

The impact of artificial intelligence within the recruitment industry: Defining a new way of recruiting

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Abstract

This paper set out to consider artificial intelligence (AI) and the impact its growing influence is having within the recruitment industry. This research considered how AI is influencing employers and candidates, specifically throughout the initial stages of the recruitment process. With limited academic research conducted to date, AI has been accepted, by practising recruitment specialists, as being “game-changing for HR” (May, 2016, p.6). The overarching aim of this research was to make recommendations on how recruitment processes could be changed, for the better, in recognition of the introduction of AI technology.

Technology has always held an influence within the recruitment scene, reducing costs and delivering increased effectiveness in recruiting candidates (Okolie, 2017, Singh, 2003). However, the US Department of Labor suggested recruitment, as it stands, is only 16% effective (ClearFit, n.d.). If this is the case, the introduction of AI provides the opportunity to achieve significant improvements. According to Bullhorn (2018), these early improvements are likely to effect the sourcing and screening of candidates, the initial stages of the recruitment process.

Due to the lack of academic literature regarding AI's influence on the recruitment industry, an integrative literature review was conducted to develop new perspectives on the topic (Saunders *et al.*, 2016). As a result both scholarly literature and professional sources were used. To develop a structured analysis of these sources, thematic analysis was used (Braun *et al.*, 2006). These themes were taken from arguments made in the literature surrounding the impact and influence that AI could have in recruitment. The themes of ‘risks and limitations’, ‘bias and inclusion’ and ‘technicalities and opportunities’ guided a framework for primary research to be conducted.

In order to assess the potential impact that AI may have on recruitment processes, three forms of research were undertaken. Semi structured interviews were conducted with nine experts in varying fields surrounding recruitment and AI. An online survey with 132 respondents provided insight into a candidates pre-existing perceptions of recruitment processes. Finally, an observation of a round-table event was conducted in order to analyse the key themes, thoughts and concerns of experts that exist currently within the field of AI in HR.

This paper concludes with the suggestion of a newly formed recruitment process. This process integrates significant structural and technological change in recruitment but enables HR teams to maximise the efficiency and effectiveness of their talent acquisition. As a result, the

standardised process of recruiting for roles will need to be flipped, from trial and error, to a 'test for success' model.

Keywords

Artificial Intelligence, Recruitment, Human Resources, Technology, Employers, Candidates

Introduction

This paper looks at Artificial Intelligence and the growing influence it is set to play in the recruitment industry. Specifically considering how the introduction of Artificial Intelligence will influence employers and candidates for roles throughout the recruitment process. This considers the initial job posting through to candidate search and finally interviewing and evaluation of candidates. The purpose of this is to establish the recommended approach for recruiters, both in-house and consultancies, to make hires following the inevitable changes in the industry that will be seen. To answer this question, interviews have been conducted with experts in the industry, contrasting these with the opinions of employees and job seekers and finally analysing the trends of an observation. These primary research findings have been contrasted with the existing literature on the topic. As a result this paper concludes that there is a new recommended process of recruitment to be followed. This process will require significant structural and technological change in recruitment processes but will enable teams to maximise the efficiency and effectiveness of their talent acquisition strategies. As a result the standardised process of recruiting for roles will be flipped, from a trial and error process, to a test for success model.

The Problem & Opportunity

The recruitment industry has a significant issue, the traditional hiring process where a CV and interviews are used have been found to be ineffective. A study by the US Department of Labor and Gallup suggested this process is only 16% effective in finding the right candidate for a role (ClearFit, n.d.). To counter this concern, a large number of companies have incorporated pre-employment assessments which ask candidates a set list of questions. These are reliable (consistent, even when repeated) and valid (relevant to job performance) however they are incredibly time consuming for applicants and result in lower completion rates due to the effort of completing them (HireVue, 2018). As a result companies are losing out on some of the top talent in the market. This explains why Talent Acquisition has been highlighted as the third most important challenge companies face with 81% of the 10,000+ respondents suggesting it was 'important' or 'very important' (Schwartz *et al*, 2017). The same report by Schwartz *et al* (2017) suggests that recruitment stands at the early stages of a technology based revolution. This is backed up by LinkedIn's research on the Global Recruitment Trends (2017) which suggests the largest challenge for recruiters is the 'competition for talent' (57%).

Technology has continuously enabled recruiters to process more candidates and deliver a higher quality, more cost effective service to both job seekers and employers alike (Okolie, 2017 & Singh, 2003) and AI is expected to be no different (Tandon, 2017 & Raviprolu, 2017). The acknowledgement that AI is "game-changing for HR" (May, 2016, p.6) suggests it could have both positive and negative implications. The last shift in the recruitment industry was the development of the world wide web and opened up the ability of global e-recruitment strategies increasing applications for roles universally (Okolie *et al*, 2017). Companies began accessing a wide range of data points from more personal sources such as social media which was not always well received by candidates who wanted to keep their work and personal life separate (Quast, 2012).

The concept of AI has been present for decades however only more recently the concept has become a reality. The likes of IBM's Watson have previously shown the public the potential of AI and its cognitive capabilities rivalling that of a humans (IBM, 2016). Technologies surrounding AI have now reached the phase of high-speed development, impacting numerous industries with the ability to support and potentially replace a number of both manual and cognitive focused roles (Campolo *et al*, 2017). They enable firms to remove the tasks that are repetitive, tedious and prone to error due to ambiguity (Singh, 2017). None of this would be possible without data, between 2013 and 2015 more data was produced than the rest of human race combined (Marr, 2015).

AI has many sub-categories, Machine Learning (ML) being one, this process takes sets of information and draws conclusions from patterns of previous behaviour. More recently ML has been superseded by Deep Learning which offers untrained insight therefore spotting patterns without necessarily receiving guidance from a human programmer (LeCun *et al*, 2015). This provides the opportunity to discover new and exciting options and methods in a wide variety of tasks and decision making processes. This explains why Matt Fischer, CTO at Bullhorn suggests a number of repetitive, and now more notably, non-repetitive tasks within the recruitment industry such as sourcing and screening candidates are predicted to be automated in the next few years (Bullhorn, 2018).

A survey conducted by the HRP (2016) found that 84% of HR firms thought AI was a useful tool within recruitment, the same report also concluded that HR firms are either 'not very prepared' (33%) or 'not prepared at all' (35%) for AI within their operations. This is a noteworthy concern for recruitment companies looking to invest in this technology, as it is not only a large

investment financially, but it may have major negative consequences aligned to its implementation.

Literature Review

Introduction

At the time of writing, academic literature on the specific influence AI will have on the recruitment industry is very limited. This review will be integrative in order to develop new perspectives on the topic (Saunders *et al*, 2016). To widen the array of literature, both scholarly literature and professional sources have been used. This is firstly because AI is a topic that is incredibly fast moving and as a result caused scholarly literature to fall behind. Secondly the area of HR is rarely covered by academics and thus better suited to professional reports.

To develop a qualitative analysis of these sources thematic analysis was used. These themes were taken from arguments made in the literature surrounding and the impact the influence that AI could have in Recruitment, specifically on candidates and employers.

These are:

- Risks and Limitations
- Bias and Inclusion
- Technicalities and Opportunities

Risks and Limitations

Raviprolu (2017) directly considers the role of AI within Human Resources (HR) and acknowledges that there are a number of barriers to adoption at this stage, firstly AI requires a large amount of data that is also accurate, these data sets are very complex to effectively understand the psychology of candidates. Yano (2017) highlights AI is nothing more than an empty box unless data is applied. Campolo *et al* (2017) argued that with increasingly protected data sets there are risks of companies using cheaper, non-representative, and therefore less valid, data sets to train AI programmes. Bafaro *et al* (2017) also explains that a ML program might need to review years of succession data to actually understand success factors, and this is assuming that data is accurate. Wishkirchen *et al* (2017), whilst being a supporter of AI within the recruitment process does concede that even the most sophisticated AI technologies can make mistakes. GDPR is another data challenge that needs to be considered and with an estimated 80% of recruitment companies not being complicit with the rules, it will heavily impact the industry (Chaker, 2018). IBM (2016) have however commented that the benefits of AI outweigh the risks largely highlighted above. Raviprolu (2017) also suggests the capability of AI has not yet reached strong communication abilities. Tandon *et al* (2017) agrees with this concluding that AI's influence will not result in full automation of the process.

Okolie *et al* (2017) considered E-Recruitment, the last technological shift in the recruitment industry. The paper notes that E-Recruitment had negative aspects such as impersonalising the process on both sides, in the initial stages it also discriminated against those who did not have access to internet.

Schwartz *et al* (2017) considered the important factors within Human Capital Management (HCM) and found 'Robotics, Cognitive Computing and AI' at the bottom of the pile (40%) with Talent Acquisition third highest (81%). The disconnect between recruitment and new technologies is because AI is still in the early stages of development within the HR industry, and the workplace is now attempting to catch up with the technology available (Francis *et al*, 2017).

There has been the suggestion that AI could feasibly replicate the human decision making process (Frey *et al*, 2013) however Parnas (2017) points out a program imitating humans is not the best way for these technologies to operate as this may result programs that are untrustworthy and dangerous.

Bias and Inclusion

Campolo *et al* (2017) conducts a critical approach to analysis of AI's impact socially as well as economically and explains ML programmes are using existing data points to make decisions could result in transferring and entrenching cultural and gender based discrimination. In contrast to this Wishkirchen *et al* (2017) suggests the use of AI within recruitment will remove all bias by focusing purely on facts rather than emotions and sympathies. Approximately 70% of HR and recruitment departments suggest technology is improving their hiring decisions (Randstad, 2018). New hiring tools such as video analysis systems enable decisions based on fact rather than opinion to help further diversity and inclusion by eliminating unconscious human biases (Poitevin *et al*, 2017 & PwC, 2017). Bafaro *et al* (2017) explains that data analytics tools are the key to enable better decision making and predictions about candidates.

