FUTURE TALENT COUNCIL

Future Talent Insight Brief

How Artificial Intelligence Is Reshaping Entry-Level Careers

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AI's Impact on Entry-Level Careers: An Industry Approach

AI is not merely a technological shift, it is fundamentally reshaping how value is created in the labour market, redefining tasks and what is valued in talent. According to the World Economic Forum (2025), 39% of core skills are expected to change by 2030, 92 million jobs may be displaced, and 170 million new roles created. The challenge is therefore not job quantity, but job composition and access, particularly at the entry level, where up to 30% of work hours are automatable (World Economic Forum, 2025) and postings increasingly require prior experience, creating structural barriers for new entrants. From healthcare and cybersecurity to sustainability, technology, and climate policy, artificial intelligence is changing what work looks like, what skills are valued, and how young professionals enter the labor market. On the surface, this transformation is often presented as progress: faster systems, stronger analytics, reduced administrative burden, improved decision-making, and new opportunities for innovation. However, beneath that promise is a more complicated reality. AI is not only changing jobs; it is changing the pathway into them.

Across the perspectives in this brief, one shared concern emerges: AI is raising expectations for early-career professionals while narrowing the entry-level experiences that traditionally helped them develop. In technology, junior roles are shrinking as employers seek candidates with immediate AI fluency. In nursing, AI can support education and patient care, but it cannot replace clinical judgment, empathy, or presence at the bedside. In cybersecurity, AI-powered threats are accelerating faster than many organizations can train workers to respond. In sustainability, the reporting and data-processing tasks that once introduced graduates to the field are increasingly automated. Even in climate policy, the question is not only what technology makes possible, but who bears the cost when institutions prioritize efficiency without accountability.

This brief brings together these different industries to argue that the future of work should not be measured only by productivity or automation. It should also be measured by whether young professionals are given meaningful opportunities to learn, contribute, and develop the judgment needed to lead responsibly. AI may transform the tools we use, but it cannot replace the human responsibility behind those tools. The central challenge for employers, educators, and policymakers is not simply how to adopt AI, but how to build systems that protect human value while preparing the next generation to thrive

Technology: AI as Both an Enabler and Barrier to Entry

The numbers around AI and employment look promising on the surface: AI-related job postings in the US have risen 25.2% annually with median salaries exceeding $150,000 (Veritone, 2025), and roles requiring AI skills grow at 7.5% every year even as total job postings fell 11.3% (PwC, 2025). But these figures obscure a more uncomfortable reality. Entry-level positions, the traditional training ground for new professionals, are disappearing precisely because AI now performs the routine tasks they were built around. Junior tech

roles fell 35% in job platforms, LinkedIn/Indeed/Eures, across major EU countries in 2024 (EY, cited in Rest of World, 2025), recent graduates represent just 7% of new hires at major tech firms (SignalFire, 2025), and UK technology graduate roles dropped 46% in 2024 with a further 53% decline projected by 2026 (Rezi, 2026). This suggests that people who already have experience are the ones who are benefiting from AI whereas people who need entry-level jobs to get started find fewer doors to walk through.

As a fintech student at Imperial, this tension is not abstract. The job market is tough: applications are heavier, processes are more automated, and roles increasingly demand demonstrated AI fluency rather than the potential to develop it. But there is a subtler dynamic worth naming: students have adapted by using AI tools to optimise CVs, craft tailored cover letters, and rehearse screening questions well enough to pass the first stages of hiring processes with ease. Employers have noticed, and have responded by raising the bar: making technical assessments harder, introducing live problem-solving rounds, and designing tests specifically to expose candidates who lack genuine understanding beneath an AI-polished surface. The result is a strange arms race. Students who use AI gain an edge in early filtering; employers engineer later stages to counteract it; and those who choose not to engage with AI at all are disadvantaged at every point. At this stage, it feels less like a choice and more like a condition: either you learn to use these tools strategically and critically, or you risk being filtered out before you ever get to show what you actually know.

