It’s more than just ChatGPT: The role of AI and ML in talent selection

CodeSignal

Introduction

When you think about artificial intelligence (AI) and machine learning (ML), what comes to mind? If it's ChatGPT, AI-generated art, and autonomous pizza delivery, you're not alone. These are just a few of the most buzzworthy developments in AI and ML from the past few years–and they're just the tip of the iceberg.

In this article, I will explore what AI and ML are, where they came from, how they are being used for talent selection, and what ethical and practical considerations about AI that hiring teams should consider when they look to the future.

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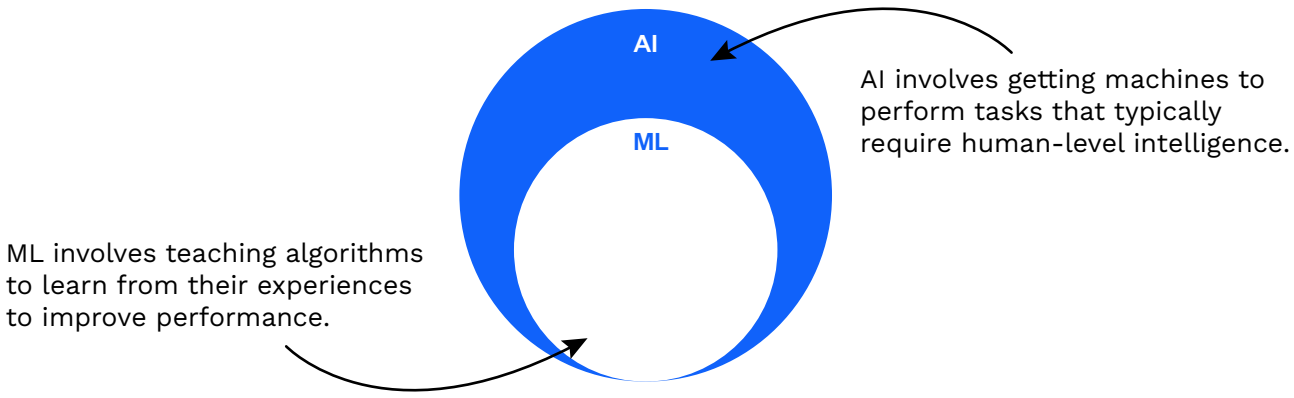
Defining AI and ML

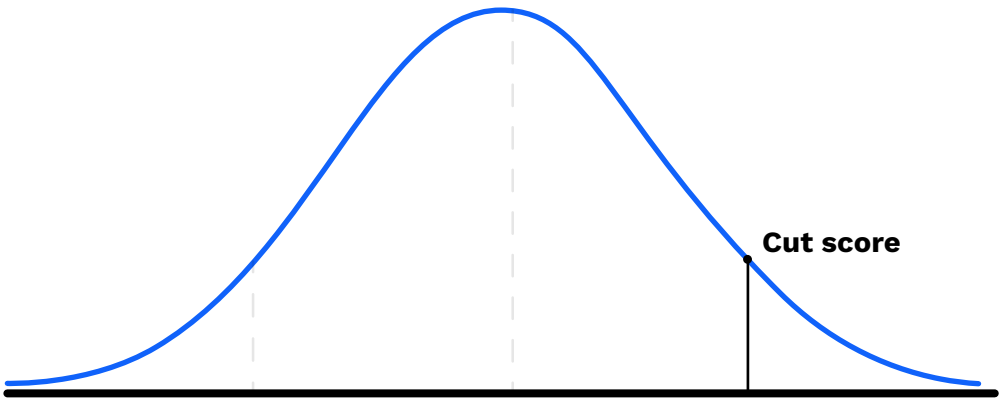
With the media frenzy surrounding innovations like ChatGPT, it may seem like AI is a new phenomenon. In fact, AI isn't a very new development at all. The phrase "artificial intelligence" was coined nearly 70 years ago by Stanford Professor John McCarthy. [1]

While most people think of AI and ML as the same technology, it is crucial to differentiate them. AI is a broader domain of getting machines to perform tasks that typically require human-level intelligence, such as operating a motor vehicle. ML, on the other hand, is the subset of AI that involves teaching algorithms to learn from their experiences to improve performance.



