



# HR in the Era of AI Paradoxes: Balancing Automation and Human Touch

S. Suneetha <sup>1</sup>, A. Krishna Sudheer <sup>2</sup>

Ch. Shankar <sup>3</sup> and Sukanya Metta\*

<sup>1</sup> Vardhaman College of Engineering, Kacharam, Hyderabad, 501218, India

<sup>2</sup> S Koneru Lakshmaiah Education Foundation, Hydereabad-500075, Telangana, India

<sup>3</sup> GITAM School of Business. GITAM University (Deemed to be), Hyderabad-500075, India

<sup>4</sup> Vardhaman College of Engineering, Kacharam, Hyderabad-501218, Telangana, India  
Sukanyametta79@gmail.com

**Abstract.** This study delves into the intricate interplay between artificial intelligence (AI) and human resources (HR) management within the technology industry. It comprehensively explores the potential benefits and challenges associated with integrating AI into HR processes, reflecting optimistic and pessimistic outlooks on its future implications. The concept of AI is elucidated, encompassing its multifaceted applications and advancements. An optimistic vision of the future envisions AI as a catalyst for enhanced efficiency, productivity, and employee well-being. Conversely, a pessimistic case highlights concerns about job displacement, privacy infringements, and biased decision-making. Central to this discourse is the discussion on management, labour, and technology dynamics, unveiling the evolving role of AI in shaping HR practices. Early experiences of AI and machine learning (ML) implementations in people management are scrutinized, shedding light on real-world challenges and successes. The imperative of a better future is contemplated, prompting considerations for ethical AI development, responsible commercialization, and bias mitigation.

An in-depth exploration of bias in AI systems is undertaken, focusing on its definition, manifestations, and implications for HR operations. The role of HR professionals in mediating bias and promoting fair AI deployment is examined, underscoring their pivotal responsibility in safeguarding employee rights and organizational integrity. The study also delves into the regulatory landscape surrounding AI in HR and proposes potential directions for future research in this dynamic field. This research contributes to a nuanced understanding of the symbiotic relationship between AI and HR within the technology sector. It calls for proactive measures to harness the potential of AI for the betterment of both organizations and employees while addressing the challenges and ethical considerations inherent in this transformative journey. This study advocates cultivating a harmonious coexistence between human expertise and technological innovation by fostering informed discourse and strategic planning.

**Keywords:** Artificial Intelligence (AI), Human Resources (HR), Technology Industry.

© The Author(s) 2024

N. V. Suresh and P. S. Buvanewari (eds.), *Proceedings of the International Conference on Digital Transformation in Business: Navigating the New Frontiers Beyond Boundaries (DTBNNF 2024)*, Advances in Economics, Business and Management Research 283,

[https://doi.org/10.2991/978-94-6463-433-4\\_40](https://doi.org/10.2991/978-94-6463-433-4_40)

## 1 Introduction

AI is generally acknowledged as a transformational technology with the potential to disrupt the world of labor (McKinsey Global Institute, 2017). The use of artificial intelligence (AI) in human resource management (HR) has gotten much attention, with over 300 HR technology start-ups creating AI tools and solutions for HR or people management (Bailie & Butler, 2018). Eightfold and Phenom, for example, have achieved momentum in terms of clients and venture capital investment, with values exceeding billions of dollars (Singh, 2021; Kelly, 2021). AI has begun to be integrated into the people management systems and procedures of start-ups and large multinational technology organizations. IBM, for example, achieved cost savings of more than \$100 million in a single year due to AI adoption in HR (Guenole & Feinzig, 2019). Accenture has also invested strategically in Beamery, a London-based start-up that provides a recruiting operating system with a stated worth of \$800 million (Lunden, 2021). Although the utilization of AI in business is currently limited, these examples indicate that an AI-driven future in HR is approaching (Davenport et al., 2018; Raghavan & Raghavan, 2021). However, concerns exist regarding the potential negative implications of AI in human resources (Brynjolfsson & McAfee, 2014; Cappelli, 2019). Some worry that AI-powered supervisors would impair job quality, ushering in a dismal work future (Dzieza, 2020). According to prominent critics, the technology sector prioritizes technical and economic aspects of AI over ethical and social implications (Floridi, 2019; Jobin et al., 2019).

This article examines various applications of AI in HR and people management and explores the potential implications for the industry. It is conceivable that AI could enhance the fairness and effectiveness of HR procedures (Smith, 2019). According to Moriarty (2018), if AI is not implemented ethically and responsibly, there is a potential for widespread injustice and excessive management control. It is crucial to recognize that integrating AI in HR and people management will likely bring positive and negative outcomes. The future trajectory of this integration will largely depend on the decisions made by stakeholders, including HR professionals. To ensure a desirable outcome, HR professionals must actively participate in shaping the deployment of AI (Moriarty, 2018). Neglecting HR involvement may lead to de-skilling HR work and substituting human judgment with opaque algorithms, which could perpetuate outdated approaches to people management (Davenport, 2019). This article begins by defining AI and its relevance to HR. It then explores how AI may impact the HR profession and people management activities. While broader debates about job quantity and types are not explicitly addressed, potential scenarios for AI usage in HR are considered. The article acknowledges the real risks of a dystopian future but highlights potential solutions and

the need for collective action. It concludes by outlining steps HR practitioners and researchers can take to achieve a more desirable future.

### **1.1 What is Artificial Intelligence?**

Artificial intelligence (AI) leverages digital technology to create autonomous systems capable of performing tasks that typically necessitate human intellect” (Office for AI, 2019). Significant progress has been achieved in the last decade in text analysis, speech recognition, understanding, and picture identification thanks to machine learning (ML), a branch of artificial intelligence (Russell & Norvig, 2022). ML-based AI systems improve performance by learning from experience and generating predictions or classifications based on identified patterns (Russell & Norvig, 2022).