Florentine (2016) used an example of how discrimination could occur using an AI Algorithm. If an AI, machine learning algorithm found that Quarterbacks in American Football had a statistical relationship with high performance in sales roles based on data relating to mental skills, decision making and leadership it can generate the unintended consequence of eliminating all females from the process because they cannot be in an American Football team. The source suggests smaller nuances may not be spotted by humans.

Technicalities and Opportunities

King *et al* (2017) delivers insight into the potential economic impact and the prominent capabilities of AI technologies. King *et al* (2017) considers the impact of Deep Learning, citing object recognition, natural language processing (NLP) and machine vision as key technologies. Not only are machines able to process data sets faster but they can spot patterns in large data sets that cannot be connected by humans. LeCun *et al* (2015) reaffirms the value of NLP in particular as a core aspect of Deep Learning. Deep Learning consumes data in the environment that programmers expose it to and with big data readily available the process, it is accelerating at a faster rate than ever before. Frey *et al* (2013) highlights the advancements in 'Affective Computing' theories, which incorporate human level social intelligence into the technology. This enables real-time social tasks such as negotiation, persuasion and care, explaining why over 85% of respondents to a recent survey considering AI within recruitment believe that assessment centres, interview scheduling, sourcing candidates and lastly on-boarding new employees could all be automated (Pröhm *et al*, 2017). This is leading to recruitment firms and leadership radically changing their processes to accommodate for the acceleration in the capabilities of AI (Chitkara *et al*, 2017 & CognitionX, 2017) to ultimately benefit from the competitive advantage seen from the first movers (Rao *et al*, 2017).

Frey *et al* (2013) also states AI is "spreading to domains commonly defined as non-routine" (Frey *et al*, 2013, p. 17). The paper also highlights two key categories of work, firstly the differentiation of cognitive and manual tasks, secondly the differentiation between routine and non-routine roles. Big data is now enabling programmes to reach non-routine, cognitive tasks. As a result Raviprolo (2017) predicts that AI will save recruitment firms time and money by delivering more accurate analysis of candidates and company requirements through these new analysis methods.

Okolie *et al* (2017) stated employers had benefits including lower costs, more applicants and better candidate matching with candidates having an easier application process, with a wide variety of job opportunities and finally a greater response rate from the employer to receive feedback. Poor hiring decisions are estimated to cost \$1.6 million for every 1000 hires made (Randstad, 2018). Bullhorn (2018) suggest efficiency is one of two reasons for increasing automated processes in recruitment. The second motivation is improving engagement with candidates, they argue the main route to do this is through chatbot technologies. Depending on the recruiter and their responsibilities, it is estimated they spend between 33% (de Lara *et al*, 2018) to 60% (CognitionX, 2017) of their working day sourcing and screening candidates. This burden is set to be removed by AI (HRPA, 2017), as a result the cost of hiring candidates could be reduced by up to 71% and improve recruiters efficiency by up to three times (CognitionX, 2017). Faliagka *et al* (2012) directly agrees, adding that AI will reduce the time required to fill vacancies as well as aiding the recruiter in ranking candidate suitability. Improving the candidate experience is something a recruiter is tasked with but the current level of administrative tasks in the industry stops them from doing this, AI is argued as the solution (May, 2016).

Conceptual Framework

As the structure to the literature review suggests, there are three key themes that have emerged best categorised as Risks and Limitations, Bias and Inclusion and finally Technicalities and Opportunities. Bias and Inclusion as a topic, could potentially fit into either Risks and Limitations or Technicalities and Opportunities. However this area in particular is a very contested area of literature, with an even balance of both positive and negative opinions hence it has been separated into another topic.

The technicalities of Artificial Intelligence appears to be well documented through AI focused academic literature. As a result any primary research will have little consideration on how the technology works and rather focus on application, opportunity and value to the recruitment process. The remaining categories will therefore be main areas of consideration in this research due to widespread disagreement of both academic and professional sources in these themes:

- Theme 1: Risk and Limitations
- Theme 2: Bias and Inclusion
- Theme 3: Opportunity

It is clear that the literature largely focuses on the employer experience over that of the candidate. Thus this research will focus on developing findings that evenly consider both sides of the process. As a result these three themes above may be built and expanded upon in the research.

Research Aims and Objectives

Aim

The aim of this research paper is to establish the impact that AI will have within the next five years on the recruitment industry delivering a specific focus on how this technology will influence the experience of employers and candidates. As a result creating recommendations on a new process of recruitment.

Objectives

1. Provide insight into the influence Artificial Intelligence will have on the recruitment industry, furthering the limited academic research currently available.
2. Investigate the impact of Artificial Intelligence on the employer and candidate independently and establish the positive and negative effects for both parties.
3. Interview industry experts from the fields of recruitment consultancy and Artificial Intelligence to combine and contrast insights to deliver valid predictions on the impact and change that will be seen through new processes developed by Artificial Intelligence.
4. Using interviews, a candidate survey and an observation, obtain up-to-date and targeted research on the topic of AI and Recruitment, specifically considering Risk and Limitations, Bias and Inclusion, and Opportunity.
5. Make recommendations that add value to recruiters considering the introduction of AI technologies into their existing practices, enabling readers to make well founded judgements on the viability of using AI within their recruitment process.

Research Methods and Data Collection

To obtain findings considering the impact of AI in the recruitment process for both employers and candidates, three research methods were used. These are highlighted below.

Research Method	Target Respondent	Theme Consideration
Interviews	AI Experts and Recruitment Consultants	Theme 1 Theme 2 Theme 3
Online Survey	Candidates	Theme 1 Theme 3
Event Observation	AI Experts and HR Professionals	Theme 1 Theme 2 Theme 3

Interviews

All interviews were semi-structured. This allowed deviations to areas of the topic that had not yet been researched, establishing links between AI and Recruitment. This delivered unique insight on the three themes of significant debate within the existing literature. This exploratory research was used to gain understanding of the overall industry. An explanation of the interview and the topic of the dissertation was conveyed to each respondent ensuring there was informed consent to be involved in the research (Bradburn *et al*, 2004). Each respondent gave verbal permission to be featured in this research. Semi-structured interviews have negatives, firstly the lack of structure can lead to an interviewer introducing their own biases. One key bias to consider is the authors and interviewers previous experience (Saunders *et al*, 2016) within the recruitment industry. This could influence impromptu questions in the interview. Extra care was taken to avoid loaded questions that introduce bias before a respondent can answer (Bradburn *et al*, 2004). Whilst the questions for each group were not the same, the questions did point to similar areas but ensured the respondent could answer the questions based on their expertise. To counter bias a final review of questions and answers was completed following the transcripts completion, any questions that might have led the respondent to an answer have been excluded from the findings of this paper.

The interview process was targeted at three areas of expertise. The first were 'AI Experts' making up three of the nine respondents. These respondents didn't all have expertise in recruitment but their in-depth knowledge of the capabilities of AI and the sub categories such as machine learning and natural language processing enabled cross referencing with other respondents.

The second targeted group were 'Recruitment Platform Owners', this group were both founders of platforms that have significantly changed recruitment processes and could therefore explain first hand the potential benefits. As these types of platforms are still in their infancy and are still rare the pool of potential respondents was quite small, two of the nine interviewees filled this category.

The final group of interview respondents were 'Recruitment Experts' who provided in-depth understanding of the recruitment process and ideas of how AI might influence this process. All

respondents in the recruitment section were at a senior level to ensure the expertise they provided was based on experience. Expertise varied from large scale graduate recruitment to senior role specialists. This was valuable to help identify where AI could impact the recruitment industry and highlight any areas that still require a human interaction. Four of nine respondents covered this area of expertise.

The interview process was valuable in identifying and addressing inconsistencies currently existing within the literature as well as delivering new insight by contrasting differing opinions from two merging industries. The interviews predominantly identify areas of impact on the employer but also delivered insight into the potential impact on candidates as well. In order to have a structured method of analysis around this qualitative data set, thematic analysis was completed. This provided a clear structure and also enabled flexibility in approach (Braun *et al*, 2006).

Online Survey

The online survey, conducted through Google Forms enabled a large sample size and geographically diverse data set (Saunders *et al*, 2016). The survey was specifically intended to gain insights into the opinions of candidates on the job application process. To enable some insight into Theme 1, questions were asked surrounding candidate perceptions of automation and computerisation of the recruitment process. To help establish insights on Theme 3, questions were asked about existing pain points for candidates.

Alternative methods such as a focus group were considerations for understanding the candidate experience, however it would have been less representative of the whole population and therefore a survey was chosen. With AI holding the potential to impact the entire recruitment landscape it is important to reach a widespread audience for this survey of both age and employment seniority. Questions were not specifically addressing the papers title question to avoid confusing respondents who are not familiar with the technology and potentially cause a barrier to completion.