Early uses of AI and ML in talent selection

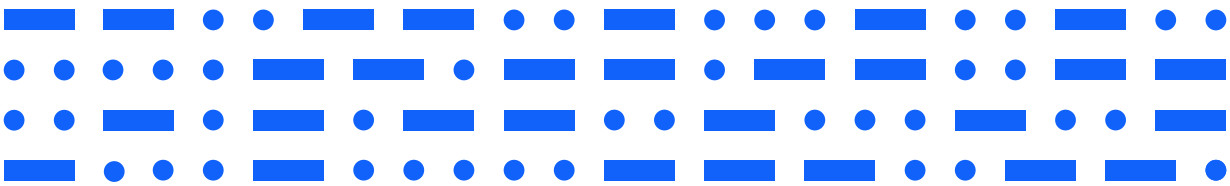
Both AI and ML have a long history of being used in a talent selection context. Take the example of **cut scores**: this is the score on a pre-hire assessment that a candidate must meet to advance to the next stage of the selection process.



While cut scores aren't nearly as complex as the AI we see today, they can still be considered an early use of AI in selection. After all, the act of automatically passing applicants to the next stage if they achieve a specific score is a rule-based system that replicates human decision-making—and that is AI!

Now let's consider machine learning (ML). One example of ML that has long been used in selection is **linear regression**. Linear regression is a mathematical tool, foundational to ML, that uses data to explain and predict the relationship between variables. In the context of selection, linear regression can be used to find the best combination of predictors for understanding how well an applicant may perform in a specific role if hired, thus affecting whether or not they receive offers. This analysis can then be used to optimize the hiring process and improve hiring teams' ability to predict which candidates are most likely to be a good fit.

For both AI and ML, as the quantity of data available reaches unprecedented levels and technology continually improves, our understanding of AI is evolving to include advanced applications and techniques that McCarthy could only have dreamed about.

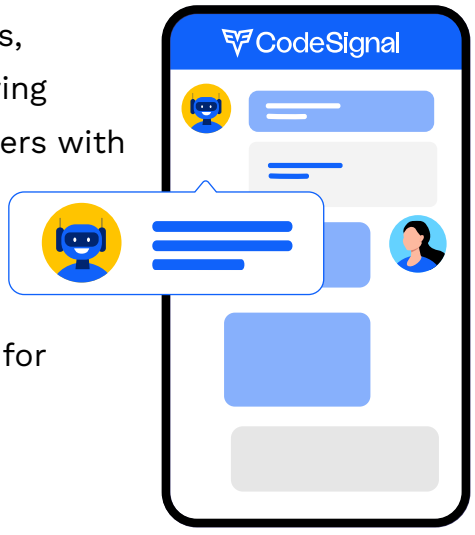


Modern AI and ML applications in hiring

Artificial Intelligence (AI) and Machine Learning (ML) are transforming many areas of business, and hiring is no exception. Here is a closer look at the ways AI and ML are currently used in selection:

- **Applicant Tracking Systems (ATS):** An ATS is a software tool that helps manage the recruitment process and is one of the digital workhorses of recruitment. Many of these systems now leverage AI and ML to enhance their functionality and improve their capabilities. For example, an ATS might use AI to rank candidates based on their suitability for a job.

- **Chatbots:** AI-powered chatbots automate initial interactions with applicants, answering their questions, gathering information, and assisting recruiters with tasks like scheduling interviews and sending follow-up emails. This improves the candidate experience while freeing up time for human recruiters.