Despite extensive research on the technical aspects of implementing machine learning and AI in HR and people management, empirical data on its real-world usage and outcomes is scarce. Instead of analyzing reactions to practical applications, much of the existing literature in this field focuses on responses to hypothetical scenarios. As AI is still a relatively new technology, its potential applications and impacts are still being explored, and there may be unintended consequences (Müller-Schloer et al., 2019). However, to shape and improve the trajectory of this phenomenon, it is crucial to gain a comprehensive understanding of its implications (Davenport, 2019). It is essential to take note of that the nature of preparing information fundamentally impacts the viability of ML AI; for ML AI systems to function successfully, sufficient, representative, and correctly labeled data are required (Lebovitz et al., 2021). Classification and prediction tasks may be hampered by "edge cases" or situations with particular characteristics the AI has never seen before (Lebovitz et al., 2021).

Although AI in HR and people management has limitations and potential risks, it is also possible to shape its ethical and responsible use. HR professionals can play an active role in contributing to the growth of AI and ensuring its positive impact on the industry by acquiring knowledge about AI and actively incorporating it into their practices (Moriarty, 2018). By staying informed and engaged with AI technologies, HR professionals can leverage their expertise to guide its implementation and ensure that it aligns with ethical principles and best practices (Boudreau & Cascio, 2017).

## **2. A Promising Outlook for the Future**

A Promising Outlook for the Future, where machine learning AI significantly enhances the effectiveness and fairness of people management, is a central idea in this field (Brynjolfsson & McAfee, 2017). The potential for AI to improve decision-making, reduce bias, and streamline HR processes has been widely discussed and studied (Davenport, 2019; Kudyba, 2019). This positive outlook stems from the

belief that AI can analyze immense measures of information, recognize designs, and give important experiences that can prompt better talent management and more equitable practices (Boudreau & Cascio, 2017). However, it is essential to approach this vision cautiously and ensure that AI is implemented ethically and responsibly to avoid unintended consequences (Moriarty, 2018). This may be done by developing and implementing numerous AI use cases in HR. AI-driven hiring and selection procedures are one such application case. Conventional application management systems may automate specific selection processes by eliminating apps lacking relevant keywords. However, artificial intelligence (AI) systems cango beyond that by actively searching out and promoting job opportunities to fresh candidate pools, automating preliminary selection phases via algorithmic analysis of CVs and applications, robot interviews, and gamified applicant assessments. This may aid in identifying applicants who have the qualities and talents of the organization's top performers without being influenced by the heuristics and biases of human recruiters (such as educational background, gender, and ethnicity).

Decisions on talent management and workforce planning inside firms may be made using the same ideas. ML AI systems have the potential to assess employee performance more equitably and accurately compared to human managers by leveraging digital data from diverse sources such as employee software usage, communications, sensors, and audio-video streams (Davenport, 2019; Brynjolfsson & McAfee, 2017). By analyzing these data streams, AI systems can generate insights to inform decisions or recommendations related to employee hiring, promotions, and salary increases, to maximize motivation and retention (Boudreau & Cascio, 2017).

Additionally, using chatbots, AI can enhance the effectiveness and caliber of HR operations. With the help of HR chatbots, consumers may communicate with virtual agents in real-time and get help with various HR-related activities. Chatbots may answer questions, carry out basic tasks, and even manage requests for job references or course reservations. As a result, human specialists can concentrate on more challenging problems where their knowledge is valuable (Strohmeier & Piazza, 2015). These AI use cases continue current HR technology trends, but AI stands out due to its size, accuracy, and efficiency in cognitive activities. By leveraging ML AI, organizations can improve their recruitment and selection processes, enhance decision-making in talent management, and streamline HR operations, ultimately leading to more efficient and fair people management practices.

## **2.1 A Pessimistic Case**

A pessimistic perspective on the use cases mentioned above highlights potential negative consequences for workers and societies. One of the primary issues is that businesses often use new technology that reduce employee autonomy, pay, and job security. AI can lead to algorithmic bias and discrimination concerns regarding recruitment and selection processes. Despite efforts to mitigate bias, AI systems can still perpetuate and amplify societal inequalities (Eubanks, 2018). For example, if

historical data used to train AI models reflects discriminatory practices, the algorithms may inadvertently perpetuate biased decision-making in candidate selection (O'Neil, 2016). This can result in unfair treatment of certain groups and hinder diversity and inclusion efforts.

Regarding workforce planning and talent management, the reliance on AI systems to make decisions about promotions, pay raises, and retention can raise concerns about transparency and accountability. ML AI models are often referred to as "black boxes" because of their intricate algorithms and difficulty to understand (Mittelstadt et al., 2019). This opacity can make it difficult for workers to understand or challenge the decisions made by AI systems, leading to feelings of powerlessness and decreased job security. Furthermore, introducing AI-driven technologies and chatbots in HR operations can affect job displacement and deskilling. These technologies may expedite operations and boost productivity, but they may eliminate jobs or force individuals to learn new skills (Brynjolfsson & McAfee, 2014). Workers unable to adapt to the AI-driven workplace may experience job instability and salary stagnation.

Organizations must emphasize ethics and develop and deploy AI systems to address these issues to promote justice, transparency, and worker empowerment. This involves monitoring and auditing AI algorithms to discover and reduce biases (Veale et al., 2018) and offering employees upskilling and reskilling to adapt to new technology (World Economic Forum, 2020).

### **3. Management, Labour, and Technology**

Labor process theory implies that profit-driven enterprises must constantly adapt their production and service delivery techniques to lower labor costs, increasing their use of surveillance and monitoring technology (Burawoy, 1979). Evidence suggests that proponents have promoted technical breakthroughs by stressing efficiency and lower labor costs, consistent with employers' profit-seeking rationale (Brynjolfsson & McAfee, 2014). The worldwide percentage of revenue flowing to labor has declined since 1970 due to growing investment in information technology assets, demonstrating the emphasis on efficiency and cost reduction above labor (Autor, 2015). Due to technology and declining worker power, employees have worked longer and had less autonomy and influence over their occupations (Huws, 2014). The possible consequences of using machine learning artificial intelligence (MLAI) technologies must be considered. Brynjolfsson and McAfee (2014) worry about job displacement and deskilling owing to automation, which might raise precarity and weaken employee bargaining strength. AI in HR processes like recruiting and performance appraisal may also generate biases and increase inequalities (Datta et al., 2015; Koltai, 2020). Improperly built and managed AI systems might propagate discrimination and hamper diversity and inclusion initiatives. To address these issues, be aware of the possible drawbacks of ML AI adoption and seek to mitigate them. This includes ensuring transparency and accountability in algorithmic decision-making (Mittelstadt et al., 2019), promoting worker participa-

tion and voice in technology implementation (Wood & Graham, 2021), and providing opportunities for upskilling and reskilling to support workers in adapting to changing job requirements (World Economic Forum, 2020).

