GENERAL ASSEMBLY

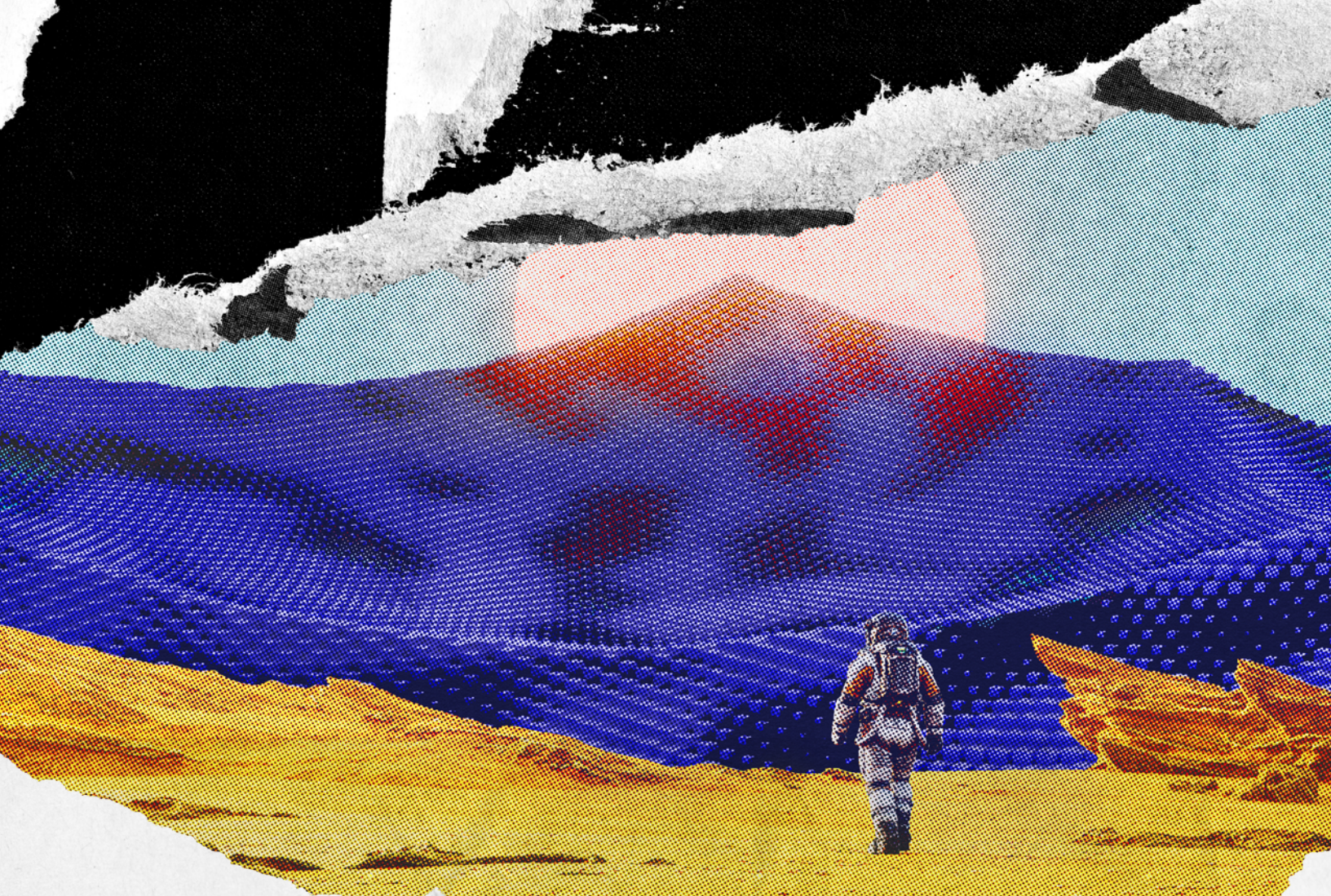# The State of Tech Talent

2025

Global Perspectives From HR Professionals on the Future of AI and Talent Development

Contents

Foreword

AUTHOR: DANIELE GRASSI,
CEO, GENERAL ASSEMBLY

Companies around the globe have been trying for years—and without much success—to close tech talent gaps.

Today's enormous demand for talent with artificial intelligence skills has made this task even more daunting. It's no exaggeration to say that companies are facing an AI skills crisis.