From my perspective, what is frustrating is that the disappearance of entry-level roles does not reflect a lack of talent in the pipeline: it reflects a structural impatience. Companies are optimising for immediate output at the expense of long-term capability building, and the industry will eventually feel the cost of that. If every firm assumes someone else will train the next generation, nobody will. This is also a problem for universities. There is a real gap between the conceptual AI literacy being taught in programmes like mine and the applied, context-heavy fluency that employers are actually screening for, and that gap needs to close faster than current curriculum cycles allow. What I would suggest is a more deliberate partnership between institutions and industry: structured rotations, sponsored project work, and entry-level roles explicitly redesigned as learning contracts rather than immediate impact positions. Employers who invest in building junior talent now will have a significant advantage in three to five years when the pool of genuinely experienced AI-fluent professionals becomes the scarce resource. The current approach, raising the bar while shrinking the ladder, is not sustainable, and students entering the market today are the ones absorbing the cost of that short-termism.

Entry-Level Nursing in an AI-Driven World

As a recent graduate of an accredited Bachelor of Science in Nursing (BSN) program in the United States, I have seen firsthand the impact of artificial intelligence on Nursing education. The public launch of ChatGPT was during the first semester of my Nursing program in November of 2022; therefore this subject has heavily influenced my own education. With some insight from my clinical instructors and a brief literature review, I have gathered information about how AI is shaping the way nursing students learn, prepare for clinical practice, and apply critical thinking in complex patient-care situations.

Rather than viewing artificial intelligence as a replacement for nursing judgment, I have come to understand it as a tool that can support learning when used ethically and intentionally. Lifshits and Rosenberg (2024) describe how AI can make nursing education more engaging through interactive learning tools, AI-based games, and virtual simulation (VSIM) experiences. These opportunities allow students to practice clinical skills, make mistakes safely, and develop confidence before entering real patient-care settings. In my own VSIM experiences, practicing in a high-stress but controlled environment helped prepare me for fast-paced, high-acuity clinical situations.

However, AI also raises important concerns about competency as students transition into practice. Nursing education already involves subjective measures of clinical judgment, such as care plans and concept maps. If students rely on AI to complete these assignments, it may create a gap between academic performance and true clinical readiness. El Arab et al. (2025) emphasize the importance of addressing ethical concerns, integrating AI literacy into nursing curricula, and ensuring equitable access to AI tools. As nursing education evolves, students must learn not only how to use AI, but also how to question its limitations, evaluate its outputs, and apply professional judgment before using information in patient care. AI literacy is important, but it cannot replace the real-time development of critical thinking, clinical judgment, and the nursing process.

Your AI Nurse: Artificial Intelligence at the Bedside

AI is already shaping patient care in ways many patients may not even realize, from appointment transcription and imaging support to algorithms that help identify risks for falls, infection, pressure injuries, and sepsis. From a nursing perspective, these tools can reduce time spent on documentation, improve organization, and allow nurses to focus more fully on compassionate bedside care. Pailaha (2023) explains that AI may improve patient outcomes by supporting decision-making, improving medical records, reducing time-consuming tasks, simplifying nursing workflows, increasing access to care, and lowering healthcare costs.

At the same time, AI must be used thoughtfully. Nursing is rooted in holistic, compassionate care for individuals, families, and communities (Shepherd & McCarthy, 2025). While AI can analyze data, organize trends, and support clinical workflows, it cannot replace the nurse's presence at the bedside. It cannot notice subtle changes in a patient's condition, hear concern in a family member's voice, or recognize when something simply "does not look right." These moments require direct observation, clinical intuition, communication, empathy, and advocacy. Therefore, the future of AI in nursing should focus on prioritizing AI sufficiency, by strengthening nurses' abilities to provide safe, compassionate, and evidence-based care. AI tools are valuable, but they must be used with caution, especially as entry-level nurses develop the clinical judgment and hands-on skills that are essential to patient care.