#### **4. The tech industry and making money off of AI**

Automation and augmentation are two different ways to think about how AI should be made. However, labor process theory says that people who might buy AI are more likely to be interested in automation. This makes AI writers lean toward this method (Davenport, 2019). Ethical and societal consequences may be downplayed in this pursuit as developers prioritize commercial considerations over broader ethical considerations. Critics argue that the technology industry, including AI developers, often neglects ethics and societal impact. They contend developers are not genuinely interested in addressing the ethical and societal problems that may arise from AI deployment (Brynjolfsson & McAfee, 2014). These critiques question the internal logic driving AI classification systems. They may even argue that AI use cases in HR are essentially "snake oil" products due to fundamental flaws in classification systems. Despite these criticisms, AI advocates confidently promote the use of AI in HR and other domains. However, it is essential to critically examine AI deployment's ethical and societal implications to ensure that these technologies are developed and used responsibly. It is important to note that these critiques do not suggest that biased and unfair AIs cannot be rectified. Instead, they highlight the lack of motivation among AI developers to proactively address the ethical and societal challenges associated with AI (Birhane, 2021; Crawford, 2021). This raises concerns about the potential negative impacts of AI adoption in HR and other domains.

#### **5. ML and AI in People Management: Early Results**

The retail and distribution industries show how AI and ML are changing employment. Algorithms categorize and anticipate the most efficient labor techniques, typically squeezing maximum effort from insecure and low-paid employees, approaching digital Taylorism (Woodcock & Graham, 2020). Amazon warehouses, in particular, have faced criticism for the demanding pace and intensity, leading to severe injuries and extreme physical exhaustion among workers (Kantor & Streitfeld, 2015). Additionally, Amazon has faced backlash for automating worker dismissals, further eroding worker rights and job security (Hill, 2019). In retail, scheduling algorithms minimize labor costs and prevent workers from qualifying for enhanced benefits by offering unstable hours and income (Lambert & Henly, 2019). The gig labor sector, electronically mediated and hyper-flexible, is developing and using similar algorithmic management techniques (Woodcock & Graham, 2020). While algorithmic management has thus far been limited to controlling relatively simple tasks with structured data from sensors, advancements in AI are expected to enable more complex pattern recognition and image analysis capabilities. In new job sectors, this may enhance supervision and decrease worker autonomy. In

pubs and restaurants, AI-powered security cameras monitor and supervise serving workers (Woodcock & Graham, 2020). Hospitals use algorithms to prioritize and assign nursing work (Sahni et al., 2019). Amazon has installed AI-linked cameras to monitor delivery drivers (Shaban, 2021). These discoveries raise worries about AI-enabled workplace spying.

The problematic instances are due to AI and ML developers' philosophy of automating decision-making over augmenting. AI and ML are assumed to provide better results than conventional decision-making by domain experts. However, recent ethnographic research on designing an ML tool for recruiting graduate candidates in a global organization highlights the drawbacks of this method. The study revealed that developers intentionally excluded domain knowledge from the tool's development, opting for a purely data-driven approach. Domain specialists in the organization opposed this choice, arguing that domain expertise was crucial to predicting employee success with the ML tool. These experts stated that hiring choices based on predictors without a causal effect on employee performance would be erroneous (Davenport, 2019). Including domain experts in designing and developing AI tools can lead to dangerous use cases. AI systems may produce biased or inaccurate results by disregarding domain experts' contextual knowledge and expertise. It is crucial to involve domain experts throughout the development process to ensure that AI tools are designed to align with the specific domain's complexities and nuances (Davenport, 2019).

## 6. Can There Be a Better Future?

The optimistic and pessimistic perspectives on the development of AI are not mutually exclusive, as they both highlight contradictory demands that will shape its trajectory (Smith & Lewis, 2011). This paradoxical nature calls for strategies to mitigate the negative aspects and promote positive outcomes. In addressing this challenge, we assert two claims. Firstly, issues of AI bias can be effectively addressed and resolved. Secondly, although the danger of AI snakeoil exists, it is feasible to develop AI and ML systems that are fair, ethical, and efficient by incorporating domain knowledge into their design.

Addressing AI bias requires recognizing that biases can be identified and rectified through diligent efforts. Research has demonstrated that algorithms can perpetuate and amplify societal biases if not carefully designed and monitored (O'Neil, 2016). There are ways to identify and prevent AI biases. AI systems should include subject experts in design and development and consider several perspectives to guarantee fairness and impartiality (Crawford et al., 2019). Diverse views help AI systems understand domain intricacies and reduce prejudice. Continuous

AI system monitoring and assessment are essential for bias detection and correction. Audits and evaluations may identify and rectify biases over time (Crawford et al., 2019). To guarantee fairness and reduce biases, varied stakeholders, including those impacted by the AI system, and may give valuable ideas and viewpoints (Crawford et al., 2019). AI systems may become more unbiased, equitable, and

aligned with society by actively recognizing and reducing biases. Recognizing that bias results from AI design, development, and deployment is crucial (O'Neil, 2016).

Domain knowledge integration in AI and ML design is essential to avoid AI snake oil. This requires developing tools and algorithms comprehensively grasp the domain's context and needs. Developing domain experts may help (Floridi et al., 2018). Domain experts' skills and insights increase AI systems' accountability, transparency, and ethics. Domain experts may advise on domain-specific problems, biases, and ethical issues, helping to develop AI systems that better meet user demands and values (Floridi et al., 2018). This domain knowledge integration improves AI system interpretability and explainability. Developers may improve trust and reduce the impression of AI as a black box by leveraging domain knowledge to comprehend better and explain algorithm conclusions (Floridi et al., 2018). By prioritizing integrating domain knowledge in AI and ML design, we can mitigate the risks associated with AI snake oil and create AI systems that are more reliable, accountable, and aligned with the specific needs and values of the domains they are applied to.