Questions on the survey took inspiration from the existing literature, especially referring back to the findings about assessment centres, interview scheduling, sourcing candidates and lastly onboarding new employees because they are areas susceptible to automation (Pröhm *et al*, 2017). Specifically in this area, the question on selecting processes the candidate actively dislikes, enables an understanding on where the process could be improved. The survey was kept to 15 questions to ensure completion rate was kept high and to mitigate any drop-out. Any written, open questions were optional and therefore the questionnaire could be completed in under five minutes. It was distributed on social media channels, predominately facebook through groups. These groups were intentionally varied, from university pages to job board groups in order to gain insight from a wide array of job seekers. Questions asking age, employment status and industry enabled alterations to distribution strategy throughout the process in order to maximise a mixed sample and avoid serious biases that can arise when results are from one demographic (Bethlehem *et al*, 2012). After an initial review, solely using social media developed a younger demographic of respondent therefore alternative distribution strategies were employed. Primarily this involved distributing the survey through the authors professional network which includes entry level candidates to senior candidates at director level, a further request to share the survey with their contacts enabled an even spread of respondents at different ages and employment levels.

The importance in this specific research lies in establishing the potential impact on candidates if AI is introduced into the recruitment process. Candidate experience is a vital aspect of the hiring process for recruitment companies and it needs to be established what attracts or detracts candidates from certain aspects of application processes. As HireVue (2018) points out, pain points within a recruitment process can result in good candidates dropping out as well as bad ones. To improve effectiveness of recruitment, these pain points must be addressed.

Observation

The final research method was at an event organised by Cognition X, a research group focusing in on the impact of AI in HR. This event included two keynote presentations followed by an open discussion on the topic. As a participant-as-observer, the group were fully aware of the authors research agenda, however the authors participation remained valid due to previous experience in the recruitment sector as well as an understanding of the influence AI is likely to play due to the literature review that was completed prior to the research (Saunders *et al*, 2012).

To analyse this event effectively the discussion was audio recorded with key parts of the discussion pulled out and highlighted as a commentary on participants contribution. Through delivering a narrative, significant topics can be established and contrasted with other research that has been completed as well as developing key themes that exist in the industry right now. This observation was focused on establishing and categorising the opinions of two experts in HR and AI and a roundtable discussion with all participants involved. In both cases any points that were raised were split into impacts on 'Employer Experience' and impacts on 'Candidate Experience'. During the break everyone was asked to state why they attended and their question to everyone else. These questions were recorded and formed part of the findings to establish key themes of concern and interest. These questions helped identify further themes to consider in the discussion.

Observational research is a very valuable method of research to gain insight and generate findings that would have been very challenging to obtain through other methods such as interviews (Lancaster, 2005). For this research in particular, the value was in identifying unprompted considerations and key themes (Clark *et al*, 2009) currently under consideration for companies in the UK when considering AI in HR. The participant as observer research (Saunders *et al*, 2016) took place at an event hosted by CognitionX, a specialist AI research house who work with both the public and private sectors (CognitionX, 2018). An unstructured approach does open up the research to observer bias (Lancaster, 2005). To mitigate this the observation was audio recorded and then analysed following the event. This enabled numerous playbacks of the event to ensure objectivity and that no points were missed. The introduction for this event provided context on Cognition X along with some underlying trends.

Findings and Results

Interviews

Interviews were conducted with 9 experts. Chris Bradshaw, a senior manager at Deloitte, leading the AI proposition for the People and Workforce Analytics team. Alex Hutchinson, the Managing Director of A-Rec Solutions, a recruitment to recruitment consultancy. Rene Bolier, the CEO of OnRecruit a Data Management Platform, this leverages AI and Machine Learning to help recruiters automate and improve decision making. Jonathan Firth, the Managing Director of Michael Page, London and South, the recruitment firm covers a wide array of recruitment and search options and employ over 7000 recruiters. Mary Maguire is Managing Director of Astute Recruitment who specialise in SME, finance based recruitment. Daniel Hulme is the CEO of Satalia, one of the leading AI technology firms in the UK. Simon Gray is an executive job coach, working specifically with candidates, Simon's knowledge also covers recruitment at all seniority levels. Adam West is the Head of Marketing at Satalia, he also recently completed his dissertation on AI's influence on the marketing industry. Hung Lee is the CEO of workshape.io a platform that removes the CV for the developer recruitment market. He also writes the recruiting brainfood newsletter that is read by over 7000 recruitment professionals each week on the current trends in recruitment and HR.

To analyse the transcripts taken of these interviews coding was used, the three themes of Risk and Limitations (Theme 1), Bias and Inclusion (Theme 2), and Opportunity (Theme 3) that were highlighted in the literature review have been considered but not directly used due to the widespread findings of the interviews. These codes have taken inspiration from the original themes and therefore have been tied them. This coding process has enabled a more manageable analysis of opinions and knowledge (Mills *et al*, 2014).

In the case of these interviews the codes are with the theme considerations are:

Code	Discussion	Theme Considerations
Limitations and Barriers	What is blocking AIs impact on Recruitment?	Theme 1
Data	The amount, the quality and the availability of data currently available in the industry.	Theme 1 Theme 3
Bias and Inclusion	A discussion on if AI will improve or worsen biases within the process.	Theme 2
CV Value	Discussing if the most recognised entity in the process is needed anymore.	Theme 3
Culture	How hiring using an AI will impact culture of organisations?	Theme 1 Theme 2 Theme 3
Capability	How much of the recruitment process can be automated?	Theme 1 Theme 3

Opportunities	How AI could help recruiters, now and in the future?	Theme 3
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Limitations and Barriers

Gray highlights that AI has “been quite a scary thing for recruitment organisations.” According to Lee this is because “critics misunderstand the technology” by thinking “something non-human ... is making these hiring decisions.” Bradshaw states the “way we have made hires over the last 100 years might not actually be right” and that “companies desire” to change this process might be barriers. Hutchinson has seen AI platforms which have had “problems” and therefore “are not ready yet.”

Bolier said there isn’t a lot of data on “how receptive we [candidates] might be to be moved emotionally by something other than a human being” explaining why Firth suggested AIs influence will stop at “influencing that right person to join the company.” Bolier suggested recruitment will see “a lot more automation of messaging personalisation” and with senior roles AI will give “the information to the humans to then decide on what to do.” Maguire argues less of the process can be automated for smaller companies due to the specificity of each role.

West also points towards existing companies have “legacy systems” and as a result these systems will “likely need streamlining to make that data usable.” Bolier also agreed suggesting the success of AI lies with “the vision and the digital maturity of the company in question.”

Bradshaw suggests that, at least with senior hires, you “want to have that face-to-face interaction, at least for the foreseeable future.” Hutchinson said he “cant see technology replacing the personal touch of a human recruiter” and that “if it does it will be a very long time.” Bolier suggested repetitive tasks could be automated but “anything else will need a human touch for a very long time.” Firth agrees with Bradshaw suggesting graduate hires could be automated immediately but he thinks it will be unlikely that “AI will make a full hiring decision on a c-suite role” in his lifetime. Maguire believes that “the ability for AI to replicate that human engagement to be able to pick up on body language and wow contact, those non-verbal communication abilities” are abilities that she cannot see “AI doing for some time.” West estimated that “for the next 20 years it is likely to need that human interaction element” to make judgements on people.

Firth pointed out that “to hire the right person you actually need to attract them first” and he does not believe AI can help in doing this. Gray agreed saying “we all want to feel valued and as soon as you put a machine in the middle you are doing to detract from that personal touch” and “that will never change.”

Data

Bradshaw commented on the value of data and said “we had a client who we were helping identify role fit and they had 100,000 staff and that was not enough data to make decent enough analysis.” Bolier noted “your input results in an output” therefore you need a “perfect data set” or you must constantly iterate the results the machine is making to get the correct results. Lee agreed saying “if we had absolute and complete data for every single person then we could build a very good AI service but as a culture we seem to be moving quite aggressively away from that vision.” Bradshaw highlights that this new ruling ensures any automation needs “a human decision making process, even if it’s a human that clicks ‘yes’ at the end of the process.” This means you “cannot have a fully automated recruitment process” with this ruling.

Bias and Inclusion

Bradshaw argues that when you introduce automation into a process you actually “lose a great deal of bias” however with AI you introduce more social factors and “begin to introduce a greater risk of bias being introduced again.” Hulme stated that “humans are biased and are hard to fix. AI will be biased but will be much easier to fix.” Further to this Hulme blamed bias within AI originating from the data, not the developers. West agreed by stating “if the data is biased the output will be biased.” Lee argued “it has nothing to do with the performance of technology, it’s how humans operate it.”

CV Value

Bradshaw argues that “the CV is dead” going “for almost all roles.” However at “senior levels the CV will linger.” Hutchinson acknowledges they have “lost their value” but stated they are useful in showing “attention to detail.” Gray argues against this saying “the ability to write a CV ... is a skill in itself” and it is a “low probability strategy” from a candidate perspective, as an employer “you are probably missing out on some of the talent” if you only look at the CV. Bolier suggests “reviews, testing and situational assessments are going to be a lot more dominant” which will be verification of the information on the CV. Boiler also explains more roles are now project based and this is reducing the value of the CV in these short-term contract roles. Lee also alluded to this by saying he thinks “we are already seeing the distribution of labour using AI in the task economy” where culture essentially is not a consideration. Firth also believes the “CV is a terrible way of helping people find jobs” but as Bradshaw also alluded to, “it was the best we has at the time”. Firth’s belief is that the CV will become a film clip rather than a document in the future. Maguire still feels the CV holds value but “it depends what industry sector you are looking at.”