The AI boom has caused demand to soar for employees with the right skill sets not only in AI-focused roles but across entire organizations. Since 2016, according to the **2024 Work Trend Index Annual Report** from Microsoft and LinkedIn, company leaders have increased hiring of AI talent by more than 300%. Yet Thomson Reuters **estimates** that companies worldwide are only able to hire about half of the AI talent they're seeking.

As companies rethink their strategies for recruiting, developing, and retaining talent to meet this new reality, AI is transforming the workplace. The AI revolution is poised to both create and eliminate jobs and make profound changes to how people work. The potential human and economic toll of this transformation cannot be overstated.

To move forward, we need to build an AI economy that uplifts everyone—employees and companies alike. That requires upskilling and reskilling employees for an AI-powered future of work and building more sustainable entry-level pathways into technical careers. While companies have historically leaned on diversity, equity, and inclusion programs to expand the pool of available talent, these programs often failed to deliver meaningful results. The future will require a much more holistic approach to removing barriers to entry to the tech workforce. Discovering and developing new sources of qualified talent are critical to the AI economy because the existing tech talent pool is simply not wide or deep enough to satisfy current needs, much less future demands.

So what does that mean for companies? It means embracing skills-based hiring by looking beyond degrees and the same shallow pool of college and university computer science programs. It means reaching into historically untapped talent pools and seeking individuals with AI skills and aptitudes or the eagerness and ability to develop them. It means joining forces with organizations that can help companies source tech talent and prepare them for the jobs of today and tomorrow. Hiring nontraditional talent is about far more than achieving diversity goals. These are high-potential candidates who cost less to recruit and retain and have the hunger to learn and update their skills.

In the race to secure AI talent, companies not wanting to be left behind are scrambling to find it—but without long-term plans on how to deploy it. By reacting to immediate needs rather than drawing a roadmap for the future, companies risk repeating the same mistakes they made during the digital transformation era of the 2010s. The companies that embrace a new and deliberate approach to talent recruitment and development will be the ones best-prepared to compete—and win—in our AI future.

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Introduction:

AI on the Ascent

The rapid ascension of AI is putting immense pressure on businesses to source talent with AI skills—and organizations find themselves at risk of moving too fast.

Nearly three-quarters (72%) of executives and managers say their organizations are using AI in at least one business function—up more than 20 points in just two years, a **McKinsey survey** found. GenAI use nearly doubled in one year, with almost two-thirds (65%) of respondents now saying they've adopted this emerging technology in at least one core element of their business. In addition, half of organizations now use AI for at least two key business functions, up from a third just one year earlier. Because AI is bleeding into finance, sales, marketing, HR, and other positions that aren't traditionally considered tech roles, there's an urgent need for all employees to possess technical know-how if they and their organizations want to remain ahead of the pack.

"AI moves fast," said Chiara Di Sclafani, Talent Leader with MINT. "It's not only important for people leaders to try to introduce AI. It's also important to continuously improve the efforts to introduce and implement AI—and to be sure you're always up to date on AI tech and trends. You can't just implement and walk away. You always need to be updating AI plans and efforts."

It will be as important as ever for employers to both consider a broad pool of external talent to fill open roles and invest to build skills across their full existing workforce.

Yet most organizations face critical gaps in AI training, awareness of usage policies, and overall AI knowledge that could negatively impact a company's competitiveness over the short and long term, General Assembly's **new survey** of US and UK business leaders revealed. In addition, another General Assembly **survey** found that many existing executives and employees believe today's entry-level hires are unprepared for the demands of the modern workforce. Clearly, current hiring strategies and training models aren't up to the task.

As documented in "The State of Tech Talent 2025," AI continues to be the star of the firmament. The demand for skilled AI talent continues to fly high as tech talent leaders urgently seek to hire individuals with AI aptitudes throughout their organizations, not just in their tech-focused units. Because accelerating technology and demand have launched a new war for talent, most organizations are waging it by spending whatever it costs to satisfy these immediate needs. What's troubling is that many organizations followed a similar trajectory during the digital transformation era. They focused on the technology at the expense of the people needed to develop and manage it. Their failure to map out a long-term strategy to hire, train, and deploy the right people continues to cost them.

A lesson that organizations can take away from the digital transformation era is this: Traditional talent pools aren't particularly deep. The companies that will come out ahead in the battle for AI talent are the ones that build sustainable pipelines to multiple sources that provide access to high-quality talent. Whether organizations prioritize skills over traditional credentials, tap into nontraditional populations, or

upskill and reskill their existing workforce, they must explore new corners of the universe to discover and develop new sources of AI talent.

