

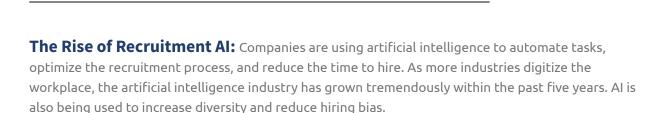
White Paper

Human Led, Al Assisted: Uniting Artificial and Human Intelligence to Combat Bias in Hiring

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As employers face a multi-year "Great Resignation," they have been tasked with identifying effective ways to source talent and increase the efficiency of the hiring process. Artificial intelligence (AI) recruitment tools hold great potential and can significantly benefit recruiters, but leaning too heavily on machine-learning alone can produce biased hiring decisions. In addition to leveraging the power of AI-based tools, Enspira advises companies to apply a humanistic, critical lens throughout each step of the recruitment process.



Checks and Balances: Using Al to Mitigate Bias: Humans are biologically ordained to hold some level of unconscious bias. During the recruitment process, employers must be aware of the ways bias affects decisions. Enspira proposes following a 5-step hiring process and offers guidance on Al tools that encourage diversity, equity, inclusion, and belonging.

Uncovering the Code and Potential for Bias: Understanding the potential for bias within AI recruitment software is key to effective utilization. As workplace decisions are increasingly made by algorithms, being aware of the potential for bias within the code is key to effective utilization of AI hiring tools.

The Future of AI Recruitment: Legislation is expected to be passed by 2023 that will regulate companies using artificial intelligence hiring software. These new regulations will hold significant implications for companies. As such, employers can prepare by establishing best practices within their organizations regarding AI, and its utilization within the hiring process.

Recommendations:

Utilizing Enspira's five-step guide for recruitment offers a framework for leveraging hiring professionals and artificial intelligence to reduce bias and improve diversity hiring. These steps include 1) reviewing the job description; 2) assembling a DEIB (which stands for Diversity, Equity, Inclusion, and Belonging)-trained hiring team; 3) casting a wide net; 4) assembling diverse candidate slates; 5) standardizing the interview process.



The Rise of Recruitment Al

AI is a constellation of technologies that work together to enable a machine to make sense, comprehend, and learn with human-like intelligence. Machine learning, a branch of AI, focuses on the use of data and algorithms to imitate human intelligence. Machine-learning AI is highly sophisticated and trained to recognize data sets and perform tasks based on data.¹

Artificial intelligence is no longer confined to the technophile. AI has moved beyond the innovators and early adopters, becoming realized amongst all people along the technology-adoption spectrum.

For the past five years, the artificial intelligence industry has seen an average growth of 20% each year.² From transportation, education, finance, and everything in between, there has been a tremendous increase in the use of artificial intelligence across all industries. As this technology becomes increasingly accessible, more companies are utilizing AI in some form.

Source: RP-GL-EN-DF-114916-000-2021-2022-Executive-Survey-EX-DaT7CEuFHN.pdf (ceridian.com)

A recent study analyzed the challenges, opportunities, and technology investments of organizations as they navigated the COVID-19 pandemic.³ Findings revealed that 42% of employers felt that pandemic boosted their digital transformation efforts, and 79% agreed that their organization's digital maturity had increased. This boost in technology use has prompted more companies to introduce artificial intelligence within their day-to-day operations.

Reported change in digital maturity post-pandemic:

Somewhat increased	46%
Significantly increased	33%
No change	15%
Somewhat decreased	5%
Significantly decreased	1%



According to the 2020 McKinsey Global Survey, organizations across all industries are using AI as a tool to generate value.4 Within talent recruitment, AI is being used to streamline the hiring process, find the best candidates, and increase diversity. In a 2021-2022 Executive Survey conducted by Ceridian, results revealed that 53% of executives will increase the size of their teams within the next 12 months. As employers begin to increase their efforts to respond to rising workforce demand, 46% of executives said that they plan on using AI tools for recruitment and talent management.5

Artificial intelligence software offers an effective and efficient way to find new talent. Applicant tracking systems provide a degree of automation that allows recruiters to spend less time parsing through online applications, and more time interacting with prospective candidates to find the best fit. Amber Grewal, Vice President of Global Talent Acquisition at IBM says, "...incorporating AI into the recruiting and sourcing functions augments our recruiters' ability to make better decisions that drives more business value." 6 Utilizing artificial intelligence hiring software can reduce the time to hire, while increasing the quality of hire.