Culture

Firth suggested that AI will enable analysis of successful employees and then enable recruiters to search for “people that fit those behaviours.” However according to Bradshaw, Google have had an ongoing programme “working on success analytics, with a focus on top performers” however “it has proved a lot harder than it was first thought.” It was also stated by Firth that “the more personality types within an organisation the better” and if AI is very successful in analysing candidates to match culture there could be a cultural streamlining which he described as “incredibly dangerous.” West agreed saying although you want new employees to “align to a certain extent ... you need them to come in and challenge the culture” which is easier to monitor with human recruiters right now. This is partially agreed with by Hulme who said that recruiters will still be involved and “understand the importance of diversity and will be smarter at enabling diverse teams” through the use of AI.

Capability

It is consistently accepted that AI has the power to automate certain aspects of the recruitment industry. Bradshaw felt that AI can “reduce the workload on an end to end process” resulting in “significant improvements” such as “reducing cost of hire”. This was also backed up by Lee which suggested it could be “technically feasible” to fully automate recruitment in the future, but it is likely to “happen in incremental bits.” Hutchinson agreed with Bradshaw that AI could enable “cost saving” through using AI however disagreed with Lee because he only felt it will “replace the low level recruiters in the long run” adding that the human touch is important and “it’s not something a computer can do”. Bolier suggested automation will happen for repetitive tasks “but anything else will need a human touch for a very long time”. This was contrasted by Gray who suggested although AI technologies may on the surface cut costs “if they make the wrong hire then it may actually in the long run increase them.” Bradshaw argued against this

suggesting there needs to be a certain level of faith because "some of these algorithms have been developed over the period of 60 years so they have been tried and tested". Hulme also backed this up by suggesting technologies in the near future will be able to "out perform humans" and we are in many cases there with the technology. Maguire widely agreed with these points made by Bradshaw, Hutchinson and Bolier however added the caveat that although automation is possible within the larger companies, it's less viable with smaller companies who are "looking for a specific type of candidate". This was supported by Gray who said when "you put a standardised process around a non-standardised product" you are going to be "in trouble." In the case of Firth, who deals with high volume recruitment, it was suggested graduate hires could be immediately automated from start to finish without human control because firstly there is a lot of repetitive tasks in this space such as cv vetting but also the technology is likely to improve a process that is largely "a punt" currently.

Opportunities

Bradshaw suggested the greatest opportunities lie in high volume recruitment where "making small gains on efficiency for each hire is a very big win." Furthermore it will help identify role fit for candidates with "the ability to recommend alternative jobs to candidates based on their application." Hutchinson supports this suggesting AI can enable "cost saving" and cut out mistakes made by a human recruiter. Bolier sees AI as a way to support the human recruiter by "obtaining insights" to "help recruiters make better decisions." Firth agreed with this as currently "the whole process of matching people to jobs is very unscientific and therefore is apt to many mistakes and that can be improved considerably" by AI. The process of finding candidates is incredibly time consuming and Maguire noted that AI enables the opportunity to "have more fluid discussions with candidates." Lee agreed with this highlighting "a candidates most common complaint is the CV black hole, no interview feedback, no transparency. This is all human driven, the reason this exists is because there are overworked humans that cant deliver to this." Although a general skeptic of AI within the recruitment process, Gray stated that the likes of HireVue technology has real potential "if it analyses your personality and energy" it could then be "very valuable and arguably could form part of the recruitment process further on." West thinks AI will significantly help identify "who works well within our organisation and try and quantify those characteristics and identify gaps within areas of your business and then by doing so you can go even deeper and say what kind of person aligns well and fits within our culture and beliefs."

Online Survey

This survey was made up 132 respondents providing a strong basis for initial analysis of candidate opinions. Furthermore as you can see from the data there is a full spectrum of ages and employment statuses. It is worth noting however that 40% of respondents were 21 to 25 year olds, which means there is not an even distribution of respondents. Overall this survey provided strong insight into the perceptions of candidates and their overall opinion of automated processes.

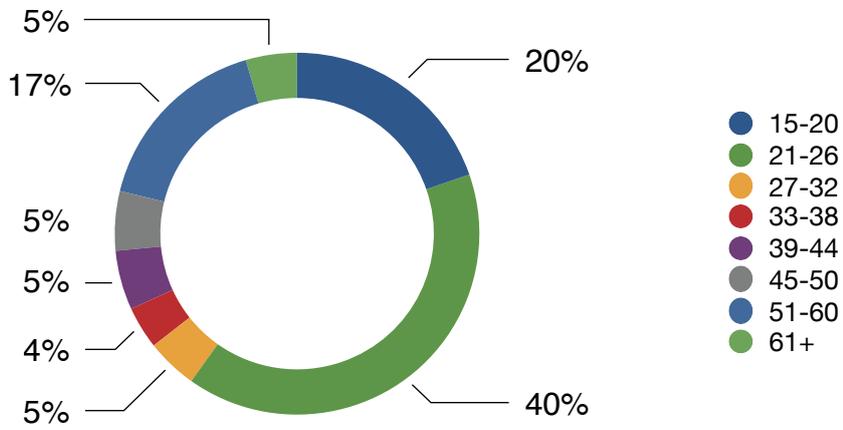
The first point to note is the majority of respondents (71%) have previously applied to a job and not heard back. Those that do receive a reply but a slow one might not join the company as a result, over half (51%) suggest it would depend on the company with over a quarter (27%) saying they wouldn't join them. Culture is overwhelmingly important to respondents (79%) with only 4% suggesting it wasn't important. A large number of candidates are not happy with the current process of recruiters screening candidates by their CV, 45% of candidates do not like this process of elimination with a third (33%) of candidates suggesting it depends on the role. 81% of those who reach the interview stage in roles ask questions to the recruiters as well and being asked questions thus showing it is a two way process. Respondents were also asked to highlight

the areas of the recruitment process they do not enjoy, this has no tie to AI and automation. The most disliked process were writing cover letters (20%), video interviews (20%) and group assessments (17%).

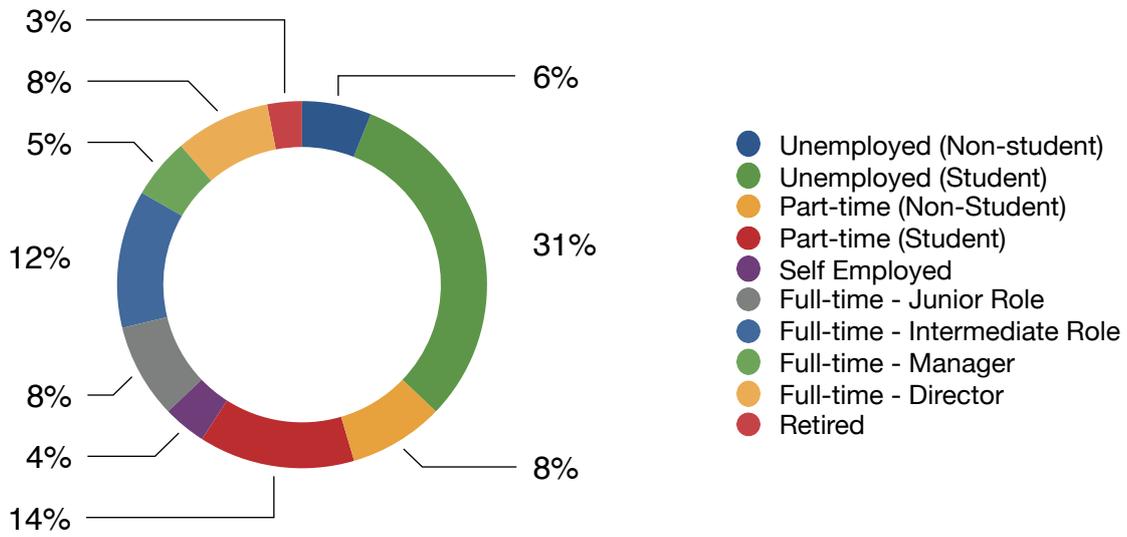
Respondents were asked if the recruitment process was automated by a computer program if their perception would change on the company making the hire. Results were overwhelmingly negative towards automation with 73% suggesting it would worsen their perception and only 5% suggesting it would improve their perception. When asked why respondents opposed the introduction of full automation they suggested it lacked the personal touch that they have come to expect, and they liked human interaction. The general consensus was if employers don't interact with you face-to-face then they undervalue you as a potential employee. Secondly many believe it would miss important points about them.

Three very closely interlinked questions asked the respondent to chose their preference between a human and a computer for CV screening, interviewing and finally salary negotiation. In all three, the human was the overwhelming favourite.

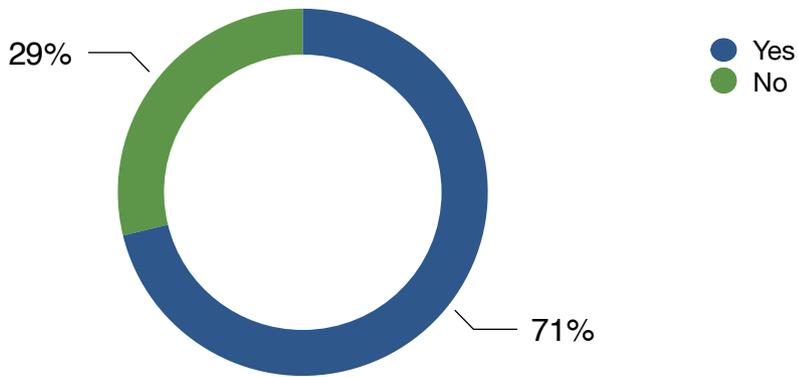
How old are you?