AI and ML technologies may be created to align with social norms, uphold human rights, and provide trustworthy and accurate outcomes using domain expertise (Bostrom & Yudkowsky, 2014; European Commission, 2019). By acknowledging the solvability of AI bias and the possibility for just and moral AI ML systems, the problems brought by AI may be successfully handled. Biases may be reduced, and AI systems can be made ethically and by societal norms by adding domain knowledge into the design and development process.

## 7. Managing the Bias Challenge

A considerable debate over prejudice in artificial intelligence (AI) systems, specifically in HR systems, has been triggered by Google's recent firing of Timnit Gebru and Margaret Mitchell (Simonite, 2021). The "fractal problem" or "infinite onion" problem, which Mitchell discussed, highlights the difficulty of overcoming bias in AI research. According to Mitchell, as described in Simonite (2021), each problem is said to enlarge into related concerns that are difficult to resolve and progress that can be measured.

In order to fully comprehend the biased discussion around AI in HR systems, it is essential to stop and consider the existing environment. The possible biases in AI algorithms used for recruiting and employee appraisal have been noted in several research. For instance, Angwin et al.'s (2016) study found that some AI systems used to forecast criminal behavior demonstrated racial biases, adversely affecting Black people. Buolamwini and Gebru (2018) discovered similar accuracy differences in commercial gender categorization algorithms, misclassifying darker-skinned and feminine looks.

It takes a thorough strategy and rigorous attention to detail to address bias in AI HR systems. Including many viewpoints and subject expertise in the development



process is one suggested remedy. AI algorithms may be created to consider the intricacies of human behavior and the societal environment by working with specialists in HR, ethics, and social sciences (Mittelstadt et al., 2019). By ensuring that the algorithms have a thorough understanding of the particular HR area and its possible hazards, this method seeks to reduce biases.

Accountability and openness are critical additional factors. The remark made by Mitchell highlights the necessity to halt and describe what we perceive at a particular stage of the development process. This necessitates meticulously outlining the architecture of the algorithm, the training set, and the decision-making procedures. Mitchell et al.'s (2018) suggestion of model cards may provide a uniform framework for reporting AI models' effectiveness and possible biases. Such openness makes HR AI systems more susceptible to external review and makes it easier to spot and address biases.

Furthermore, mitigating prejudice in AI HR systems requires legal and legislative actions. In order to guarantee justice, non-discrimination, and ethical concerns while deploying AI technologies, governments, and organizations must develop rules and laws (Floridi et al., 2018; European Commission, 2019). These measurements may provide consumers and developers with a foundation for navigating the complex world of AI bias and encouraging responsibility. The AI bias discussion involving HR systems is intricate and complicated. Mitchell's insight on the "fractal problem" highlights the challenges of addressing bias in AI development. Nevertheless, incorporating domain knowledge, ensuring transparency, and implementing regulatory measures can contribute to mitigating biases and promoting fairness in AI HR systems.

## 7.1 Bias: A Definition

An unintended consequence of AI in human resources is unfair recruitment, promotion, and termination treatment. Artificial intelligence algorithms may evaluate or predict differently for diverse populations, leading to these differences (Hutchinson & Mitchell, 2019). New approaches to this problem have attempted to unite computer science and social science to draw more precise distinctions between the two. Even if AI models are enhanced to work equally well for all groups, adverse effects can still exist and cause alarm. If the selection rate for a group is less than 80% of the group with the highest selection rate (EEOC, 1979; Scherer, 2017), then the AI system is considered to have produced an adverse impact under North American Civil Rights law, regardless of the cause. Adverse effects, bias, and fairness are often used synonymously to characterize this situation in computer science literature, mirroring how media and popular culture interpret prejudice. Industrial psychologists see this as a negative influence rather than prejudice, however. If an AI system focuses its judgments on key distinctions between groups, it may be objective yet still have adverse effects.

This distinction is important because, as Pyburn et al. (2008) described, resolving the

diversity- validity conundrum often results in decreased prediction accuracy of future job performance. If judgments are made by job-related criteria and the AI system's rating forecast performance similarly for all groups, some businesses could feel at ease with varying selection rates. The US courts, which many other nations see as a model for controlling adverse effects, adhere to this approach. If test results anticipate performance, the negative effect is not illegal in the US. Organizations must, however, show that there was no other predictor that was just as good but had a less negative impact (Pyburn et al., 2008).

Various analytical techniques, such as alternative tests or the ability to predict performance over a broader range of performance criteria, have been created by psychologists and statisticians with a primary emphasis on content-related bias/adverse effect (Ployhart & Holtz, 2008). The use of pre-processing techniques that separate predictor variables from protected attributes, training constraints to ensure balanced predictions during model building, and post-processing techniques like using a coarser scoring system to equalize scores are some of the methodological approaches that computer scientists have proposed to address adverse impact (Bellamy et al., 2018).

## 8. Misconceptions

A common objection against machine learning AI is the suitability of HR data for predicting job-related outcomes due to its perceived quality. It is argued that HR data, often based on subjective opinions and judgments, may inherently contain biases against minority groups (Dwork et al., 2012). This criticism, however, may be overcome by sophisticated latent variable models, which quantify and forecast latent variables based on observed actions. Overcoming worries regarding biased results may be accomplished by determining whether or not these models perform similarly for various groups (Kleinberg et al., 2018). As the instance of Amazon's defunct recruiting ML system shows, there is also concern that AI models trained on data consisting primarily of white men may provide biased conclusions that favor that demographic. ON THE OTHER HAND, well-trained IO psychologists and well-designed AI systems do not mindlessly copy the gender and race of current high achievers. They instead undertake job analyses to determine the requisite KSAOs (knowledge, skills, abilities, and characteristics). Candidates are ranked according to their relative performance on assessments measuring job-related characteristics, which helps reduce prejudice (Schmidt & Hunter, 1998). Concerns about AI models being black boxes, making it difficult to understand why adverse impact occurs, have also been raised. While it may not be practical to comprehend every decision an AI system makes entirely, methods exist to understand black-box models' inner workings. Model explainability in artificial intelligence is rapidly evolving, with techniques available for evaluating variable importance and improving our ability to explain AI models (Ribeiro et al., 2016). There is no need to accept that prejudiced AIs will inevitably emerge. The resources to create unbiased AI systems already exist, and ideas from industrial psychology may be used to mitigate any unin-

tended consequences. The difficulty is in ensuring these techniques are widely used in practice (Barocas et al., 2020).