46% of executives said that they plan on using AI tools

There are several features within these AI-based tools that can be used to improve the hiring process. The technology is generally used to source, screen, and interview candidates. Despite the value that artificial intelligence brings to recruitment, it is crucial that companies understand the risks of relying on technology alone. Much like human intelligence, artificial intelligence comes with its own set of inherent

biases. Companies must be held accountable for how AI is being utilized within their hiring practices and

ensure a humanistic, critical lens is applied throughout each step of the recruitment process.



Uncovering the Code

Artificial intelligence brings both opportunity and risk to the hiring process. AI can make it easier to comb through large amounts of resumes and find talented employees that might otherwise be hidden. Commercial providers like IBM, Microsoft, and Google offer algorithmic platforms to facilitate talent sourcing and performance measuring. This has prompted several large companies including Intel, Unilever, and Ikea to incorporate algorithmic decision-making within their recruitment and human resources development processes.⁷

Private and public sectors are turning to AI systems and machine learning algorithms to automate complex decision-making processes. As such, a deeper understanding of the technology is necessary to mitigate the potential for bias that lies within algorithmic codes.

Algorithms Explained

Artificial intelligence algorithms are mathematical instructions that are used within technology to make decisions. Using a series of instructions, algorithms help programs make calculations, process data, and provide automated reasoning. Machine learning algorithms are used within hiring software to shape the candidate pool, assemble candidate slates, and assess talent. Algorithms are coded to continuously improve upon themselves and use input data, called training data, to refine the output.

There are two main types of algorithms used within AI recruitment software: supervised algorithms and unsupervised algorithms.

Supervised Algorithms.

Applicant tracking systems use supervised algorithms to filter applications and extract information from a candidate's resume based on predefined criteria (e.g. skills, years of experience, schools attended). The algorithm then categorizes data into sections within a searchable database. These types of algorithms aim to make predictions based on input data and desired output. The program replicates recruiter decisions by learning patterns from labeled data and developing rules that can be applied to similar instances in the future.8 It can be compared to learning in the presence of a supervisor or a teacher. "...indeed, a growing literature has shown that supervised learning algorithms can more effectively identify high quality job candidates than human recruiters. Yet because this approach implicitly assumes that past examples extend to future applicants, firms that rely on supervised learning will tend to select from groups with proven track records rather than taking risks on non-traditional applicants, raising concerns about algorithmic fairness."9

Unsupervised Algorithms.

In contrast to supervised algorithms, unsupervised algorithms do not receive output data from the code-developer. Instead, only input data is given, and the model learns patterns from the data without labeling from the human code-maker. The machine can identify structural behaviors within the variables and categorizes them into groups and themes.¹⁰ To generate recommendations, the algorithm draws from different information sources that are based on the user's descriptions, prior choices, and behavior of similar users. 11 Let's look at a simple example of unsupervised learning for a baby and her family dog. A baby gets comfortable with her own dog from consistent exposure and play. Perhaps she sees a neighbor's dog on a walk one day. Baby has not seen this dog before. But it recognizes many features (2 ears, eyes, walking on 4 legs) like her pet dog. She identifies the new animal as a dog. This is unsupervised learning, where you are not taught but you learn from the data. If this was supervised learning, the baby's mother would have informed her it was a dog.

Potential for Bias

Charlotte Burrows, chair of the U.S. Equal Employment Opportunity Commission (EEOC) warns, "Artificial intelligence and algorithmic decision-making tools have great potential to improve our lives, including the area of employment... We must work to ensure that these new technologies do not become a high-tech pathway to discrimination." Despite being touted as a streamlined approach to finding the best candidates and eliminating bias, the reality is that AI systems are only as unbiased as the data used to develop the algorithm.¹²

This was the case for machine-learning specialists at Amazon who scrapped an AI recruiting tool that was in development when they discovered it was biased against women. The algorithm was trained to rate applicants by observing patterns found within their resume. Due to the tech industry being largely dominated by men, the training data contained mostly male resumes. This caused the algorithm to penalize resumes that included the word "women's" and even downgrade graduates of certain all-women schools.