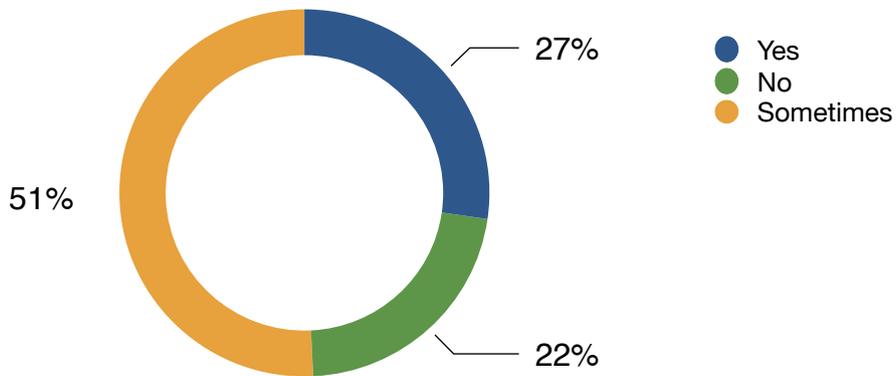
Employment Status



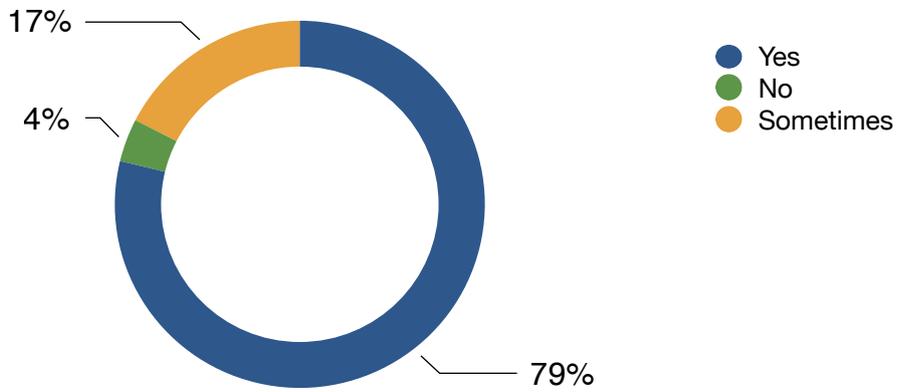
Have you ever applied to a job and not heard back?



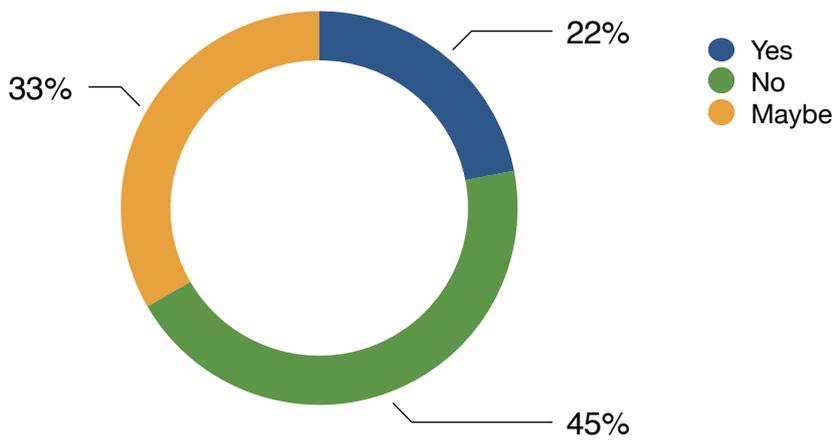
Would a slow reply from an employer impact your decision on joining them?



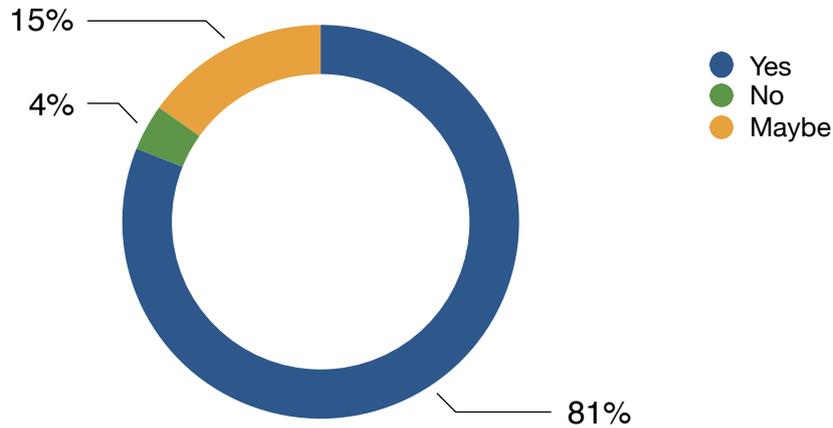
Is hearing about the company culture important to you?



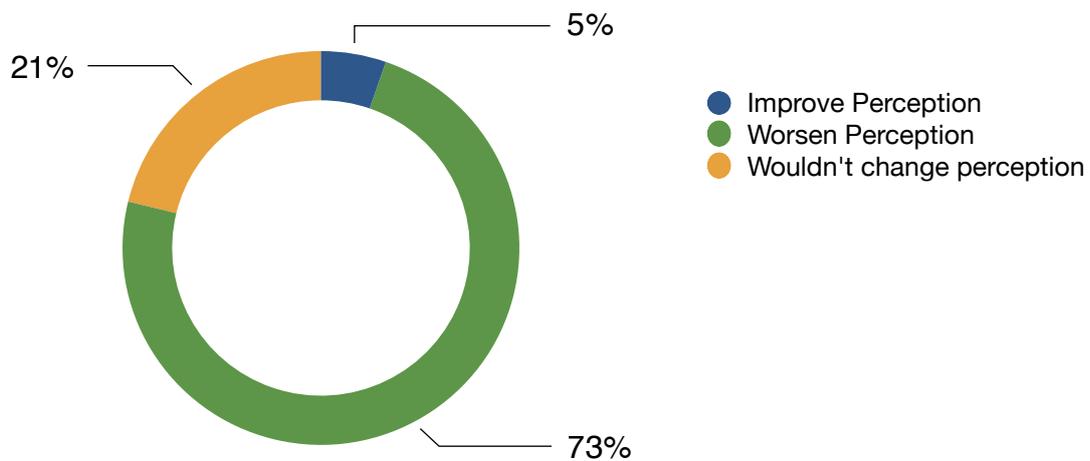
Do you think it is fair for a company to make a decision on your suitability based solely on your CV?



Would you normally ask questions about the company in an interview?



If the majority of an interview process was delivered by a computer program rather than a human recruiter, would your perception of the company change and how?



Shows company isn't willing to deal with people individually
It makes it seem like the company doesn't actually care about hiring you, or that they are interviewing as many people as possible. It's very impersonal and lazy in my opinion. If I have to put in the effort to go through many stages of a graduate job (application, online tests, questionnaires) the least they can do is hold a face to face interview.
Easier to access and it shows they respect flexibility and time.
If you have put in the time to prepare for and attend an interview, you expect a similar show of effort from your potential employers.
A computer program can never perceive your answers equally as a human would do
This would depend on many factors however I think there would be a tendency for the process to make the candidate feel undervalued however this may not necessarily be the case
Lack of human interaction indicates a streamlined business. Firstly this doesn't pan well for job security. Also a machine can not understand international and context as well as a human, so what I say may be misconstrued or misunderstood.
If the company isn't people friendly to host an interview for me and would rather a computer do the work i wouldn't be able to ask questions, express interests or showcase myself.
It can be good because there may be less chances of someone being biased but computers can be programmed and also an interview panel could come to an agreement and use valid and reliable rating scales to reduce bias. I would rather have a conversation with humans than a computer. Now the next question, computer could save time but again, it could be programmed but I would prefer a computer for that.
The criteria of the job applied for would presumably be appropriate for the role. As long as a certain part of the process was done via human interaction the application would become fair.
Prefer face to face interaction
Seems like they can't be bothered to meet me in person
I'd prefer to establish contact with an actual human/employee of the business, it feels much more authentic. Plus, I feel I would be at a disadvantage if the computer program was recording solely my answers without consideration of my presentation and personality.
I need to feel personally invited to an interview and interact with the actual people I would be working with
In my industry, journalism, but basically in any industry to determine whether you would be a good employee, you really need to personally talk to that candidate and see how they react to certain questions and stress. People will always make themselves sound better in writing, but a good HR person (and editor in my case) will be able to assess how the personality of the candidate would fit into the team, and how skills not necessarily connected to the job would enrich the position.

While I could appreciate their need for maximum efficiency this is troubling for two reasons. One - This is an important moment for the potential employee that would almost certainly lead to feeling undervalued and potentially confused with the process. Two - There is a great deal of litmus testing involved in human social interaction, subconscious judgements and micro behaviours that would indicate to a human participant very obvious flaws in a candidate that may be ignored completely by a computer programme. Ultimately the program would have to probe, test and judge based on a system of values. The first question here is who creates the values and what do we consider to be 'good' values. This is less of a problem in the corporate world as we can make these values identical to the company profile (as opposed to say, creating a program that tries to mimic a moral consciousness that can judge candidates as a human would). This still is problematic however, say the company has goals towards diversification and gaining high-level academics, it is not unlikely that to the computer arguments such as eugenics/equality of outcome rather than equality of opportunity etc. would be considered negatives as it would simply try to hire toward the indicated company profile. Literally everything programmed into that judgement, every detail asked (and every detail left out), how candidates are measured against each other etc. provides an opportunity for an unseen, and possibly very serious, flaw to emerge. When considering the future of the employer's business and the quality of life for the employment candidate that seems like an unattractive and unnecessary risk.

