



THE JOBS IN HR THAT ARE AT RISK OF AUTOMATION (AND THOSE THAT AREN'T)

What a Paradox Can Teach Us About Artificial Intelligence at Work

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Did you know my three year old is smarter than some artificial intelligence systems?

No, she can't do advanced statistics or calculations, but she can identify faces, respond to questions, and pick up objects without any help. And in that small, personal example, we see the opportunity to mix the best that AI has to offer with the best humans have to offer.

Artificial intelligence often brings to mind images of robots, nefarious algorithms, and far-reaching, intelligent systems. So far, however, the development of AI has been a different story. Researchers even back in the 1980s realized the vast problem of teaching a machine to think, learn, and act like a human. A critical concept that helps to illustrate the value (and challenge) of AI is Moravec's Paradox.

Hans Moravec and other AI researchers learned that there are essentially two types of tasks, ones that humans can easily do and ones that humans can't. What's intriguing is that the ones we often have trouble with (calculus equations, examining large data sets, seeing patterns) are actually fairly easy to program into an algorithm, and at the same time the things that come naturally to humans (creativity, collaboration, compassion) are very hard to program into a machine.

There's also evidence that we should not try to "cross the streams," because we sacrifice results and the benefits of each approach. Which would be

better suited to the following tasks, a human or an algorithm?

- *Analyzing 2,000 rows of payroll data for exceptions and errors*
- *Working with an employee who is under stress due to caregiving needs*
- *Scanning employee survey results for emotions and trends*
- *Interacting with leaders to develop their emotional intelligence*

When we lay those out, you can clearly see which ones are better suited to humans and which are not. Therein lies the real value of artificial intelligence: AI allows us to make work more human by stripping away those tasks that are fairly robotic anyway.

The goal of this report is to shed some light on how AI works, how it can be practically applied to the field of human resources, and how it can support, not replace, HR professionals in their daily work.

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Machine Learning: How It Works and Why We Need It at Work

Artificial intelligence today is typically driven by machine learning, or the practice of teaching algorithms to learn from different signals and make predictions based on that data. Let's look at a personal example.

If I logged into your favorite video streaming service, what genre would I see? Romantic comedy? Horror? Action? Something else?

My dashboard would show thrillers, courtroom dramas, and post apocalyptic science fiction. What's interesting, though, is that when we both started using one of those services, the recommendation algorithm was exactly the same. However, over time, it starts to tailor the content we see based on what we watch, what we quit watching after five minutes, what we upvote or downvote, what other similar users are watching, and so on.

This is an example of machine learning in action. The system learns about each user on a personal level through dozens or hundreds of tiny behavioral signals and tailors the content to them based on their own unique preferences.

Now that we have an awareness of machine learning (sometimes referred to as ML), how might it be leveraged for workplace applications?

Think about it this way: where in the employment process do we have so much data that would be difficult for a human to scan/sift through and determine a credible, unbiased path forward? Or, to put it in a different way, where do we have an intense volume of data and a high cost of an incorrect decision? Either of those scenarios points to a use case for AI in HR.



HIRING: looking at resume data for objective skills and experience data to match against a job description instead of being swayed by education, location, or other irrelevant factors

LEARNING: combining career aspirations, training similar employees have taken, skills gaps an employee has in their current role, and other relevant factors to recommend training that fits each individual employee's unique needs

ENGAGEMENT: scouring employee survey data for trends in demographic groups, functional departments, or other specific segments of the employee population and surfacing the issues faced by those groups for action by the HR team

One thing that's critical to point out here is that a human still needs to be in the loop on every one of these decisions. *We're not handing off hiring or engagement to an algorithm—we are leveraging the power of data to enable better decisions by and for the humans that do the work.*



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Algorithmic Bias: What It Is And Why We Need To Watch For It



By now you see that we have the opportunity to automate some of those HR tasks that we don't enjoy (analyzing survey data, reviewing resumes, etc.) so we can turn our attention to those that need a human touch. However, we can't just leave algorithms to run wild. We have all heard the term "bias" when it comes to AI, but what is it and how does it happen?

Think about it this way: AI is no smarter than a toddler when it is being trained. If we tell an algorithm that the sky is purple enough times, it will believe the sky is purple. If we tell an algorithm that a certain demographic is less qualified, the algorithm will believe that stereotype, even if it's wholly inaccurate.

That second example is very real. An enterprise firm developed an internal algorithm that looked at historical hiring data to make predictions on which resumes might make good hires. In the past, the firm had hired and promoted primarily men, so the algorithm downgraded women as if they were less qualified. Why? *Because the data set the algorithm was trained on seemed to indicate that women were less desirable from a hiring perspective.* We all know that someone's gender does not change their qualifications, but algorithms don't know that.

One solution to this issue is transparency. Technology firms developing algorithms that make decisions about other humans need to have transparency into what factors and signals are part of the equation.