In January of 2021, the AI talent acquisition platform HireVue announced they would no longer offer the facial analysis component within its screening assessment tools. This came after questions surfaced regarding the ethics of making hiring decisions based on facial expressions detected by a computer. HireVue's video interview feature used algorithms to assign traits and qualities to the candidate's facial expressions during video interviews, which would then factor into a candidate's overall score. Merve Hickok, a lecturer on AI ethics and founder of Lighthouse Career Consulting explains that accuracy in regard to categorizing expressions is highly problematic and cannot not be used to infer traits. "Facial expressions are not universal - they can change due to culture, context, and disability -- and they can also be gamed."14



Checks and Balances: Using AI to mitigate Bias

Unconscious bias is deeply ingrained within the human psyche and arises when a person unknowingly has a positive or negative disposition towards an individual or group. Bias can present itself at the very early stages of the recruitment process. A study analyzing the impact that gender has on hiring found that resumes with male names were 30% more likely to be considered "worthy of hire" than resumes with female names. When looking at how bias hiring practices affect people of color, a research study found that 25% of Black candidates who used "white-sounding" names on their resume received a call back compared to 10% of applicants who had indicators of their ethnicity within their name.¹⁵

Hiring practices that allow for bias to seep through has the potential to permeate multiple facets of an organization. Companies can improve their workplace culture through implementing intentional hiring practices that mitigate bias and increase diversity. Enspira proposes a five-step recruitment process that utilizes AI as a supplemental tool to reduce bias and improve diversity hiring.

Step 1: Review Job Description

The job description is a critical component to the hiring process. This is a prospective employee's first impression of the company and plays a role in creating an inclusive work environment. Research shows that biased language patterns can impact how job seekers react to job listings, ultimately leading to decreased diversity within the workplace.¹⁶

Before writing the job description, establish the core competencies for the desired role. When crafting the listing, these competencies should be the focus. In addition, to alleviate barriers that may discourage prospective candidates from applying, it is best practice to only list the essential requirements for the role.

There are several artificial intelligence programs that can assist recruiters in creating bias-free job descriptions. Programs like Textio, ¹⁷ Jobvite, ¹⁸ and Ongig ¹⁹ scan job descriptions to remove language that might contain bias. For example, some job descriptions include 'affinity' language relative to educational requirements. Affinity bias is when we have the tendency to gravitate towards someone who reminds us of ourselves. A commonly seen

instance of affinity bias in job descriptions is the "Top School" requirement or companies that require candidates to have a degree from an "Ivy League University" or "top engineering school". Instead of asking candidates to have a degree from an elite university, requiring a degree in a specific field is much more inclusive.

Gal Almog, CEO and Founder of AI recruitment platform Talenya told Enspira, "The recruitment industry is ripe for disruption. AI platforms can help put diverse candidates on equal footing." He explained how Talenya goes beyond scanning job descriptions, helping employers analyze job requirements within a listing to increase diverse talent participation in the hiring pipeline.



Step 2: Assemble DEIB-Trained Hiring Team

Assembling a team that is ready to approach diversity, equity, inclusion, and belonging (DEIB) initiatives and hiring practices with an open mind is a critical component to successful talent acquisition. Shelton Duvall, Talent Acquisition and Diversity & Inclusion leader at Siemens Healthineers, talked to Enspira about the importance of establishing the right mindset within the company to create an inclusive culture. "The data is important, but so is the narrative and the mindset," he said. "We need a cognitive balance of both to create the best culture."

Enspira offers training sessions for organizations who want to mitigate bias within the recruiting process. In the session, individuals learn how to identify unconscious bias and actively work against it through each step of the hiring process. Leesa Hill, Senior Director of DEIB at Enspira explains that DEIB should be woven into every aspect of an organization, including the hiring process. She says, "We have to quit treating DEIB as a separate piece of the puzzle, it must be built into all HR systems

- processes, programs & policies. If we ever hope to move the needle, bias must be attacked at the root. In the recruiting process, using AI is one small way of getting to that root, but machine-learning can't solve it alone."

A focus on DEIB does not end with training. Companies must embed their DEIB practices into each step of the hiring process, including the use of AI tools themselves. Once recruiting teams become more aware, they can act as advocates for diversity hiring and promote accountability across the organization.

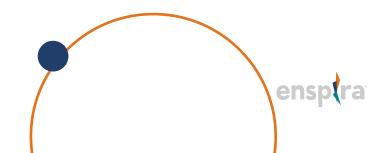
Al platforms like Diversio can help employers with DEIB initiatives. The tool integrates with a company's communication platform and flags cultural insensitivity and unconscious bias.