With that being said, as with Chess, Mah Jong and DOTA 2 there will come a day when this task can be performed far better by a computer program. The key difference is in the difficulty of the task. Ultimately those games boil down to a system of highly evolved 'trial and error' whereas this constitutes an emotional, intellectual and creative task. Tasks such as these require a more wholly-functional AI that can interact and understand humanity as well or better as we can. It would essentially require the simulation of consciousness and even if that were possible the SWOT analysis for such a concept would still be infinite due to the amount of unknown and emergent problems that it is almost impossible to conceive of in its entirety. By the time that happens we're going to need humans to interview the A.I.'s that will interview the humans!

Addendum: After viewing your questions below I found the only one that I thought about before clicking 'human' was the salary negotiation. This could potentially have some benefits in the standardisation of pay, but again there are so many mitigating factors here that for the time being I would still prefer the possibility of human error for the time being. With that being said programmes that dictate equal and standard pay for the fair distribution amongst a group of employees does seem beneficial and devoid of many of the pitfalls mentioned above.

Computer can't judge people based on personality e.g. person is likeable
I like to talk to a human being and feel as though I am being judged as a person not just answers in a machine
I would hope they would take the time to meet me in person and see who they're hiring
It feels odd to be interviewed by a machine/talking into a camera by yourself
It would show they didn't think I was worth the effort of having a human recruiter (I prefer interaction with humans)
Probably reassure me more but still need humans for the assessment
I would feel like they didn't have the time to get to know someone they might employ. Plus I'd like to build up a rapport with someone I might work for. One interview I had we really hit it off with each other as we had the same ethos about the industry. Although my husband thinks it might be a fairer interview based on the mood of the interviewer .
It's not catered to the individual otherwise. It does not show concern for new employees.
Impersonal recruitment process makes you feel less valued as a potential employee
Computers determines which candidate to select based on certain words and expressions of a candidate. I don't think it could look beyond that.
They can't be bothered to talk to me.
Don't care enough about human capital to have a more extensive conversation
The overall outcome of the interview should be the same whether completed on computer or in person based on the questions being asked
They don't want to understand you as a person.
It implies that the company is only bothered about its efficiency. Although AI is getting better and smarter, and will become smarter than us, it seems unprofessional to recruit someone on the basis of a computer program because its cheaper more efficient. A.I. cant judge my personality the same way another human can, i believe it will increase the likely hoo .
Recruiter is a good source to understand the company culture. I don't think the interaction delivered by computer programm is as good as human touch.

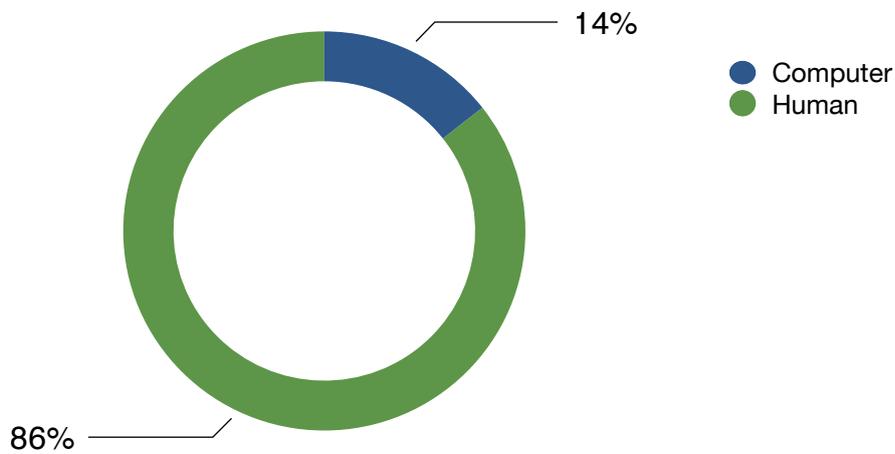
neither bad nor good
Person to person interaction is always best. Computers don't allow subjectivity, which I would leverage
How on earth could a computer get to know me and know if I'd be a good fit?!
An interviewer should see the interviewee face to face. Computers are soless, human interaction is solefull.
It's hard to sell yourself on paper
They don't care about the personality, just your skill.
Interviews should be more personal and human
It would seem like they can't be bothered to take the time to meet you.
We will move with the times.
No, my perception won't change because what is inside us is always with us. I am not a person to change things just by getting frightened or anything else.
During an interview I would want to gain an impression of the company myself, and this would be difficult to do. It would also be less personal, and would worry me that the company don't place value on human interaction - something vital to me enjoying my job.
Because it appears lazy. Shows they are looking for a cookie cutter person
It would depend on the role and since my work experience has dealt with relationships both within and outside organisations, I rate that human interaction. However, a poor interviewer or by someone not familiar with role is awful
Implies the company doesn't care about its people
I'm not a computer, and I don't feel I can be judged by a computer. This applies to me because my job involves working with people, so I want to be recruited by people.
You need to learn about the company and the company needs to know about you. I would guess this is more difficult.
I like to interact with people and the interview is an important time to do this. If a company feels it is appropriate to turn part if this process over to computer technology, that suggests to me that their interpersonal processes are not a priority.
It would further the perception that my time is worth very little to the company, furthermore it would give me less of a feeling for the sort of people that I would be working with
Computers are fine but a human should interview, people like to meet each other and it gives a candidate an opportunity to see who they would be working with.
I need human contact and don't like the idea of computers taking control.
It would indicate an efficient company but soulless.
As long as there was still the opportunity of a face to face interview I wouldn't mind
I would assume the company did not care about it's people.
Circumstantial on expectations, the seniority of the role and the company interviewing with.. for aptitude and to reduce a large number if applicants I supprt the use of computers.
A computer may look at a cv but if passed the cv stage would expect a human interview
impersonal
I feel it is important to meet with a candidate face to face to properly evaluate their suitability for a role.
The human part of the interview i.e interaction is important to get a feel for the company
A computer cant get a real feel of a persons views and feelings about anything. An interactive discussion cant be had.
You can only give an answer to a given question on a computer, you cannot explain your reasoning/justification to a non interactive machine.
I assume this would be applying to a company that has a large number of applicants to filter. This is not a situation I have experiences in my limited number of job-seeking experiences. However, if the filtering needs to be done then it's a sensible enough way of doing it.
Company not portraying that it values its (prospective) staff but just a " computer says " outfit.
Removes the opportunity for me to find out small details about the type of work and people already involved with the company.
Nothing beats face to face

As computers are key to progress within society it would not surprised me if it did become computerised. And its the demand within the creative industry.

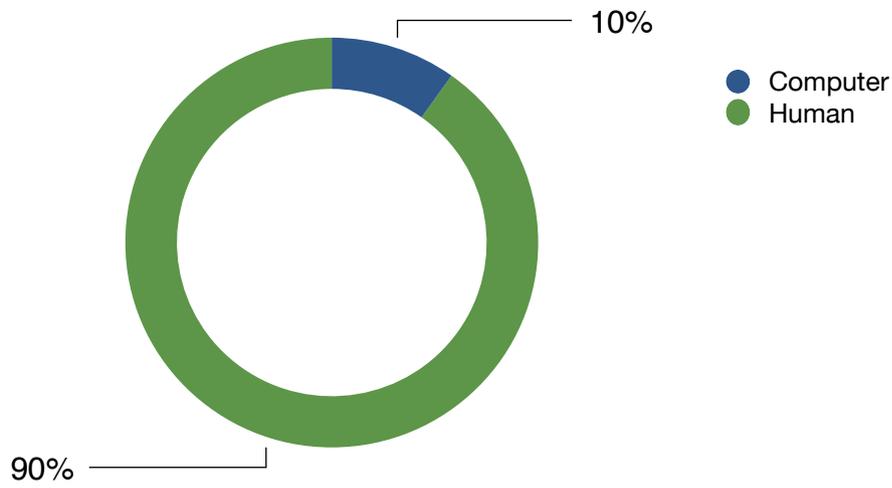
It would imply that the company is not concerned with you as a person and it would not gain an insight into how you interact with other humans and therefore what you could personally contribute to your role within the company.

Not everything is black and white .Computers can only go on what is communicated .Its up to a company whether they want to see the whole picture .Obviously some companies want to feel the need to embrace artificial intelligence but not all circumstances apply therefore feel recruitment is more a personal interaction .

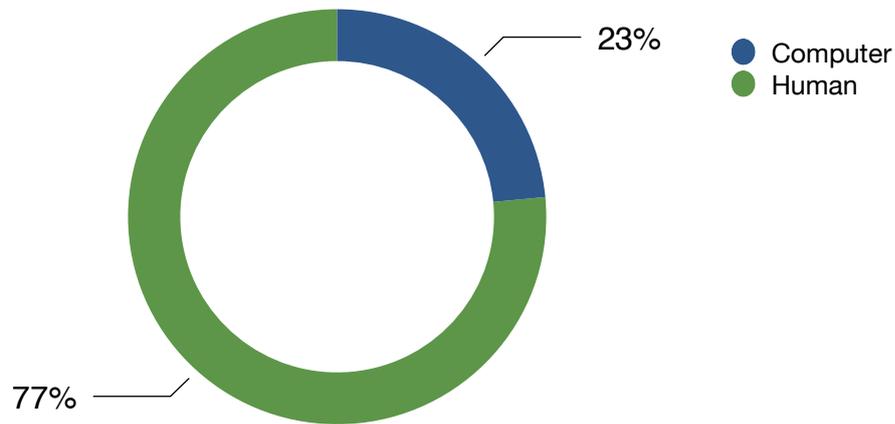
Would you rather a computer or a human look at your CV?



