# AI reshapes entry-level jobs, but apprenticeships offer path forward



Artificial intelligence is accelerating change in the labour market, with the sharpest effects felt at the entry level. A Stanford University study found a 13 per cent fall in junior job listings over three years in roles most exposed to AI, disproportionately affecting younger workers. Research from Oxford Economics and Burning Glass Institute points to similar declines across customer service, accounting and administrative support.

AI is increasingly absorbing routine tasks once central to early-career jobs. That shift is leaving new graduates struggling to find footholds. A recent *Wall Street Journal* analysis showed higher unemployment among recent graduates compared to national averages, underscoring what Wharton’s Peter Cappelli calls the “experience trap”: employers demand skills and experience but provide fewer opportunities to gain them.

Yet AI’s rise is not only displacing tasks—it is also augmenting workers’ capabilities. A Gallup and Walton Family Foundation poll found teachers using AI tools saved time and improved lesson planning, while MIT economist David Autor describes AI as a “worker complementary technology” that helps people without advanced education take on more sophisticated work. This could democratise expertise, widening access to higher-value roles in healthcare, education and design.

The impact is spreading beyond junior levels. Industry data shows mid-level roles are increasingly exposed, adding urgency to reskilling and upskilling initiatives. Some employers are already redesigning entry-level roles to emphasise creativity and problem-solving, while others are expanding internships and apprenticeships to integrate learning with practical experience.

Apprenticeships in particular are being championed as a solution. By combining paid employment with skill development and mentorship, they offer a pathway to transform inexperience into expertise. Advocates such as Ryan Craig argue apprenticeships can rebuild career ladders for people from all socio-economic backgrounds, countering inequities created by unpaid internships and costly degrees.

Surveys of HR professionals suggest fears of wholesale job loss are overstated. Fewer than one in ten firms report full automation of junior roles, with many instead using AI to free early-career employees from repetitive work. This allows them to focus on higher-value tasks and develop skills in critical thinking, adaptability and communication.

For the UK, the challenge is to align AI adoption with inclusive workforce development. With investment in apprenticeships, thoughtful redesign of entry-level jobs and robust training, AI could enable a more dynamic and equitable labour market. Harnessed responsibly, it promises not just to replace early-career roles but to reinvent them for a new era of innovation and opportunity.