We as HR leaders do not have to be experts in machine learning or programming to understand bias. We just need to rely on our human resources training. HR professionals are bias experts, and bias has the same result whether it's human-based or machine-based.

- *For instance, if an algorithm uses someone's voice to predict their performance, how do we know it isn't negatively rating someone who isn't a native speaker (even if they are perfectly qualified)?*
- *If machine learning is ranking someone's college, it may downplay someone graduating from a historically black college or university.*
- *If the system examines someone's name to make a prediction on their suitability, it may trigger a bias against a certain group.*

We understand this because we are in charge of applying these principles inside the business when it comes to hiring, development, and equitable treatment for all. That expertise comes in handy on the algorithmic side as well. We need to ensure a piece of software isn't considering things that are off limits just like we do when we are supporting internal decisions on a case-by-case basis.

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Augmenting Humans With AI For Optimal Results

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Our research shows that when automation occurs at any time across history, specific human skills rise to the top after the wave of automation passes by. Remember Moravec's Paradox, the concept that humans and algorithms shouldn't be treading into each other's territory? This is where it really comes into play.

Machines are never going to have what we call the **Core Human Skills of Work**.

- *Creativity: dreaming up new ideas and concepts*
- *Curiosity: asking questions and challenging the status quo*
- *Compassion: caring for others and considering their needs*
- *Collaboration: working alongside others, brainstorming and supporting each other*
- *Critical thinking: tackling problems from other perspectives, applying knowledge to new situations*

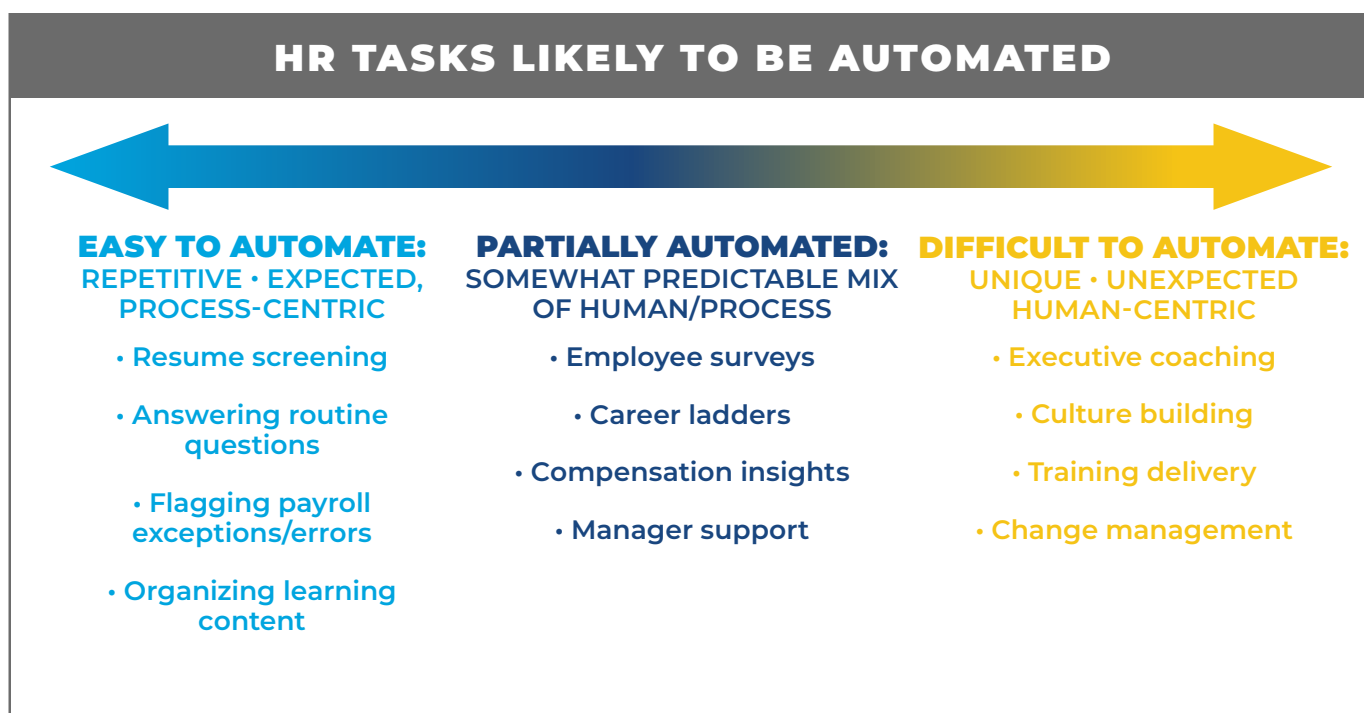
At the same time, humans are never going to have the raw computational power and analytical capacity of a computer. And that's okay.