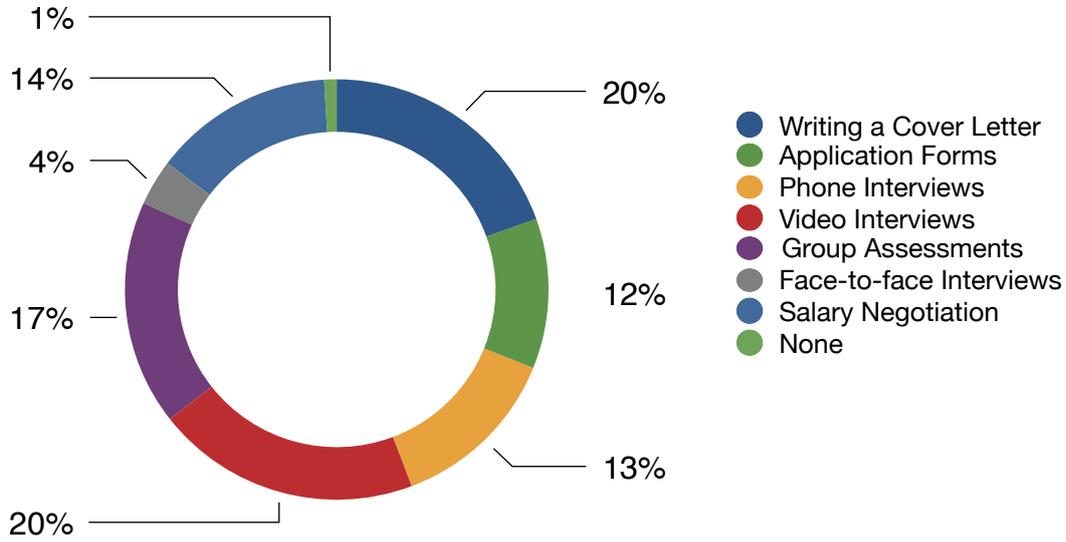
Would you rather a computer or a human interview you?



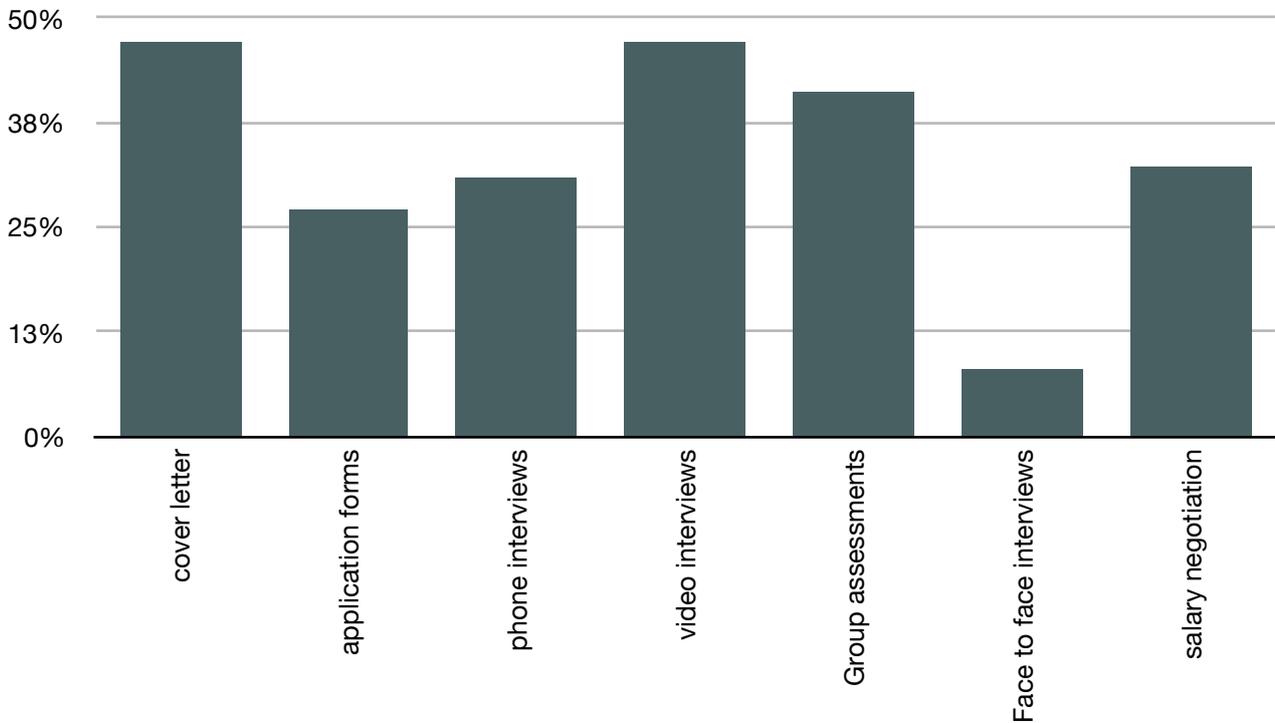
Would you rather a computer or a human negotiate your salary?



Select Processes you Actively Dislike (Combined Results)



Select Processes you Actively Dislike (Individual Processes Results)



Observation

Both the presentations by Doyle and Newry cited that data is a big area of consideration for employers. Firstly Doyle explained that good data is very challenging to obtain which enables you to train an AI platform. This is also supported by Newry who suggested there are a lot of poor data sets available, and they add no value to companies and could in fact be dangerous. Big data doesn't necessarily mean good data and companies must be wary of this. This was expanded upon in the roundtable discussion where participants questioned the ethical considerations of data management especially with the likes of GDPR being a prominent consideration. Interestingly however data didn't seem much of a concern for the wider participants in the questions section with only one question considering how to obtain the right data sets. This suggests data quality is not a priority for a large proportion of AI focused recruiters when in fact experts on AI argue it needs to be.

Newry highlighted the capabilities of AI are currently underused with the majority of technologies only considering candidate intellect when in fact it can consider potential, personality fit and lastly desire to work at the company. Interestingly this is something that was of significant interest to the participants when they were invited to ask questions. Eleven of the Twenty-Eight respondents all asked questions that considered the potential of the technology. They want to see where the technology is going, not where it is now, which suggests they feel AI is not ready to be integrated into their processes currently.

Doyle suggests that candidates are going to see the application stage change with the introduction of new technologies such as HireVue. What this infers is that candidates don't have much say in the matter. Newry also supported this along his presentation however did highlight that new processes would only be introduced where they add value to a candidate as well as the employer. In the roundtable discussion it was highlighted that providing context to the candidate is very important because without it they may feel these new approaches; games and tests are not serious aspects of the evaluation process. It needs to be explained that these new technologies have the backing of science and enable fairer and more objective decision making.

Discussion

Introduction

There are a number of conflicting views on the impact and the capability of AI within the recruitment space. These are predominately preconceived ideologies on automation rather than AI. There are significant knowledge gaps in the industry, with many recruiters not understanding the technologies available to them. Candidates have a very negative opinion of the recruitment process and their considerations of automation follow this trend. There is clear motivation to change recruitment processes to appease candidates however it is contested whether AI is the solution to these complaints.

Capability, Limitations and Barriers

The extent at which AI will influence recruitment is very contested. The arguments by interviewees were quite consistent within their two fields of expertise. Bradshaw and Hulme, both AI experts, strongly support the use of AI in most use cases for recruitment. Whereas Hutchinson, Maguire and Gray, all recruitment experts, generally oppose the concept of AI within the recruitment process. As a result a barrier to widespread adoption will form unless these perceptions begin to align. Francis *et al* (2017) and Doyle pointed out there is already a gap between the capability and the current status of the recruitment industry and this is set to widen unless perceptions align.

There is agreement, with the interviewees (Bradshaw, Lee, Bolier, Hulme & Firth) and within the roundtable observation, that high volume graduate roles are in a position where AI could automate a significant proportion or all of the process already. Raphael (2016) state on how Unilever has successfully established this for their graduate program, reducing hiring time from approximately 4 months to 2 weeks. However this paper's survey showed candidates overwhelmingly prefer human, face-to-face recruitment processes. Whilst this result was challenged by Lee for being a purely perceptual issue, it arguably appears a cultural issue with candidates. In the candidate survey it was clear that feeling valued was very important for applicants. Candidates say automating the application makes them feel undervalued. This could result in some of the top talent to self-filtering out of the process before a recruiter has the chance to assess them (Resource Solutions, 2017). Hutchinson stated introducing new processes will also increase stress for applicants. Automation, through AI technology is therefore a strong solution for high volume applications but a personalised process will attract the higher performing candidates.

Bradshaw, Bolier and West state that data quality is a big barrier the recruitment industry. Companies who use poor quality data sets, motivated by cost, are at risk of making hires that are simply not well founded in data science (Newry). This was also suggested by Campolo *et al* (2017) referring to companies using cheaper, non-representative data sets and Wishkirchen *et al* (2017) who highlighted even the most sophisticated AI technologies make mistakes. As a result many corporates have backed off with cognitive recruitment strategies (roundtable discussion). Newry pointed out that triangulation of multiple data points helps address this issue.

Candidates need to understand how a computer programme makes the process fairer and transparent which was highlighted by Hulme, Lee and Newry. AI, through chat bots can enable feedback to both successful and unsuccessful candidates, which in roles that receive high volume applications was not possible (Bullhorn, 2018). This could change the perceptions of candidates which are currently largely negative. There is also complete agreement in this research that at present, and for the near future, a human recruiter is necessary for middle

management and senior management hires which aligns with Tandon *et al* (2017) and Faliagka *et al* (2012).