## 9. What the HR job is all about

While some critics argue against the use of AI in HR and people management, claiming it is an ideological project to control human behavior and reduce autonomy, it is important not to reject AI in this field altogether. The reality is that AI in HR is likely to become increasingly common, and actively engaging with AI in HR is more likely to yield better results than resisting its implementation. To ensure the development of fair AI tools that do not perpetuate organizational biases, domain knowledge, and experience are crucial. Collaboration between senior HR experts and those involved in creating and utilizing automation technologies is essential. By incorporating the expertise of HR professionals, AI algorithms can be developed based on expert knowledge, leading to more successful AI systems that combine augmentation and automation techniques (Davenport et al., 2018).

Fairness in AI systems requires more than just technical improvements and subject expertise. Additionally necessary are the development and deployment procedures. At all phases of design, development, and deployment, ethical AI demands collaboration with and participation from stakeholders, especially current and potential workers whom the technology may impact (Leslie, 2019). Without HR's engagement in discussing AI development with the people impacted, there is a greater danger that AI systems would be unjust and prejudiced and harm employees. Engagement is required to guarantee ethical AI and ensure that the HR profession has a future that upholds its value (Murray et al., 2021). Evidence from other knowledge-based professions indicates that relying on algorithmic systems unthinkingly might result in de-skilling, while constantly challenging and scrutinizing these systems can support the maintenance of professional skills (Callen, 2021).

Individual HR practitioners must up skill and acquire the essential skills in computing, statistics, and critical thinking to put ethical ideals into practice and protect the future role and position of the HR profession (Scholz, 2020). HR professional groups may also promote voluntary standards for the acquisition and development of AI tools and systems in HR (Moore, 2020). According to Cowgill et al. (2020), Jo & Gebru (2019), Hutchinson & Mitchell (2019), Berg (2019), Leslie (2019), and Tambe et al. (2019), these criteria could call for diverse engineering teams' openness in the provenance of training data, model explainability, and stakeholder engagement. While voluntary norms are vital, governmental regulation may be required to provide the sector with the necessary protections against "bad AI" (REC, 2021).

## 10. Regulating AI for HR

Civil rights legislation in the USA protects employees, as employers risk legal repercussions if they cannot demonstrate that the adverse effects of using AI tools on

minority groups are job performance-related (Dwork et al., 2012). This legislation also extends to employee privacy outside of the workplace. While it may constrain the creation of discriminatory AIs for recruiting, promotion, and pay decision-making, its impact on AI's ability to give employers more control over employee behavior at work through observation and regulation is minimal.

The European Commission released a draft law on AI in April 2021, aiming to strengthen employee rights afforded by the General Data Protection Regulation (GDPR) in Europe. The rule categorizes using AI in various HR functions as "high risk," requiring strict safety measures. However, critics argue that the lack of enforcement mechanisms leaves employers to manage risks based on their standards, potentially undermining stricter national statutes. Some European countries already have laws mandating worker representation and agreement in introducing algorithmic management tools (Moore, 2020).

Using AIs as managers raises legal issues that current employment laws in most nations are ill-prepared to address. Determining liability for decisions made by AI is a challenge. New legislation is needed to address the difficulties posed by AI in HR and people management, regardless of geographic location (Moore, 2020). Given their commitment to ethical standards and the risks posed by unethical AI use, professional HR groups would likely support such legislation. However, enacting new legislation faces challenges due to power dynamics between technology corporations, states, and labor and capital (Moore, 2020).

To protect workers from exploitation and discrimination by AIs, it is crucial to integrate pluralism into HR practices, recognizing the legitimacy of independent worker representation through trade unions. This allows workers to access protection resources (Moore, 2020). By empowering workers, a system of checks and balances can be established on the decisions of tech billionaires that dominate the economy (Moore, 2022).

## **11. Future Research Directions**

Understanding and influencing the application of AI in enterprises, especially in HR, depends heavily on academic research. There is still a need for more qualitative phenomenological research to offer new theoretical insights, even though some theoretical frameworks have been put forth, such as the role of AI in reorganizing social relations and labor divisions within organizations (Bailey & Barley, 2020).

Ethnographic field studies are invaluable for a better understanding how AI is used in practice and how it affects HR professionals. These studies may investigate how AI impacts HR professionals' activities and competencies and how they might moderate this influence (Bailey & Barley, 2020). The ideology and power structures of individuals who create and commission AI management and organization systems should also be considered in research. This entails researching the goals and objectives of HR tech start-ups, as well as the difficulties and more significant trends in the business ecosystem of AI for HR (Bailey & Barley, 2020; Bailie &

Research should also look at how AI will affect society and the workforce. Audit studies may show if AI recruiting and selection methods reinforce, mitigate, or lessen discriminatory practices. Studies may also examine how AI affects workplace norms, values, and employee well-being. It is crucial to comprehend how NGOs and unions will react to the use of AI in people management duties. In addition, research should examine whether people creating AI in HR build professional and ethical norms and standards and how they react to institutional and social pressures (Bailey & Barley, 2020; Langer & Landers, 2021).

In general, academic research may provide insightful information on the use of AI in human resources and people management, assisting in shaping its growth and ensuring that it aligns with ethical and social concerns.

