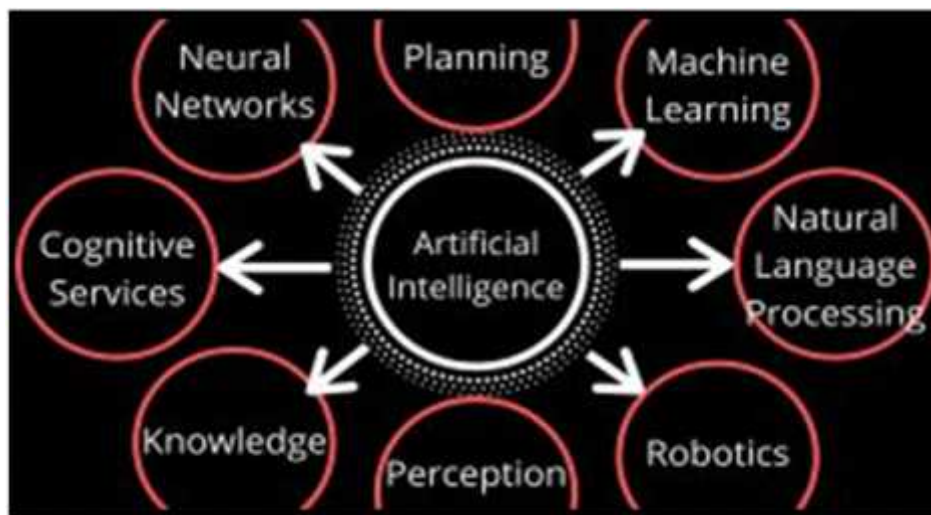


### Legal pitfalls

When using AI to drive human resources strategy, HR professionals must monitor systems for bias. They need to look out for disparate impact—which happens when a seemingly fair or neutral standard is actually discriminatory in practice. For example, a recruiting tool may weed out candidates that are more than 10 miles away from the worksite. What if the neighborhoods surrounding the worksite are predominantly made up of affluent white families? This hiring criteria could have a disparate impact based on race and ethnicity (Nicastro, 2018).

### Recruiting

Some of the studies showed that most hiring managers make a decision on a candidate within the first 60 seconds of meeting a candidate, often based on look, handshake, attire, or speech. Do we really know what characteristics, experiences, education, and personality traits guarantee success in a given role? No we don't. Managers and HR professionals use billions of dollars of assessment, tests, simulations, and games to hire people – yet many tell me they still get 30-40% of their candidates wrong. Algorithms based on AI can weed through resumes, find good internal candidates, profile high performers, and even decode video interviews and give us signals about who is likely to succeed. One organization uses Pymetrics' AI-based gamified assessment to screen candidates for its marketing and sales roles and their success rate has gone up by over 30%, while eliminating all the “interview bias” and “educational pedigree bias” inherent in the current process.



Source: Google Images

### Challenges and opportunities faced by Artificial Intelligent

Artificial Intelligence (AI) is a source of both enthusiasm and skepticism, albeit in different measures. With humans and machines joining forces now more than ever before, AI is no longer confined to innovation labs and is being hailed for its immense transformational possibilities. However, businesses need to overcome certain challenges before they can realize the true potential of this emerging technology. The key lies in leveraging the right opportunities in AI.

### Provability

Organizations involved in AI cannot demonstrate clearly why it does and what it does. No wonder AI is a “black box”. People are skeptical about it, as they fail to understand how it makes decisions. Provability – the level of mathematical certainty behind AI predictions – remains a grey area for



organizations. There's no way they can prove or guarantee that the reasoning behind the AI system's decision-making is clear. The solution lies in making AI explainable, provable, and transparent. Organizations must embrace explainable as a best practice.

### **Data privacy and security**

Most AI applications rely on huge volumes of data to learn and make intelligent decisions. Machine Learning systems feast on data – often sensitive and personal in nature – to learn from them and enhance them. This makes it vulnerable to serious issues like data breach and identity theft. Here is some good news; the increasing awareness among consumers about the growing number of machine-made decisions using their own personal data, has prompted the European Union (EU) to implement the General data protection and regulation (GDPR), designed to ensure the protection of personal data. Besides, an emerging method – 'Federated Learning' – is all set to disrupt the AI paradigm. It will empower data scientists to develop AI without compromising users' data security and confidentiality.

### **Algorithm bias**

an inherent problem with AI systems is that they are only as good – or as bad – as the data they are trained on. Bad data is often laced with racial, gender, communal or ethnic biases. Proprietary algorithms are used to determine who's called for a job interview, who's granted bail, or whose loan is sanctioned. If the bias lurking in the algorithms that make vital decisions goes unrecognized, it could lead to unethical and unfair consequences. For instance, Google Photos service uses AI to identify people, objects and scenes. But there's a risk of it displaying wrong results, such as when a camera missed the mark on racial sensitivity, or when software used to predict future criminals showed bias against black people.

### **Data scarcity**

it is fact that organizations have access to more data today than ever before. However, datasets that are relevant for AI applications to learn are indeed rare. The most powerful AI machines are the ones that are trained on supervised learning. This training requires labeled data – data that is organized to make it ingestible for machines to learn. Labeled data is limited. In the not-so-distant future, the automated creation of increasingly complex algorithms, largely driven by deep learning, will only aggravate the problem. There's a ray of hope though. As a trend that's fast catching up, organizations are investing in design methodologies, trying to figure out how to make AI models learn despite the scarcity of labeled data.

### **Building trust and Soft ware malfunctions**

The AI is related to science, technology, and algorithms which mostly people are unaware of, which makes it difficult for them to trust it. With machines and algorithms controlling AI, decision making ability is automatically ceded to code – driven Black Box Tools. Automation makes it difficult to identify the cause of mistakes and malfunctions. Moreover, due to the lack of ability of human beings to learn and understand how these tools work, they have little or no control over the system which is further complicated as automated systems become more prevalent and complex.

### **Artificial Intelligence and HRM**

Personalizing the learning journey based on job role, existing skill sets development plan and future goals, and proactively addressing any skills gaps that exist. Assigning stretch assignments and cross-functional projects based on employee skill sets and projects listed across the organization through social learning channels. Content matching and recommendations based on relevancy to the individual employee needs. Companies are using AI to help candidates transfer information from their resumes



onto smart digital forms and more efficiently complete their applications. “This information,” Bokel Herde said, “can also automatically be sent through background check and new hire forms.



**Source: Google Images**

For instance, AI can recognize relevant information off a candidate’s resume, store it and automatically input it into future forms so they aren’t forced to constantly repeat themselves over and over AI provides HR departments with an opportunity to improve the candidate and employee experience by automating repetitive, low value tasks and freeing up time to focus on the more strategic, creative work that HR teams need and want to get done. Instead of spending time overseeing every step of the new employee on boarding process, those steps can be intelligently automated, Bokel Herde added, leaving teams to invest more time in more important tasks such as mentoring and gathering feedback. Real-time responses to frequently asked questions via chat bots accessible to all employees to type in questions and quickly receive an automated response. Coaching chat bots accessible to leaders needing additional support in their roles.

### **Conclusion**

The traditional HR systems continues to be disrupted by Artificial Intelligence. HR teams need to balance these cognitive technological developments and 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. Daily advances in technology are present and the insertion of new ways to make daily life easier.

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