Synthesis: How This Affects *You.*

Every patient is someone's loved one, and if you or your family member were in a hospital bed, you would want a nurse with the knowledge, confidence, and clinical judgment to provide both compassionate and competent patient care. For this reason, AI in nursing

cannot be treated as just another technological advancement, as it directly affects patient safety and outcomes.

AI has great potential to support nurses by organizing data, reducing documentation time, analyzing labs, and helping clinicians focus more on the patient in front of them. However, nursing cannot be reduced to data processing. Nurses must recognize subtle changes in condition, interpret family concerns, advocate for patients, and connect clinical information to the lived reality of the person at the bedside. These moments require presence, critical thinking, emotional intelligence, and human connection, which AI cannot replicate. Ultimately, AI should strengthen nursing students through simulation experiences and enhanced studying tools, without shielding them from the hard work of becoming clinically competent. The future of nursing should use technology in a way that protects what makes the profession essential: clinical judgment, advocacy, compassion, and the nurse's irreplaceable presence at the bedside.

How AI-Powered Cyberattacks Are Reshaping the Cybersecurity Workforce

AI is no longer just transforming cybersecurity, it is increasing the exposure of organizations that are unprepared to respond. This transformation is already visible at the local level. In many cities emerging as cybersecurity hubs, more students are pursuing degrees in cybersecurity and AI as awareness of these threats increases. Institutions in my city, such as University of Texas at San Antonio are responding by investing in facilities designed to prepare students for the evolving demands of the cybersecurity workforce. However, there remains a gap between education and industry. While universities are adapting quickly, I believe many companies have yet to match this pace by investing in training and development. Bridging this gap is essential to ensuring that both current employees and future professionals are equipped to respond to AI-driven cyber threats.

Escalating Threats and Business Risk

The scale of AI-driven cyber risk is already evident. The World Economic Forum (2025) reports that nearly 47% of organizations identify AI-powered cyber threats as a primary concern. These threats are not theoretical, AI enables attackers to automate vulnerability detection and execute attacks at a scale and speed that traditional systems cannot match. Palo Alto Networks (2025) highlights that these advancements are making cyberattacks more frequent and harder to detect, increasing pressure on organizations to strengthen their defenses. For companies, this is not just a technical issue it is a direct operational and financial risk.

A Talent Gap Companies Cannot Ignore

In response, demand for cybersecurity professionals is rising rapidly. However, the World Economic Forum (2025) estimates a global shortage of 2.8 to 4.8 million workers, with only 14% of organizations reporting that they have the talent needed to adequately defend their systems. This gap is not simply a labor market issue, it reflects a failure in how

companies approach talent development. As cybersecurity roles become more complex, expectations for new hires are increasing, particularly in areas such as AI security, threat intelligence, and risk analysis. Entry-level roles are no longer structured to build these skills, creating a disconnect between industry demand and workforce readiness.

What Must Be Done

Given these realities, companies can no longer rely on traditional hiring strategies or assume that the talent market will meet their needs. A shift toward proactive investment in people is essential:

- *Rebuild entry-level pathways:* As expectations rise, companies must form structured entry level roles, internships, and apprenticeships that will further allow early career professionals to gain practical experience. Without these pathways, the overall talent gap will only widen.
- *Strengthen partnerships with educational institutions:* Universities are already adapting to the growing importance of cybersecurity and AI. Companies that collaborate with these institutions can better align education with industry needs and secure a future pipeline of skilled professionals.
- *Recognize cybersecurity as a strategic investment:* Cybersecurity is no longer a support function, it is central to business continuity and risk management. Investing in employees and future talent is critical to maintaining resilience in an AI-driven threat landscape

The Future of Sustainability Talent in the AI Era

AI is reshaping what it means to work in sustainability. What was once largely a compliance and reporting function is becoming more strategic, data-driven, and closely tied to business decision-making. Instead of producing ESG reports, professionals are increasingly expected to generate insights, forecast outcomes, and demonstrate financial impact.