- **Diversity and inclusion:** AI helps organizations improve diversity and inclusion in their hiring processes by minimizing unconscious bias. For instance, AI may anonymize resumes by removing names and other demographic information, helping to ensure that candidates are evaluated solely on their skills and experience.

  Similarly, natural language processing (NLP; a subset of ML and AI) can be used to analyze job postings, emails, and other business communications to reduce bias in recruiting practices by optimizing these communications with accessible and inclusive language.

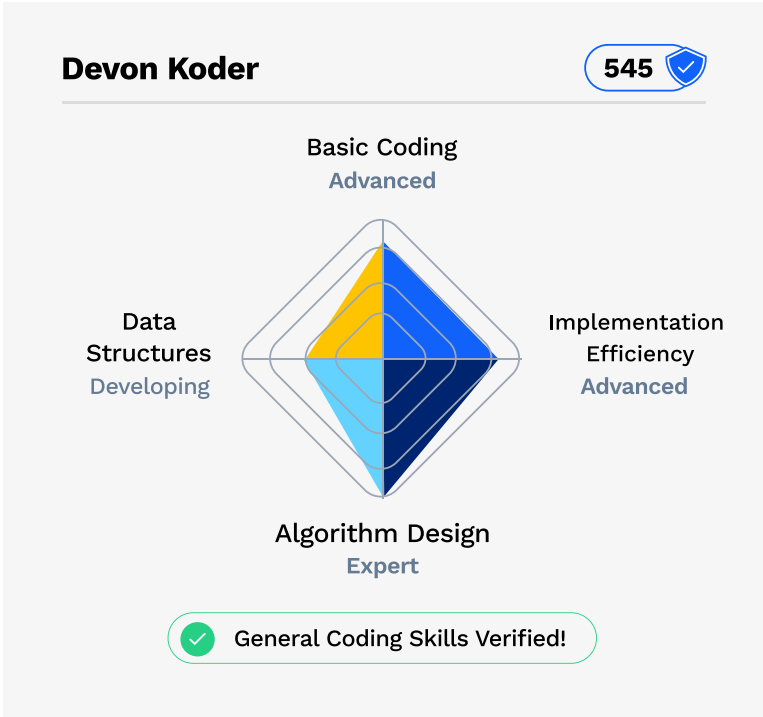
- **Onboarding:** Once a candidate is hired, AI helps with the onboarding process. For instance, paired with human communication, a chatbot may guide a new hire through their initial training, or a recommendation engine could suggest resources to help them get up to speed.

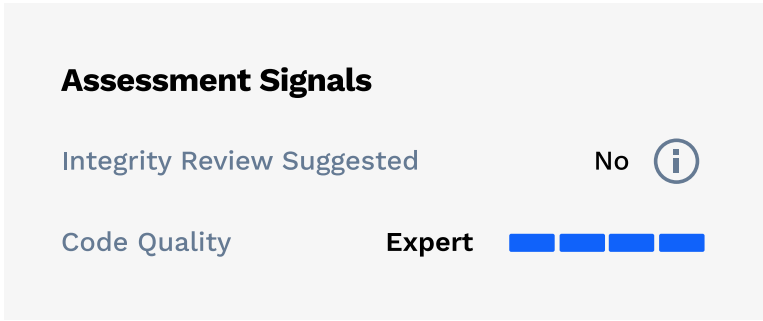
- **Predictive analytics:** ML algorithms can analyze historical hiring data to identify patterns and predict future hiring outcomes. Predictive analytics is often combined with other AI and ML applications, such as predicting how likely a candidate is to accept a job offer within an ATS. This can help companies make data-driven decisions about who to hire and where to source candidates to meet organizational goals.

- **Resume screening:** AI can automate the process of screening resumes, which is often the most time-consuming part of recruitment. Algorithms quickly sift through hundreds or even thousands of resumes, looking for keywords or phrases that match the job description.