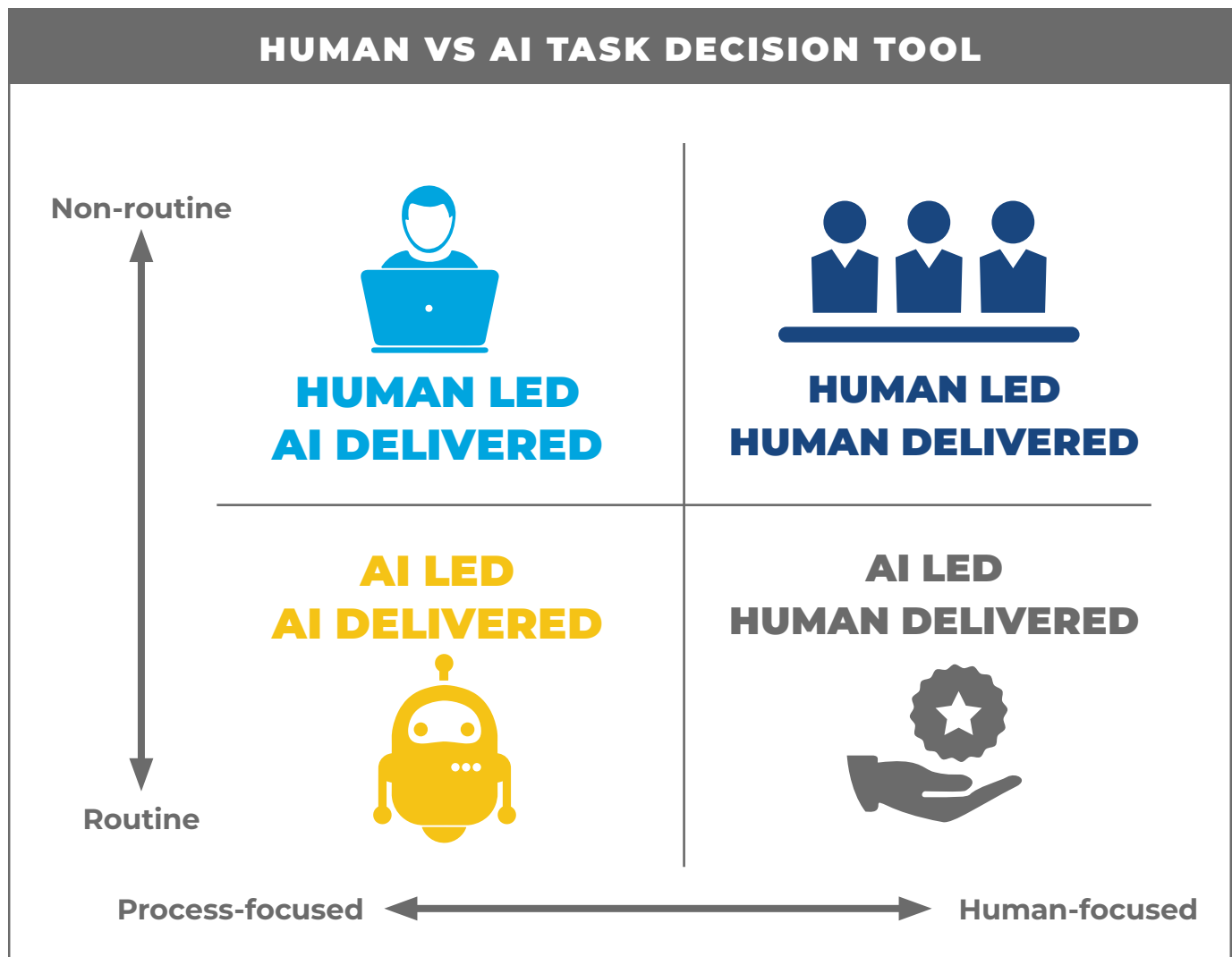
If we allow the technologies to handle the processing and prediction, humans can follow up with targeted action. Try this experiment: if you could give away something on your to-do list to an algorithm, what would it be?

In doing this exercise dozens of times with HR leaders, the most common responses are email, calendaring, reconciling data, running reports, and other similar tasks. The theme among them all? They are fairly robotic and do not engage our most creative selves.

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The point here is if we are able to hand off some of those more robotic tasks, we then have time to focus on actions that create new value for the business and leverage our core human skills, such as compassion or curiosity. The boundaries for these decisions are routine (how repetitive is the task in question) and focus (human or process oriented), as the graphic below illustrates.