"Talent is universal, but opportunity is not," said Hannah Calhoon, Vice President of AI for Indeed. "With a rising demand for AI skills but a limited supply of deep experts, it will be as important as ever for employers to both consider a broad pool of external talent to fill open roles and invest to build skills across their full existing workforce."

To assist tech talent leaders in understanding the vast opportunities in our AI-powered universe, General Assembly teamed up with Wakefield Research to survey 500 senior HR professionals who hire for software engineering, data analytics, data science, and UX roles in the United States, the United Kingdom, and Singapore. The State of Tech Talent Report, now in its third year, identifies AI hiring trends and reveals how talent leaders are addressing tech talent shortages. The 2025 edition also provides a glimpse into how HR professionals are grappling with the potential downstream impacts of curtailing efforts to hire from diverse talent pools. This report also includes recommendations for building and expanding new talent pipelines.

Methodology: General Assembly surveyed 500 HR professionals with a minimum seniority of manager who work in talent acquisition at companies hiring technology talent in the US, UK, and Singapore from October 16 to 28, 2024

Key Findings

HR professionals are scrambling to find AI talent. They're turning over every proverbial stone to find qualified candidates with the right tech skills, and they're paying almost any price to secure it.

In fact, organizations are moving so rapidly to hire new employees with AI skills that they're not taking the time to build sustainable pipelines that can produce the talent they'll need in the future.

Sound familiar? In this new AI age, companies are reacting to immediate needs rather than planning for the long term—which is the exact same mistake they made during digital transformation. It's clear that organizations have made it a top priority to source AI talent that can give them a competitive edge in developing and mastering this transformative technology. At the same time, HR professionals are concerned that de-emphasizing inclusion efforts will restrict access to talent.

Demand for AI Skills is Flying High

Moving too fast?

75% **say their company** is hiring AI talent without taking the time to build sustainable pipelines of qualified and high-potential candidates. This is particularly true at organizations that are scaling back or eliminating DEI initiatives (84%).

Persistent talent gaps.
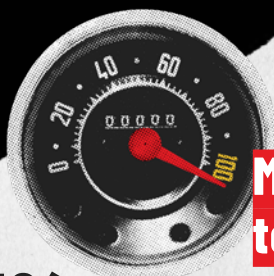
63% **of hiring leaders** say it's more challenging to source candidates with adequate AI skills versus those considered for other tech roles. Closing this talent gap is proving more difficult in the US, with nearly one in five (18%) hiring professionals in the US saying it's "significantly more challenging" to source AI-skilled candidates, compared to 9% in the UK.

AI skills in non-AI jobs.

99% **of HR professionals** at companies that use AI reported increases in requests to add AI skills to job requirements for non-AI focused roles—up from 96% from the prior year. More than a third (35%) of US hiring managers say they noticed a significant increase.

Putting the "AI" in paid.

Job candidates with AI skills can just about name their own price. At organizations using AI,

94% **of HR professionals** say candidates with this skillset ask for higher salaries than those seeking other tech roles. Nearly three-quarters (68%) of employers agree to these requests—up from 64% a year ago—with larger US companies more readily paying for AI skills. Almost eight in 10 (78%) of US firms with 2,500 or more employees generally agree to higher salaries, while fewer than two-thirds (64%) of smaller companies accede to these compensation requests.

Ethical AI.

98% **of respondents** say their organizations provide staff training on AI, but instruction on ethical use of AI isn't nearly as widespread. Just over a third (36%) say their employees receive training specifically on the ethical use of AI, while 39% say ethics are a smaller portion of larger AI training.

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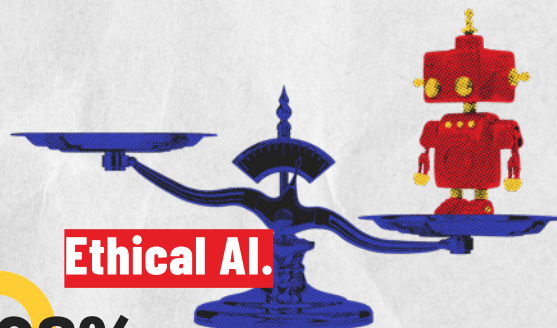
Securing Skilled Talent

Seeking other signals.

18% of HR professionals are increasingly likely to look first at certifications and non-degree education, when hiring for remote software engineering, data analytics, data science, and UX design roles—a number that has tripled in just two years. Slightly more than half (53%) consider a candidate's college degree first.

Soft skills in high demand.