- **Video interviews:** For better or worse, AI can also be used to analyze video interviews. Algorithms can evaluate a candidate's word choice, speech patterns, and even non-verbal cues, such as facial expressions or body language.

- **Skills evaluation:** AI helps create and administer assessments to evaluate a candidate's skills or knowledge. For example, AI can be used to evaluate a programmer's coding skills or a salesperson's communication abilities.





Looking ahead with awareness

While these technologies can be very powerful, it's important to remember AI and ML systems are tools that also have limitations and potential downsides. Organizations who use AI and ML in their selection process should be mindful to keep their focus on identifying qualified candidates, and not just using these tools for their novelty. Here are a few of the risks that organizations should keep in mind when using AI and ML in a selection context:

- **Bias in AI systems:** Bias is the most significant and widely-discussed risk. If the data used to train the AI or ML system contain bias, the system will perpetuate bias. If a system is trained on historical hiring data, the system may favor a specific demographic group, leading to discrimination and unfair hiring practices.

- **Transparency and interpretability:** ML algorithms, particularly complex ones like deep learning models, are often called "black boxes" because it can be challenging to understand precisely how they make their decisions. This can make it difficult to justify hiring decisions made by ML, potentially leading to legal issues.

- **Privacy concerns:** AI and ML systems used in hiring often need to process sensitive personal data, such as applicants' resumes, interview responses, and assessment results. Significant privacy concerns are associated with collecting, storing, and processing such data. Organizations must ensure they comply with all relevant privacy laws and regulations.

- **Depersonalization of the hiring process:** While AI and ML can automate many aspects of hiring, there is a risk that the process becomes too impersonal. Candidates may feel uncomfortable or undervalued if their first interaction with a company is with a chatbot or an algorithm that screens their resume.

- **Misuse of AI predictions:** ML can predict potential hiring outcomes based on past data, but these predictions are probabilistic and not certain. Misuse or over-reliance on these predictions without understanding their limitations can lead to bad hiring decisions.

- **Inaccurate insights:** AI and ML require a good deal of high-quality data that is representative of the target population to produce valid and reliable insights. If the data used to train or develop an AI or ML system are not representative of the intended use case, then any insights generated by the system are likely inaccurate.

Companies need to consider these risks and implement proper safeguards, such as regular audits of AI and ML systems, transparency in AI and ML decision-making, strict data privacy protocols, and maintaining a balance between automated and human-led processes in their hiring practices.

The AI advantage

The future of using AI and ML for hiring holds immense promise as long as we have the proper safeguards in place. These technologies are rapidly transforming how organizations attract, evaluate, and select talent, heralding a new era of efficiency and precision in recruitment.

With the ability to process vast amounts of data at unprecedented speeds, AI and ML tools can help identify the best candidates for a role in a fraction of the time it would take a human recruiter. Furthermore, they can reduce unconscious bias, creating a more equitable hiring process and promoting diversity and inclusion in the workforce. In addition, AI and ML can empower candidates with individualized training and onboarding experiences, allowing them to maximize their potential from the onset.

As these technologies continue to evolve, they will undoubtedly unlock new possibilities and set new standards in talent acquisition, shaping the future of hiring in exciting ways.

References

1. Russel, S. j., & Norvig, J. P. (2021). The History of Artificial Intelligence. In Artificial Intelligence: A modern approach (4th ed.). Pearson.

2. OpenAI. (2023). ChatGPT (Version 4) [Computer software]. OpenAI. https://chat.openai.com/

Author’s note

This article is written by Nathan Hundley, Ph.D., a Senior Assessment Research Manager at CodeSignal’s Skills Evaluation Lab. Beginning his career in the assessment industry in 2016, Dr. Hundley has worked to advance our understanding of evaluation processes. His innovative methodologies have significantly shaped the assessment mechanisms at CodeSignal.

In a delightful twist of irony, this article about artificial intelligence and machine learning is crafted, at least in part, by the very marvels of AI it discusses. [2]