Those that fear AI at this point appear to have only a small understanding of the technologies capabilities and limitations. The findings in this report suggest that currently this is the biggest barrier to adoption, closely followed by data quality.

Risks, Bias and Inclusion

Another concern is Bias and Inclusion, existing literature has painted a positive future of AI eliminating unconscious bias (Wishkirchen *et al*, 2017 & Randstad, 2018 & Poitevin *et al*, 2017) however AI is growing in capability to not only to consider a candidates intelligence but more social factors to establish role fit and has inadvertently created new diversity issues (Bradshaw & the roundtable discussion). Furthermore technically advanced processes risk discriminating against older generations who find online processes uncomfortable (Maguire). Data sets, as mentioned above, play a major part in this issue, but as Firth and West point to, the resulting cultural streamlining is very dangerous. Not only because it creates a diversity issue but because a companies culture is vital in a growingly competitive labor market as well as company performance. 79% of respondents to the candidate survey suggested culture was important to them, reaffirming this point. The survey pointed towards a negative connotation of company culture if an application process is automated, thus suggesting recruiters could lose out on talent in the industry, moreover some candidates feel an automated process would limit their ability to communicate. This once again comes back to context being vital for the candidate (Lee).

Over 350 companies currently claim to be AI HR companies according to Cognition X's research and this is creating a lot of "smoke and mirrors" (Firth). Clearly there is a first mover incentive for recruitment firms to adopt AI technologies (Rao *et al*, 2017) but repercussions appear likely if that personal touch is blocked by a machine in the middle of the process (Gray).

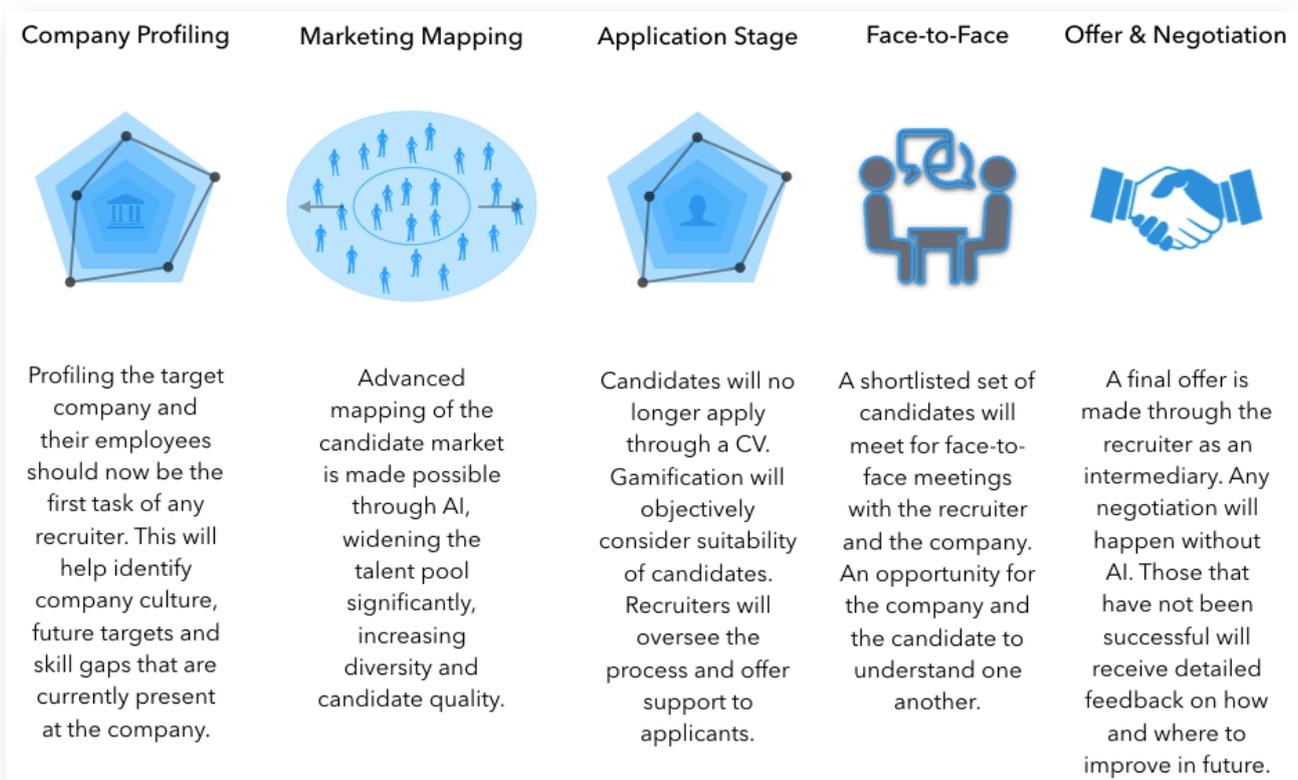
Opportunities

Advancements in Deep Learning (King *et al*, 2017) means the recruitment process is set to change considerably. The method of recruiting candidates has been flawed for decades (Bradshaw) and the current process of recruitment is predicted to only be 16% effective (ClearFit, n.d.). Through the use of data analytics platforms, new insights can be delivered (Bolier), this can enable more consistent, unbiased recruitment. Furthermore it enables recruiters to scan a wider pool of potential candidates, both passive and active, through new techniques of targeting and advertising roles. Having a larger pool not only enables better options but provides a more diverse range of options to the employer (Firth).

The core opportunity at this point appears to be Intelligence Augmentation as put forward by Makridakis (2018) and Corless *et al* (2017) where both the AI and Humans work in conjunction with one another. Change will happen incrementally and gradually influence all of the process (Lee). Recruiters should not be afraid of AI, fundamentally at this stage it should place little risk to their roles and rather enable a more efficient process. It is inevitable that some recruitment firms will be incentivised to attempt to replace employees due to cost saving and efficiency drives, however the overwhelming candidate demand for human interaction, prior to accepting or declining a job offer is what will limit this to a small niche in the recruitment market.

Conclusion and Recommendations

The current recruitment process has not radically changed in decades (Singh, 2017). However, the introduction of AI means changes are needed in order to maximise the benefits as well as mitigating the shortfalls. In light of the findings from this research a new approach to the process of recruitment has come to light. Below is the new model created, titled the Augmented Intelligence Recruitment Process, this concept is recommended for recruiters both in-house and agency prior to each hire they make, recommending the level of AI that they introduce in each stage.



Company Profiling

As the findings point to, little consideration of the company is made when recruiting candidates. Whilst job descriptions may give some context and history of the company, recruiters fail to objectively assess the company. It is recommended that this comes to the forefront of processes, using data analytics to pull information from their operations database. Further to this detailed interviews should be conducted with key personnel who would interact with the successful applicant. With this you can create a matrix for the position to establish the type of person who would be a strong fit for the position. These findings should fundamentally impact the way job description is written and who to target and advertise the role to. Careful consideration of future goals for the company are also important in order to weight the matrix. If this is not completed then the matrix may lead to cultural streamlining that would negatively impact the company in the longer run.

Market Mapping

It is predicted that recruitment agency CV databases will rapidly lose value upon the widespread introduction of AI into the recruitment process. The challenges of legal constraints associated to data management along with general public approach to protecting their data will further reduce the incentive to keep these data sets. As a result it is highly probable that recruitment teams will invest heavily in marketing and candidate outreach within the recruitment industry through the use of targeted adverts and chatbots to widen the candidate pool significantly. The use of intelligent AI chatbots that hold conversations with potential candidates, judge their suitability and then guide them through the application process will lead to a more diverse and higher quality set of applicants delivering a higher probability of matrices matching between the company and the applicants.

Application Stage

Evidence suggests that the CV will be replaced in stages, with creative roles seeing this change in the short term with more structured qualification based roles such as accountant positions changing in the medium term. Senior roles, such as CEO positions, will see the CV remain for the longest time, but upon the perceptual shift in acceptance of change, along with the unquestioned capabilities of these technologies, these new application methods will see the CV removed for all roles. The introduction of smart assessment tools such as gamification and video analysis technologies will be at the forefront of this change, matrices will deliver more objective assessments of candidates and enable faster and fairer applications benefiting the candidates and the employers by reducing fallout rates and reducing bias.

Following assessments, the matrix will be assessed against other candidates applying for the role and find the best matches to the company profile created previously. Essentially this delivers a role fit assessment, which can be largely automated. Within this stage recruiters are still required to engage in conversations with candidates in order to build relationships and ensure they feel valued. Whilst this could be largely done by chatbots in high volume roles occasionally that human touch would be needed, especially in roles where there is a shortage of talent.

Face-to-Face

It is unchallenged that the face-to-face meetings hold significant value irrespective of any AI within the process. These meetings will be valuable twofold. Firstly it enables the recruiter and the company to establish if the candidate is indeed as good a fit as the algorithms have suggested, but secondly it enables the candidate to look around the office space and meet their future colleagues. This is conducted outside of interview conditions, removing the pressure and enabling the candidate to act naturally. This allows the candidate to experience the culture of the company first hand, which if the algorithm has performed as expected, will be to their liking. This process makes the candidate more likely to accept the terms of the offer but also increase retention rates, ensuring realistic expectations exist with both the employer and the candidate.

Summary

AI will touch the entire HR operation and the recruitment process is the first aspect set to see that change. As a result in the next 5 years there will be significant structural changes needed to implement the above recommendations, enabling significantly better hiring results, lower day to day costs and a competitive advantage over other talent teams.

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