Additionally, there is a social media barometer that tracks the company's mentions to measure their public perception. After this analysis, the software identifies programs and policies from a catalog of more than 1,000 validated solutions to improve diversity and inclusion efforts.²⁰

Step 3: Cast a Wide Net

To assemble a diverse slate of candidates, casting a wide net is an important step. In this digital age, companies can no longer use the lack of diverse applicants as a reason for their lack of diverse hiring. Employers can expand their reach through utilizing targeted ads and job boards. These AI powered technologies show job seekers geo-targeted openings that are aligned to their skills, profession, and career goals.21 The Head of Talent Acquisition for a global biotech company told Enspira that using Al-powered geo-tagging has helped their company seek out applicants outside their usual scope. In doing so, they have increased the diversity within the organization. "Through opening up hiring, we were able to tap into different talent communities and cast a much wider net," he said.

Eightfold's talent acquisition software makes it easy for employers to cast a wide net and increase diversity. The algorithm uses billions of data points pulled from multiple sources including career pages, resume databases, job census, and company data. Andrea Shia, Head of Talent Strategy and Transformation at Eightfold explained that the software has the capability to break down an applicant's resume into skills and match them with the skills needed by employers. Additionally, it identifies adjacent skills of each applicant and fills the talent pool with candidates that may have otherwise been overlooked. In a tight talent market, tapping into passive or overlooked talent is a gamechanger.



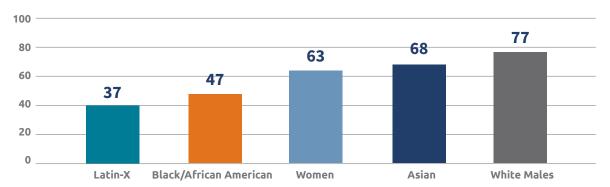
Step 4: Assemble Diverse Candidate Slates

A study investigating hiring discrimination in US labor markets found that White applicants received 3% more job callbacks than applicants of color.²² This can partly be attributed to the types of platforms employers are using to source talent. Platforms like LinkedIn and Indeed encourage job seekers to list their skills and attributes so recruiters can find them using keyword search. Research from Talenya shows how this can create an uneven playing field. They found that diverse candidates post 10-17% fewer skills on these job sites and write significantly less about themselves. As such, applicants of color rank lower on search engines, and are often overlooked.²³

To mitigate this, companies can use AI talent sourcing platforms like Plum, Eightfold, and Pymetrics which utilize games and assessments to measure potential. Through identifying soft

skills, which are innate tendencies and behaviors that measure potential, AI assessments can help employers make unbiased hiring decisions. CEO and Co-Founder of Plum, Caitlin MacGregor said that unlike other talent management platforms that use historical data, Plum uses proven science stemming from decades of industrial and organizational psychology research to identify high-potential talent. "Our data at Plum is based on human potential, transferable soft skills, and putting people in roles where they will thrive. Studies show this type of data is 4x more predictive of future performance," said Caitlin. Utilizing Plum's talent assessment to screen in candidates, Scotiabank has effectively eliminated the use of resumes and revolutionized how they attract, hire, and retain talent. This has resulted in expanding their talent pool to include more diverse candidates and has raised the hiring of visible minorities to 60%.

Diverse Profiles Include Less Skills, Making Them Harder to Find



Step 5: Standardize the Interview Process

Interviews often lack the structure necessary to assess candidates effectively. Enspira recommends creating a standardized interview process to help employers avoid biased hiring decisions. Lizzie Pollock, Director of Human Capital at Enspira explains, "Structuring interviews with a standardized set of questions, based on a consistent set of competencies and criteria, encourages impartial assessment of candidates and prevents bias-informed perceptions from impacting hiring decisions." To standardize the interview process, employers can utilize a scoring system to assess the job candidate's education, experience, and work style.

A standardized interview process yields consistent interview experiences for candidates, better communication within hiring teams, and reduced bias overall. All powered technology can improve the interview scoring process and help hiring teams focus less on taking notes and more on engaging with candidates. Clovers is an intelligent interviewing platform that integrates with video technologies like Zoom and Microsoft Teams.²⁴ The software helps recruiters make informed decisions and saves employers from relying solely on memory or notes. Hiring teams can use the transcriptions to collaborate and evaluate candidates fairly and effectively.

The Future of AI Recruitment

"The Great Resignation," predicted to be a multi-year process, will continue in 2022.²⁵
As companies increasingly lean on artificial intelligence to fill the influx of job openings, it is even more important to implement a diversity lens into the process. Renee Rosenkranz, human capital consultant at Enspira says, "With big data, comes big liability."