## References

1. Adams-Prassl, Humans as a service: The promise and perils of work in the gig economy, Oxford University Press, London (2019)
2. Agrawal, A., Gans, J., & Goldfarb, A., Prediction machines: The simple economics of artificial intelligence, Harvard Business Press, Brighton, Massachusetts (2018)
3. Aloisi, A., & Gramano, E. The governance of algorithms: Exploring the role of worker representatives in the deployment of algorithmic management tools. *European Journal of Industrial Relations*, 25(4), 361-376. (2019)
4. Angrave, D., Charlwood, A., Kirkpatrick, I., Lawrence, M., & Stuart, M. The use of technology in the management of human resources: A survey of UK workplaces. *British Journal of Industrial Relations*, 54(2), 412-437. (2016)
5. Bailey, D. E., & Barley, S. R. Artificial intelligence in organizations: Opportunities and challenges for management and implications for public policy. *Academy of Management Perspectives*, 34(4), 485-507, (2020).
6. Bailey, D., & Barley, S. R. The changing nature of work: Careers, identities, and work lives in the 21st century. Oxford University Press, (2020).
7. Bailie, J., & Butler, P. The Rise of AI in HR: Separating Hype from Reality. Deloitte Insights, (2018).
8. Barocas, S., Hardt, M., & Narayanan, A. Fairness and machine learning. In *The Oxford Handbook of Ethics of AI* (pp. 1-39). Oxford University Press, (2020).
9. Bellamy, R. K., et al. AI fairness 360: An extensible toolkit for detecting, understanding, and mitigating unwanted algorithmic bias. *Proceedings of the 2018 AAAI/ACM Conference on AI, Ethics, and Society*, 67-74, (2018).
10. Benbya, H., Belbaly, N., & Elouarradi, A. Artificial intelligence in human resource management: Challenges and a path forward. *Journal of Business Research*, 117, 931-939, (2020).
11. Benbya, H., Ding, Y., & Følstad, A. Unpacking the AI black box: A framework for HR leaders to understand and mitigate AI risks. *Human Resource Management Review*, 30(1), 100713, (2020).
12. Berg, M. AI and the ethics of automation in HRM. In *The Routledge Companion to the Future of Marketing* (pp. 51-63). Routledge, (2019).

13. Birhane, A. Algorithmic injustice: A relational ethics approach. *Philosophy & Technology*, 34(1), 119-142, (2021).
14. Birhane, A. Algorithmic Injustices: Towards a Relational Ethics. *Philosophy & Technology*, 34(1), 1-20, (2021).
15. Bloodworth, J. *Hired: Six months undercover in low-wage Britain*. Atlantic Books, (2018).
16. Bollen, K. A. *Structural equations with latent variables*. Wiley, (1989).
17. Bostrom, N., & Yudkowsky, E. The ethics of artificial intelligence. *Cambridge Handbook of Artificial Intelligence*, 316-334, (2014).
18. Boudreau, J. W., & Cascio, W. F. Human resource management in the future: AI, technology, and well-being. *Journal of Organizational Effectiveness: People and Performance*, 4(3), 275-284, (2017).
19. Brynjolfsson, E., & McAfee, A. *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. W. W. Norton & Company, (2014).
20. Brynjolfsson, E., & McAfee, A. The business of artificial intelligence. *Harvard Business Review*, 95(1), 61-70, (2017).
21. Buckingham, M. HR data: Bad data. *Harvard Business Review*, 93(5), 118-121, (2015).
22. Buolamwini, J., & Gebru, T. Gender shades: Intersectional accuracy disparities in commercial gender classification. *Proceedings of the 1<sup>st</sup> Conference on Fairness, Accountability and Transparency*, 77-91, (2018).
23. Burawoy, M. *Manufacturing consent: Changes in the labor process under monopoly capitalism*. University of Chicago Press, (1979).
24. Brynjolfsson, E., & Macafee, A. *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. WW Norton & Company, (2014).
25. Caliskan, A., et al. Semantics derived automatically from language corpora contain human-like biases. *Science*, 356(6334), 183-186, (2017).
26. Callen, J. Human resource management in the age of artificial intelligence. *Human Resource Management Journal*, 31(1), 3-18, (2021).
27. Callen, J. L. *The Algorithmic Manager: Work and Power in the Age of Automation*. Oxford University Press, (2021).
28. Charlwood, A. The impact of artificial intelligence on HRM: Evidence from a UK survey. *Human Resource Management Journal*, 31(1), 151-169, (2021).
29. Collings, D. G., Wood, G. T., & Szamosi, L. T. *Human Resource Management: A Critical Approach*. Routledge, (2021).
30. Cowgill, B., et al. Beyond fairness: The ethics of using AI in hiring. *Harvard Business Review*, 98(3), 88-96, (2020).
31. Crawford, K. The Hidden Costs of Automated Thinking. *Harvard Business Review*, 99(1), 96-103, (2021).
32. Crawford, K., Dobbe, R., Dryer, T., Fried, G., Green, B., Kaziunas, E. & West, S. M. (2019). *AI Now Report*, AI Now Institute (2019).
33. Datta, A., Tschantz, M. C., & Datta, A. Automated experiments on ad privacy settings: A tale of opacity, choice, and discrimination. *Proceedings on Privacy Enhancing Technologies*, 2015(1), 92-112, (2015).
34. Datta, A., Tsoulouhas, T., & Datta, A. Discrimination in the era of AI: A survey. *AI & Society*, 30(3), 315-348, (2015).
35. Dattner, B., et al. AI in the workplace: How artificial intelligence is changing the world of work. *International Journal of Human Resource Management*, 30(18), 2597-2612, (2019).
36. Davenport, T. H. *The AI advantage: How to put the artificial intelligence revolution to work*. MIT Press, (2019).
37. De Stefano, V., & Aloisi, A. The European Commission's proposal for an AI regulation: A missed opportunity to protect workers' rights. *Comparative Labor Law & Policy Journal*, 42(2), 241-254, (2021).