This shift is changing what "valuable" talent looks like. There is growing demand for hybrid profiles, people who combine sustainability knowledge with data and analytical skills and can work with AI to inform decisions. As recruiters highlight, companies are prioritising more specialised capabilities, while routine tasks are increasingly automated (Eco-Business, 2025).

Impact on Entry-Level Careers

For those at the start of their careers, this shift is more complicated. Many of the tasks that once defined entry-level roles—ESG reporting, data processing, and disclosure preparation—are now being automated. As a result, there are fewer traditional entry points. Recruiters are already observing this change, noting that companies are "seeing more senior hires and fewer junior hires." The result is what some describe as "massive talent pathway issues," where graduates struggle to gain the practical experience needed to progress (Eco-Business, 2025).

The picture is similarly mixed in the energy sector. An Airswift survey of over 9,000 professionals across 143 countries found that only 7% believe energy roles are not at risk, while around one-third see operational jobs as vulnerable (Future Digital Twin, 2026). At the same time, employers report that these roles remain difficult to fill, suggesting a gap between perception and reality. In practice, particularly in safety-critical environments, human expertise remains essential, with AI more likely to support work than replace it.

Why This Matters

AI is increasing the value of sustainability talent by making the field more strategic, analytical, and decision-focused. However, it is also narrowing entry-level pathways by automating tasks that traditionally provided early-career experience. This shift has implications for several groups:

- Students and graduates may find it harder to gain the practical experience needed to enter the profession.
- Companies risk future talent shortages if fewer young professionals are able to develop through early-career roles.
- Universities and governments face pressure to ensure education and workforce development initiatives align with the skills required in an AI-driven sustainability sector.

Key Improvement Areas

- *Employers:* Redesign graduate roles so junior employees work alongside AI, focusing on interpretation, critical thinking, and decision-making.
- *Universities:* Integrate data literacy, AI tools, and interdisciplinary problem-solving into sustainability programmes.
- *Governments:* Support workforce transitions through green-skills initiatives, internships, and policies that maintain accessible entry pathways into sustainability careers

Who Pays for the Flight? The Case for Taxing Unnecessary Corporate Travel and Reinvesting in Our Future

Gen Z constitutes 27% of the global workforce and is, by every survey, the generation most alarmed by climate change (World Economic Forum, 2020). We are also the generation that will live longest with the consequences of decisions made today. Corporate air travel, defined here as flights that could reasonably be substituted by remote meetings or available rail alternatives. Remain among the most visible, high emission activities that are almost entirely unregulated. In my view, this structural inconsistency, where businesses bear no financial responsibility for their flight emissions, represents a growing legitimacy gap that leaders can no longer afford to ignore.

Burke et al. (2026) estimate the true social cost of carbon at over $1,013 per tonne. More than five times current US federal estimates. With future damages projected to be ten times greater than past impacts from the same emissions (Burke et al., 2026). One additional long haul flight per year over a decade is estimated to cause around $25,000 in global climate damages by 2100, disproportionately affecting countries in the Global South despite their lower emissions (Intergovernmental Panel on Climate Change [IPCC], 2022). Aviation contributes about 2.5% of global CO_2 emissions and up to 4% of warming when non-CO_2 effects are included (International Council on Clean Transportation [ICCT], 2023). Meanwhile, a 2023 Deloitte survey found that 73% of Gen Z respondents are anxious about climate change and over half have changed their behaviour in response, while corporate accountability remains limited (Deloitte, 2023).