95% of respondents say it's harder now than it was three years ago to source candidates with both the technical and soft skills needed to succeed. In the US, hiring leaders say candidates with the right communication (39%), problem-solving (37%), and teamwork (37%) skills are hardest to find. In the UK, it's time management (40%), problem-solving (39%), and flexibility (38%). While in Singapore, it's an openness to learning (43%), time management (40%), and flexibility (39%).
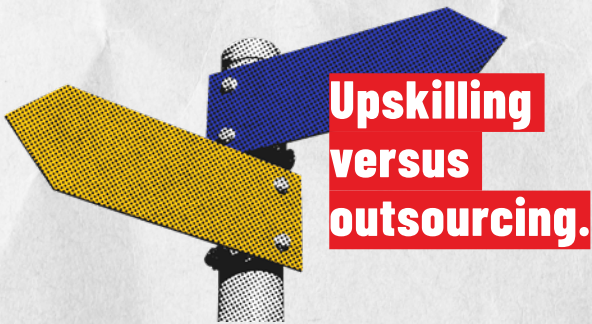
Upskilling versus outsourcing.

When organizations need tech help, HR professionals say they're **more likely to hire new employees**

41% in 2024 VERSUS **37%** in 2023

and less likely to hire freelancers (18%) or outsource work (14%). The share of organizations upskilling existing employees remained steady at 27%. There are wide differences here among countries: UK companies are much more likely to find needed skills by hiring new employees (52%, versus 37% in the US and 29% in Singapore) rather than turning to freelancers (9%, compared to 22% in Singapore and 19% in the US).

THE STATE OF TECH TALENT 2025

Old-school tactics to land a new job.

How can job candidates stand out in a crowd? According to HR professionals, old-fashioned tactics can help, such as:

42%
getting a personal recommendation from someone in the company

36%
making a phone call

35%
sending a handwritten letter

Digital approaches can command attention, as simple as:

43%
sending a follow-up email

41%
making a social media post demonstrating skills

38%
compiling a video resume

US (43%) and UK (47%) hiring managers prefer follow-up emails. In Singapore, 53% of HR professionals want to see a recommendation from a current company employee.

The Future of DEI

DEI on the decline.

24% **of the human resources professionals** surveyed say their companies have scaled back or eliminated their focus on diversity, equity, and inclusion in tech hiring over the past year. Among those companies, 39% say board and company leaders curtailed those efforts. At 36% of companies, employees pushed back. Hiring leaders at a quarter of companies (25%) say these initiatives were deprioritized or cut entirely because they were deemed ineffective or unnecessary.

Residual ramifications.

Hiring leaders are worried about the downstream effects of not increasing their commitment to diversity in hiring. **Their primary concerns are that it will:**

50%
raise costs per hire

48%
generate higher employee turnover

45%
cause more candidates to see a company as a less desirable place to work

Taken together, these concerns could increase the number of open positions and make roles more difficult—and more expensive—to fill.

The link between DEI and AI.

Diversity and equity initiatives might get a boost as companies adopt AI more widely. Among organizations that use AI, 61% say the increased focus on AI skills has heightened the need for inclusion in hiring.

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Recommendations

Since 2011, General Assembly has partnered with hundreds of top companies to provide solutions to their tech industry supply and demand issues and helped more than 100,000 of our global alumni launch careers in tech.

Now more than ever, HR professionals are seeking insights into how companies and leaders can approach tech talent going forward. They want to know how they can optimize their efforts to source, hire, and develop high-quality and sustainable talent while remaining in compliance with shifting regulations.

The following recommendations can help talent leaders and their organizations prepare for an AI-first future and more nimbly navigate a highly competitive universe where talent remains scarce and the demand for AI skills is soaring.

Shift to skills-based hiring

A four-year college degree is no longer a reliable proxy for specific tech skills, whether for AI or other roles.

Not only do degree requirements lock out many qualified candidates—especially those who've gained critical AI and tech skills and experience on the job—they limit the candidate pools that companies can draw from.

"From our perspective, the importance of a college degree alone has gone down," said Chiara Di Sclafani, Talent Leader with MINT. "A degree can be important, but experience and potential needs to be part of the evaluation of a potential candidate. We're in a world where things change quickly, so it's important to also focus on 'continuous curiosity.' We recognize self-development training, bootcamps, and other learning options as critical to the continuous curiosity process."

Organizations want candidates with the skills to be successful. Focusing on specific skills, qualifications, and potential of candidates creates a fairer and more inclusive process that can make it easier for companies to find high-potential talent and organically diversify their workforce.