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## Bibliography

1. <https://washingtonmonthly.com/2025/08/27/ai-boon-for-jobs/> - Please view link - unable to able to access data
2. <https://www.tomshardware.com/tech-industry/artificial-intelligence/ai-is-eating-entry-level-coding-and-customer-service-roles-according-to-a-new-stanford-study-junior-job-listings-drop-13-percent-in-three-years-in-fields-vulnerable-to-ai> - A recent Stanford University study reveals that artificial intelligence (AI) is significantly impacting entry-level job opportunities, particularly in software development, customer service, accounting, and administrative roles. Over the past three years, job listings in these AI-susceptible fields have dropped by 13%, especially affecting workers aged 22-25. Conducted by economist Erik Brynjolfsson and researchers at Stanford's Digital Economy Lab, the study analysed data from payroll processor ADP, covering millions of employees across thousands of companies. Despite an MIT study indicating that AI has not substantially increased overall business profitability, many companies continue to adopt the technology. Interestingly, more experienced workers appear to benefit, as AI boosts their productivity, allowing them to absorb tasks previously handled by entry-level roles. While some sectors like nursing technician jobs have seen growth, the broader trend raises concern about the future development of junior professionals who traditionally gained skills through these now-declining roles. The study fuels ongoing debate around AI’s dual impact—both as a job eliminator and a productivity enhancer—and poses critical questions about workforce development and the evolving nature of work in the AI age.
3. <https://www.hibob.com/research/the-reality-of-ai-in-the-workplace-and-its-impact-on-entry-level-jobs-2-2/> - While AI is often viewed as a threat to junior positions, the reality is less straightforward. Yes, AI has automated many of the routine, task-based responsibilities that traditionally formed the foundation of entry-level roles — but it’s not eliminating these roles entirely. In fact, the greatest disruption, according to HR leaders, is occurring at the mid-level, particularly in areas like training and skills development. This trend points to an urgent need for upskilling and reskilling, as AI reshapes the day-to-day responsibilities of mid-career professionals. At the same time, the survey reveals that AI is not yet being used to its full potential. Only 16% of organisations report using AI for strategic decision-making, suggesting that many are still scratching the surface of what the technology can offer. Instead, AI remains focused on operational efficiencies — automating repetitive administrative tasks, streamlining workflows, and supporting training delivery. When it comes to entry-level talent, many companies are evolving rather than eliminating these roles: 21% are increasing internship and apprenticeship opportunities, recognising the need for hands-on experience and broader skill development. 24% have redesigned entry-level positions to be more strategic or creative, allowing early-career employees to contribute in higher-value ways.
4. <https://www.cnbc.com/2025/07/26/ai-entry-level-jobs-skills-risks.html> - Artificial intelligence is having a significant impact on many types of jobs — particularly entry-level positions and especially on roles that benefit from use of automation. While AI might not be eliminating a large percentage of early career jobs, as recent headlines have proclaimed, it certainly is changing them in a big way. "AI is reshaping entry-level roles by automating routine, manual tasks," said Fawad Bajwa, global AI, data, and analytics practice leader at executive search and leadership advisory firm Russell Reynolds Associates. "Instead of drafting emails, cleaning basic data, or coordinating meeting schedules, early-career professionals have begun curating AI-enabled outputs and applying judgment." For example, people working in entry-level marketing jobs are using generative AI to create first drafts of promotional or campaign documents, and early career data analysts are relying on AI to prepare datasets, Bajwa said. "AI is reshaping all jobs," said Zanele Munyikwa, an economist at labor analytics firm Revelio Labs. He pointed out that hiring for entry-level jobs is down in general, regardless of AI exposure. "AI-exposed entry-level jobs are seeing bigger drops in demand, but the difference to non-exposed jobs is small," he said. Evaluating employee role AI exposure What AI is doing is forcing an "occupational transformation" among entry-level roles, Munyikwa said. For example, the firm's research has shown that tasks performed by junior-level professionals are shifting toward less AI-exposed functions. The most AI-exposed jobs tend to be technical, such as data engineers, database administrators, IT specialists, and cybersecurity personnel, as well as financial workers such as auditors, Munyikwa said. And in an interesting twist, the most exposed jobs are also adopting AI the most, making them more productive, he said. In some of these occupations, up to 30% of workers are already using AI to perform their day-to-day tasks, according to Revelio Labs' research, and for those who use these tools, the productivity gains can be significant. "Increases in productivity may eventually lead to fewer headcounts in certain job families, but also create jobs elsewhere," Munyikwa said. "While AI may currently have some productivity boosting capabilities, it needs to be applied and used consistently across large parts of the organization to take effect." That requires investments in AI tool training and thoughtful restructuring of job requirements and