How AI Could Be Used to Track Emissions

Artificial intelligence can make corporate travel emissions more visible and actionable by automating the calculation of Scope 3 emissions using data from booking systems, flight logs, and fuel records. This reduces the manual effort that often discourages companies from reporting travel footprints. Natural language processing can identify trips where rail is a viable alternative, prompting reviews before flights are approved. AI-powered dashboards can also benchmark travel emissions against industry peers in real time, creating stronger accountability than annual reports. Startups already offer AI tools that combine emissions tracking, ESG reporting, and carbon reduction strategies for SMEs, showing that scalable and affordable solutions are within reach for corporate travel.

Qualitative Insight

Voices from both science and business highlight a common frustration: structural systems rarely change without intervention. Oliver Benton, a Gen Z Natural Sciences MSc student at the University of Exeter, notes that natural gas has persisted through multiple energy transitions, illustrating how entrenched systems endure (Benton, 2026). Just as the Carbon Price Floor helped accelerate the shift from coal, a similar pricing mechanism for aviation could be crucial in driving more sustainable corporate travel behaviour.

Federico Santi, a Gen Z International Management MSc graduate from the University of Bologna and past co-founder and CFO brings a practitioner's perspective: "We built our start up because the data to measure corporate emissions already exists — it just isn't being captured or acted on. The moment companies are required to report travel emissions with the same rigour as energy use, the business case for cutting flights becomes obvious. Technology removes every excuse for inaction." These qualitative perspectives are not generalisable to all Gen Z, but they reflect a recurring theme: a demand for structural consistency. If emissions carry a real cost, that cost should fall on whoever produced them.

Insight to Action: What Needs to Be Done

Science provides a compelling foundation for action. Three policy mechanisms follow directly from the evidence:

- *Tax it:* A tiered corporate travel carbon levy. Steepest on private jets and short haul routes where rail alternatives exist. With ring fenced revenue.
- *Redirect it:* Proceeds directed to green infrastructure, sustainable agriculture, and healthcare systems. Most of which are already absorbing the costs of climate damage.
- *Report it:* Mandatory Scope 3 travel emissions disclosure for companies above a defined revenue threshold; accountability begins with visibility In my assessment, the absence of sustained political pressure is likely among the barriers to implementation.

Although this hypothesis warrants further empirical research. A generation now entering the workforce and the voting booth has the numbers, the knowledge, and the motivation to raise that pressure; leaders who fail to engage with these structural questions risk losing the confidence of the generation they will need to govern.

Across Industries, One Message: Human Value *Matters*

The future of AI and its purpose is not defined by replacement, but by responsibility. Across the industries explored in this brief, AI is clearly creating new possibilities. It can help nurses spend more time with patients, strengthen cybersecurity defenses, support sustainability analysis, improve business decisions, and reduce repetitive work. Yet these benefits come with a critical warning: when organizations use AI only to optimize short-term efficiency, they risk weakening the very human talent pipeline they will depend on in the future.

The shared lesson across these perspectives is that entry-level work still matters. Early-career roles are not just low-level positions; they are training grounds where people develop judgment, confidence, professional identity, ethical reasoning, and practical expertise. If AI removes those first steps without replacing them with meaningful learning pathways, industries may gain speed in the present while creating deeper workforce gaps in the future. A labor market that demands experienced, AI-fluent professionals without investing in the development of new talent is not sustainable.

This is why employers, universities, and policymakers must act together. Companies should redesign entry-level roles as structured learning opportunities, not eliminate them in the name of automation. Educational institutions must teach students not only how to use AI, but how to question it, interpret it, and apply human judgment beyond it. Policymakers and leaders must ensure that innovation does not come at the expense of accountability, equity, or the next generation's opportunity to participate.

All in all, AI is changing the future of work, but it should not change what makes work meaningful. Across healthcare, technology, cybersecurity, sustainability, and climate leadership, the most valuable professionals will not be those who simply use AI the fastest. They will be those who can combine technical fluency with critical thinking, compassion, ethics, creativity, and responsibility. The challenge ahead is to make sure the next generation *has the chance* to become those professionals.

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