38. Duggan, J., et al. Algorithmic management in the gig economy: Challenges and opportunities. *Proceedings of the ACM on Human-Computer Interaction*, 4(CSCW2), 1-25, (2020).
39. Dundon, T., & Rafferty, A. Pluralism and critical management studies: Time for reconsideration? *Human Relations*, 71(4), 459-480, (2018).
40. Dwork, C., Hardt, M., Pitassi, T., Reingold, O., & Zemel, R. Fairness through awareness. In *Proceedings of the 3rd Innovations in Theoretical Computer Science Conference* (pp. 214-226), (2012).
41. Dzieza, J. *The New Boss Is AI-Powered, and Creepy as Hell*. The Verge, (2020).
42. Eubanks, V. *Automating inequality: How high-tech tools profile, police, and punish the poor*. St. Martin's Press, (2018).
43. Floridi, L. AI in society: Mind the gap. *Science*, 363(6429), 1298-1299, (2019).
44. Floridi, L., Cows, J., Beltracchi, M., Chatila, R., Chazerand, P., Dignum, V & Luetge, and C. AI4People—An ethical framework for a good AI society: Opportunities, risks, principles, and recommendations. *Minds and Machines*, 28(4), 689-707, (2018).
45. Gebru, T. The role of AI in exacerbating inequality and undermining democracy. In *The Oxford Handbook of Ethics of AI* (pp. 355-376). Oxford University Press, (2021).
46. Glickson, J., & Woolley, A. W. AI and the future of work: An interdisciplinary review. *Journal of Economic Perspectives*, 34(2), 3-26, (2020).
47. Greasley, A., & Thomas, B. The quantification of HR: Implications for the HR profession. *Human Resource Management Journal*, 30(1), 21-37, (2020).
48. Green, F., Henseke, G., & Li, Y. The changing nature of work: Implications for occupational analysis. *Work, Employment and Society*, 35(1), 3-22, (2021).
49. Guenole, N., & Feinzig, S. *Artificial intelligence at work: How AI is changing the workplace*. Kogan Page, (2019).
50. Guenole, N., & Feinzig, S. (2019). *Artificial Intelligence in HR: A Practical Analysis of Challenges and Opportunities*. Routledge.
51. Holzinger, A., et al. What do we need to build explainable AI systems for the medical domain? arXiv preprint arXiv:1902.10186, (2019).
52. Hutchinson, B., & Mitchell, M. AI and bias: A sociotechnical approach. *AI & Society*, 34(4), 857-873, (2019).
53. Hutchinson, J., & Mitchell, R. Ethical considerations for human resource management arising from the growth of artificial intelligence. *Human Resource Management Journal*, 29(2), 195-212, (2019).
54. Huws, U. *Labor in the global digital economy: The cybertariat comes of age*. Monthly Review Press, (2014).
55. Jacobs, M., & Wallach, H. AI in human resources: Bias, ethics, and the role of HR professionals. *IEEE Intelligent Systems*, 36(6), 14- 31, (2021).
56. Jatobá, A., De Lima, R. M., & De Souza, A. N. Artificial intelligence and human resource management: A systematic literature review. *International Journal of Manpower*, 40(1), 125-150, (2019).
57. Jo, J. H., & Gebru, T. Lessons from archives: Strategies for collecting sociocultural data in machine learning. *Proceedings of the 2019 Conference on Fairness, Accountability, and Transparency*, 306-315, (2019).
58. Jobin, A., Ienca, M., & Vayena, E. The global landscape of AI ethics guidelines. *Nature Machine Intelligence*, 1(9), 389-399, (2019).
59. Kellogg, K. C., Valentine, M. A., & Christin, A. Artificial intelligence in human resources management: Challenges and a path forward. *Journal of Management*, 46(7), 1233- 1265, (2020).
60. Kelly, H. Eightfold AI Raises \$220M to Match Job Seekers with Employers. *Forbes*, (2021).

61. Kleinberg, J., Mullainathan, S., & Raghavan, M. Inherent trade-offs in the fairdetermination of risk scores. *AEA Papers and Proceedings*, 108, 454-459, (2018).
62. Kline, R. B. *Principles and practice of structural equation modeling*. Guilford Publications, (2015).
63. Kochan, T. *AI and the future of work: Human-AI collaboration in the age of digital transformation*. Oxford University Press, (2021).
64. Koltai, K., Kirsch, L. J., & Seli, H. The ethics of AI in human resources: An organizational justice perspective. *Journal of Business Ethics*, 167(4), 589-603, (2020).
65. Koltai, K., Lutz, C., & Sørensen, C. Algorithmic bias and the limits of antidiscrimination law. *California Law Review*, 108(4), 1161-1218, (2020)
66. Lambert, S., & Henly, J. R. Algorithmic scheduling in retail: Employee experiences of precarious work in the US. *Work, Employment and Society*, 33(1), 56-75, (2019).
67. Langer, E. J., & Landers, R. N. The psychology of AI in the workplace: An introduction to the special issue. *Journal of Business and Psychology*, 36(1), 1-8, (2021).
68. Lebovitz, G., Kaufman, A. B., & Pe'er, S. Artificial intelligence in human resource management: A call for theory and application. *Human Resource Management Review*, 100873, (2021).
69. Leslie, D. Artificial intelligence and the future of work. In *The Oxford Handbook of AI Ethics* (pp. 261-272). Oxford University Press, (2019).
70. Lunden, I. Beamery Raises \$138M at an \$800M Valuation for its 'operating system for recruitment'. *TechCrunch*, (2021).
71. Markoff, J. *Machines of loving grace: The quest for common ground between humans and robots*. HarperCollins, (2016).
72. Matsakis, L. The restaurant of the future is full of robots. *Wired*. Retrieved from <https://www.wired.com/story/robot-restaurant-automation>, (2019).
73. Mitchell, M., et al. Model cards for model reporting. *Proceedings of the Conference on Fairness, Accountability, and Transparency*, 220-229, (2018).
74. Mittelstadt, B. D., Allo, P., Taddeo, M., Wachter, S., & Floridi, L. The ethics of algorithms: Mapping the debate. *Big Data & Society*, 6(2), 2053951716679679, (2019).
75. Mittelstadt, B. D., et al. AI ethics need to start with engineering ethics. *Nature*, 568(7751), 577-579, (2019).
76. Möhlmann, M., et al. The platform economy and the future of work: Insights from the crowd working industry. *ILR Review*, 74(2), 245-268, (2021).
77. Moore, P. (2020). HR professionals and artificial intelligence: An exploratory study. *Employee Relations*, 42(1), 5-20, (2020).
78. Moriarty, B. Ethical considerations for AI in HR. *HR People + Strategy*, 41(3), 57-61, (2018).
79. Müller-Schloer, C., Schmeck, H., & Ungerer, T. *Advances in Artificial Intelligence: 42nd German Conference on AI, Kassel, Germany, September 23-26, 2019, Proceedings*. Springer, (2019).
80. Murray, A., et al. The future of HR and AI: A multidisciplinary analysis and research agenda. *Human Resource Management Review*, 31(1), 100742, (2021).
81. Narayan, S. AI snake oil: Artificial intelligence and the limits of transparency. *AI & Society*, 34(4), 857-864, (2019).
82. O'Neil, C. *Weapons of math destruction: How big data increases inequality and threatens democracy*. Broadway Books, (2016).
83. Pyburn, P. K., et al. The diversity-validity dilemma: Strategies for reducing racial and ethnic subgroup differences and adverse impact in selection. *Personnel Psychology*, 61(1), 153-172, (2008).
84. Raisch, S., & Krakowski, S. Augmenting HR: The impact of artificial intelligence on human resource management. *Human Resource Management Review*, 31(1), 100736, (2021).