capabilities, Munyikwa said. "This will take a lot of time and careful leadership to even partially achieve big cost savings," he said. Jobs with low AI exposure frequently involve tasks that are difficult to automate, the Revelio Labs' research noted. These positions include manual jobs in manufacturing, hospitality roles, or interpersonal work, which still require a steady pipeline of human workers. Compared with 2010, demand for these roles has grown more quickly than for high-exposure roles, the research said. Repetitive jobs are going, but not overnight To be sure, AI is already eliminating some entry-level functions in companies. "Generally, jobs that are repetitive, rule-based, and easily codified are most at risk," Bajwa said. Many are not disappearing overnight but rather are being fundamentally transformed and restructured to involve more oversight and less manual work, he said. Although it is highly unlikely that there would be a significant impact on entry-level jobs in the short term, Bajwa said, "organizations must redesign how early talent is onboarded, developed, and integrated in order to navigate the decade ahead," he said. "Without foundational tasks, it's harder for people to build experience, leading to a fundamental gap in terms of how new professionals will build judgment, confidence and fluency." In fact, 54% of the 3,000 executives from Russell Reynolds' global network that the company surveyed are concerned that AI reliance is eroding critical thinking, and one-quarter are worried about AI inadvertently undermining product/service quality and critical internal process quality.
5. <https://www.hibob.com/research/the-reality-of-ai-in-the-workplace-and-its-impact-on-entry-level-jobs/> - AI is undeniably changing how companies operate, especially when it comes to automating repetitive, low-value tasks. But rather than eliminating jobs, it is reshaping them. Most organizations are not doing away with entry-level hiring. Instead, they are evolving how these roles are structured, what skills they require, and how early-career talent is onboarded and developed. It’s redefining responsibilities, raising the bar for skills, and requiring companies to rethink how they attract early talent. Despite widespread concerns about AI replacing entry-level jobs, our findings suggest a more balanced reality. While AI is certainly transforming how early-career roles function, it is augmenting rather than eliminating these positions. Perceptions of Replacement Are Overstated When asked to what extent AI has replaced entry-level tasks: Only 8.7% of respondents said AI has completely replaced entry-level responsibilities, a significant 50.9% believe AI has replaced these tasks to some extent, and 22.1% say it has done so to a large extent. Just 14.9% believe AI has had no impact at all. These responses reflect a clear trend: entry-level roles are evolving, not disappearing. Only a small fraction of organizations report full automation of entry-level roles. In most cases, AI is used to free up time, allowing employees—including junior hires—to focus on more strategic, creative, and human-centric tasks. How Companies Are Adapting Organizations are not turning away from early-career hiring but instead adjusting their strategies: 12.5% are redesigning entry-level roles to include more strategic or creative tasks, 8.2% are offering more internships or apprenticeships to prepare young talent, 8.4% are prioritizing digital apprenticeships focused on AI or data training, and 9.9% report hiring fewer entry-level candidates—but this is a minority response. The takeaway: rather than eliminating entry-level opportunities, most companies are evolving them to better align with modern workflows and AI-enhanced environments. Leapfrogging Is Rare, and Experience Still Reigns Crucially, the majority of professionals and HR leaders surveyed still believe that experience matters. Entry-level roles continue to serve as an essential gateway for skill development and career growth. The most effective strategies for young professionals to remain competitive remain unchanged: internships, apprenticeships, and early work experiences. Soft skills such as communication, adaptability, and critical thinking are still in high demand—and remain beyond the reach of AI. Although some headlines suggest that AI will allow graduates to skip over entry-level jobs entirely, the data tells a different story: Only 14% of respondents believe recent grads can leapfrog directly into higher-level roles, 30.8% say that’s not really the case—most still need to gain foundational experience, and 40.4% believe leapfrogging is possible to some extent—but only for grads with very specific skills or industry knowledge. Similarly, among HR professionals, 38.1% reported hiring grads directly into higher-level roles, but mostly in specialized areas like AI, data science, or software engineering. Over 50% of organizations have not changed their experience requirements, showing that traditional paths to career development remain highly relevant. Skills Still Matter—but Experience Matters More Even as automation changes job requirements, experience remains a key differentiator: 54.9% said internships, apprenticeships, or volunteer work are still the best way to stay competitive, 44.5% emphasized the continued value of soft skills like adaptability, collaboration, and problem-solving—traits AI cannot replicate. Technical certifications and digital fluency are gaining importance, but they do not replace real-world experience. While AI is streamlining many low-skill tasks, it has not removed the need for entry-level roles. These positions are being reimagined—not eliminated—paving the way for smarter, more capable, and more human early-career experiences.