"Technology is advancing so rapidly that entirely new roles and functions are emerging every day. Oftentimes, the jobs that candidates are applying for are ones that did not even exist while they were in school getting their education. This makes it easy to overlook the person behind the résumé if you're only scanning for the same few credentials," said Todd Weneck, Vice President of Technology at LHH Recruitment Solutions. "Skills-based hiring flips that script by asking, 'Can this individual solve a real-world problem, learn on the fly, and keep growing as technology evolves?' We've found that focusing on these deeper, more human qualities naturally opens your pipeline and uncovers hidden gems who can truly innovate even as the landscape changes."

Recruit nontraditional talent

By eliminating outdated degree requirements and recruiting for specific skills and aptitudes, organizations can gain access to vaster talent pools.

An estimated 70 million American workers lack a four-year degree but have gained valuable skills and experience—including in tech and AI—at community college and in non-degree programs, in the military, and through on-the-job training. Nontraditional talent in other nations have often followed similar career paths.

In the US, nontraditional talent that reflects the country's racial, ethnic, and cultural diversity can be found in numerous places. Community-based workforce development programs funded by the federal Workforce Innovation and Opportunity Act (WIOA) often attract large numbers of qualified talent from underrepresented backgrounds. Hire-train-deploy models that equip job candidates with specific skills and platforms can provide direct access to new talent pools that traditional hiring strategies often overlook. Corporate partnerships with postsecondary institutions and investments in tech industry apprenticeships also hold tremendous potential to produce high-quality talent for high-demand roles.

Grow your own talent

Upskilling and reskilling current employees can provide an in-house solution to tech talent shortages.

Many employees welcome such opportunities, as numerous workplace surveys have found that workers seeking career advancement and fulfillment want to be part of a culture of continuous education and improvement.

"For businesses struggling with the shift to new talent strategies, the solution is often to stop thinking just about hiring—and start looking inward," said Ebony Thomas, managing partner at Grads of Life. "Internal mobility can often be the most effective place to test out new approaches to talent development, from skills-first advancement to training and upskilling for incumbent workers."

Upskilling is the key. Because companies want AI talent throughout their organizations, tech talent leaders must rethink and expand their AI training efforts to reach all employees.

"Over time, AI has evolved into a more ubiquitous skill that we need to develop at the leadership level, the middle management level, and the specialist level—from the Ph.D. experts building and training the models right through to the technologists who need to understand the potential and the impact of applying AI in whatever form," said Erin Muir, Vice President of HR, Technology, and Operations for the Royal Bank of Canada.

"Now, we're continuing to expand to the broad population. We're engaging in several different layers and levels of training, like online learning opportunities and alternative pathways, with opportunities for the layperson, the technologist, and the leader with differing levels of intervention. We're also focusing on more speaker circuits, internal podcasts, and town halls so that we have our AI experts out there with their business lead partners, whether that be in the call center, with our credit team, or elsewhere. We want to encourage everyone to think about AI in their own world, whether that's productivity assistance, simplification assistance, or automation. That means continuing education in that broader sense, as well as specific tech skill training."

Conclusion

AI is here to stay. Now that organizations are investing in AI algorithms, the technology to make it function, and the people to manage it all, the next step will be to generate a positive return on investment.

Companies of all kinds aren't just shooting for the moon. They're trying to land there ahead of the competition.

So how can they dodge interspace obstacles and steer their way clear to a successful AI future? Sufficient talent with requisite AI skills will remain scarce for the foreseeable future, and the demand for AI competencies will only continue to grow. Future-forward companies know that they must start now to build an AI-enabled workforce that will help them meet their needs not just today, but tomorrow. Future success in securing and creating the right workforce with the right AI skills depends not only on building sustainable talent pipelines, but also on discovering and developing nontraditional sources of tech talent.

Whether recruiting from new talent pools, upskilling and reskilling their current workforce, or seeking support from external partners to help meet their AI talent needs, we hope this report provides the data, perspective, and recommendations to help HR leaders rethink and reconfigure how they acquire AI talent today—and for the long term.

Help your team play at their peak

Make it real →

About General Assembly

We're the leading talent and upskilling community, here to help people and businesses get the real skills they need to succeed in this fast-changing tech era. For over a decade, we've been making jobs in tech accessible to anyone and answering the talent demands of companies seeking quality, diverse candidates. Now that every job is a tech job, we've evolved into a center of excellence for training people from all backgrounds to upgrade their practical tech skills for every company and in any role.

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