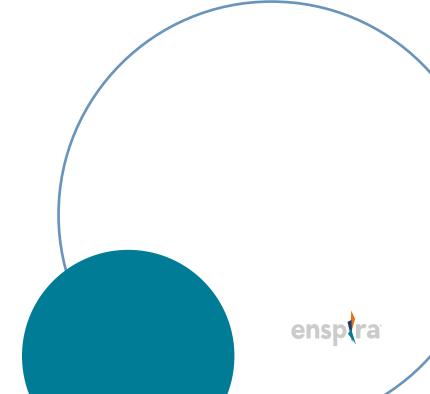
With big data, comes big liability.

Although AI in recruitment is not regulated on a federal level yet, some states have enacted or proposed legislation to regulate AI in employment.

In 2020, Illinois became the first state to regulate the use of AI through the Artificial Intelligence Video Interview Act. This regulation stipulates that companies using AI software must notify applicants that AI is analyzing the video and provide them with information about how the intelligence system works. In November 2021, the Equal Employment Opportunity Commission announced a new initiative that will examine the issue of AI, people analytics, and big data in employment decisions. Through the initiative, the EEOC plans on launching a series of listening sessions with stakeholders about algorithmic tools and their employment ramifications. Additionally, they are planning on issuing technical assistance to provide guidance on algorithmic fairness.

Recently in New York, the City Council voted to pass a bill that would require annual bias audits for hiring vendors utilizing AI-powered recruitment tools. If passed, companies using artificial intelligence resources will be responsible for letting job applicants know how AI tools were used within the hiring process. Additionally, companies would have to allow candidates options for an alternative approach like having a human process their application instead of an algorithm. If bias is found within recruitment tools, the state will impose fines on vendors and employees up to \$1,500 per violation. If the bill is passed, this law would take effect in January 2023. 27

Being proactive and taking steps now to mitigate bias from AI hiring tools will help employers get ahead of future legislation, as this issue is sure to gain steam across the nation with more companies digitizing workplace procedures. As organizations move towards digitizing the workplace, ethical questions regarding artificial intelligence will result in continued legislation.



Recommendations

As companies work to recover from the workplace effects of COVID-19 and the "Great Resignation," new technologies that utilize artificial intelligence can help streamline the hiring process and reduce costs. Additionally, there is much potential for AI to promote and support diversity and inclusion initiatives. Despite the advantages of AI, understanding that artificial intelligence is merely a tool that should not be used on its own, is key to ethical use. AI technology must be paired with a humanistic lens.

Due to the complex nature of algorithmic codes, many hiring professionals are unaware of the systematized biases that can present itself within machine-learning algorithms. Algorithms are only as unbiased as the humans who create them. As such, hiring professionals have a responsibility to diligently ensure their use of artificial intelligence is not introducing bias into the hiring process

Utilizing Enspira's five-step guide for recruitment offers a framework for leveraging hiring professionals and artificial intelligence to reduce bias and improve diversity hiring. In addition to following the steps to recruitment, Enspira offers the following suggestions to companies who are currently using, or considering, AI-based recruitment tools.

1. Understand the Technology.

Al powered recruitment tools hold great potential; however, there are downsides. Employers who understand how unconscious bias can present itself within algorithmic codes will be fully equipped to embrace AI technology and utilize it to produce positive hiring outcomes.

2. Focus on Diversity and Inclusion.

Diverse teams have been proven to produce successful business outcomes.²⁸ Employers can be intentional in their diversity and inclusion efforts through leveraging AI recruitment tools to assist in finding and hiring diverse candidates.

3. Be Proactive.

Laws and regulations surrounding artificial intelligence are expected to be passed by 2023.²⁹ Companies working proactively to establish policies and best practices in regards to AI technology will be ready for future regulations. It will be prudent to follow the laws and plan for platform audits, should they be sanctioned in the not so distant future.

In Conclusion

The use of artificial intelligence for talent acquisition presents promise, as well as risk. Employers utilizing AI technology to source and hire talent should take the necessary steps to ensure it is being used ethically. As such, it is important that companies understand how AI tools work and be equipped to identify potential areas of bias. Through uniting artificial and human intelligence, companies can work towards creating an equitable and bias-free hiring process.



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How we conducted this research:

"Human Led, AI Assisted" is a research collaboration between Enspira and Northwestern University's Kellogg School of Management. It is a response to the emergence of AI as a key tool companies are using to enhance their recruiting efforts and the recent legal scrutiny around bias in data. The report is based on hours of primary interviews with HR leaders representing Fortune 500 and start-up companies and extensive analysis of technology trends over the last year.

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