KEY TAKEAWAYS

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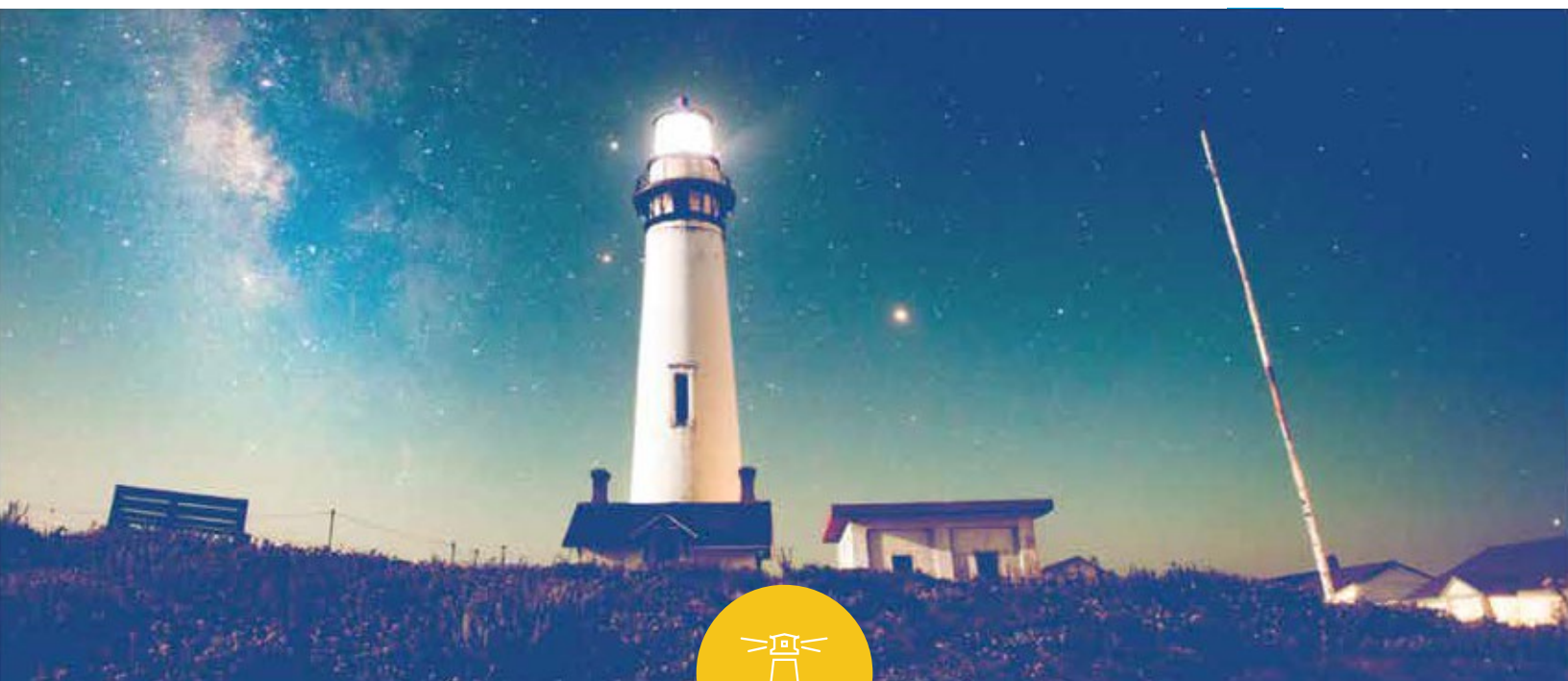
AI is great at certain tasks, like data analysis, but it's not as great at others. We should embrace AI for those uses that allow us to leverage its computing power to make better and more data-driven decisions as an HR function.

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Bias is a weakness of algorithms. HR leaders must be aware of the signals being considered by any algorithm and be able to highlight when the system crosses the boundary into factors or qualities it should not be examining.

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The future of work is more human and more personal, not in spite of technology, but because of it. AI can highlight areas and opportunities to engage and support the workforce, but it's up to HR leaders to take action and lead the charge.



About Us

Lighthouse Research & Advisory is a modern analyst firm dedicated to setting the standard for excellence in talent, learning, and HR. By providing compelling research and actionable insights for business leaders, our team's mission is to navigate the rapidly changing field of human capital management to support today's talent and learning functions. From establishing frameworks and defining competitive practices to illuminating the ROI of the employee experience, our goal is to chart a new course for talent. Ben Eubanks is the Chief Research Officer at Lighthouse, providing insights for today's talent leaders and vendor partners.

Prior to joining Lighthouse, Ben worked as a research analyst for Brandon Hall Group, focusing on learning, talent acquisition, and talent management. During his tenure, he published more than 100 pieces of research and provided advisory services to executives from some of the largest and most respected organizations in the world. He also has hands-on experience working as an HR executive, leading both strategic and tactical talent practices. Ben is the host of We're Only Human, a podcast focused on the intersection of people, technology, and the workplace. In addition, he runs upstartHR.com, a website serving HR leaders that has reached more than 1,000,000 readers since its inception.