85. Raisch, S., & Krakowski, S. The Future of HR Work: Towards a Human-Centric Perspective. *Journal of Business Research*, 135, 1-10, (2021).
86. REC Ethical AI in recruitment: A practical guide. Recruitment and Employment Confederation, (2021).
87. Ribeiro, M. T., Singh, S., & Guestrin, C. "Why should I trust you?" Explaining the predictions of any classifier. In *Proceedings of the 22nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (pp. 1135-1144), (2016).
88. Russell, S. J., & Norvig, P. *Artificial intelligence: A modern approach* (4th ed.). Pearson, (2022).
89. Sahni, N. R., Schulz, W. L., & Vercler, C. J. Ethical considerations in the use of artificial intelligence for management and allocation of ICU beds during a pandemic surge. *AMA Journal of Ethics*, 21(8), E668-E674, (2019).
90. Scherer, A. G. Regulating artificial intelligence systems: Risks, challenges, competencies, and strategies. *Harvard Journal of Law & Technology*, 31(2), 489-575, (2017).
91. Schmidt, F. L., & Hunter, J. E. The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings. *Psychological Bulletin*, 124(2), 262-274, (1998).
92. Scholz, T. Platform cooperativism: Challenging the corporate sharing economy. Rosa Luxemburg Stiftung, (2020).
93. Schulte, B. *The gig economy: A short introduction*. Polity, (2020).
94. Singh, S. Eightfold AI Valued at \$2.1 Billion After Tiger Global Investment. Bloomberg, (2021).
95. Smith, A., & Lewis, R. *Paradoxes of Modernization: Unintended Consequences of Public Policy Reform*. Oxford University Press, (2011).
96. Smith, G., & Lewis, S. Paradoxes of AI. *AI & Society*, 26(3), 213-221, (2011).
97. Smith, M. Artificial intelligence in human resources management: Challenges and opportunities. *Journal of Organizational Psychology*, 19(1), 45-52, (2019).
98. Strohmeier, S., & Piazza, F. Human resource management and the use of artificial intelligence. *Management Revue*, 24(3), 221-237, (2013).
99. Sundararajan, M., & Najmi, A. The many Shapley values for model explanation. *Ar Xiv preprint arXiv: 2001.07454*, (2020).
100. Suganya, V., & Suresh, N. V. (2024). Potential Mental and Physical Health Impacts of Spending Extended Periods in the Metaverse: An Analysis. In *Creator's Economy in Metaverse Platforms: Empowering Stakeholders Through Omnichannel Approach* (pp. 225-232). IGI Global.
101. Suresh, N. V., & Remy, V. A. M. (2024, February). An Empirical Study on Empowering Women through Self Help Groups. In *3rd International Conference on Reinventing Business Practices, Start-ups and Sustainability (ICRBSS 2023)* (pp. 957-964). Atlantis Press.
102. Susskind, R., & Susskind, D. *The Future of the Professions: How Technology Will Transform the Work of Human Experts*. Oxford University Press, (2015).
103. Tambe, P., et al. AI in human resources management: Challenges and a path forward. *Proceedings of the AAAI/ACM Conference on AI, Ethics, and Society*, 301-307, (2019).
104. Ton, Z. *The good jobs strategy: How the smartest companies invest in employees to lower costs and boost profits*. New Harvest, (2012).
105. Van den Broek, A., et al. Ethical considerations in the use of artificial intelligence in human resource management. *Journal of Business Ethics*, 169(1), 1-19, (2021).
106. Van den Broek, T., et al. Ethnography in the development of an AI tool for hiring graduate recruits. *Big Data & Society*, 8(1), 2053951720986554, (2021).
107. Veale, M., & Borgesius, F. Regulating the use of AI in employment: Legal and ethical considerations. In *The Oxford Handbook of Ethics of AI* (pp. 377-398). Oxford University Press, (2021).

109. Veale, M., van den Hoven, J., & Binns, R. When data protection by design and data subject rights clash. *International Data Privacy Law*, 8(2), 105-123, (2018).
110. Whittaker, M. AI and inequality: A critical appraisal. *Science, Technology, & Human Values*, 01622439211013907, (2021).
111. Whittaker, M. AI Ethics Need to Move Beyond Western Paradigms. *Nature*, 594(7863), 186-187, (2021).
112. Whittaker, M. How to regulate artificial intelligence. In *The Oxford Handbook of Ethics of AI* (pp. 399-420). Oxford University Press, (2021).
113. Williams, C., Warhurst, C., & Thompson, P. *The future of work: Prospects for the UK labour market*. Oxford University Press, (2020).
114. Wood, A. J., & Graham, M. *The gig economy: A critical introduction*. John Wiley & Sons, (2021).
115. Zuboff, S. *The age of surveillance capitalism: The fight for a human future at the new frontier of power*. Public Affairs Author, (2019).

**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

