IAG WORKSHOP IN PRESENCE ON THE TRENDS AND IMPACT OF AI IN THE LABOUR MARKETS

ETF Background Paper

The aim of this short background paper is to serve as a foundational input for the discussions at the upcoming IAG Workshop on the Trends and Impact of AI in the Labour Markets from 14th to 15th of May in the ETF premisses in Turin, Italy. It is intended to stimulate the discussions and provide a basis for further development into a comprehensive paper in the post-workshop period, enriched by the contributions and insights of all participants. In the following pages, the background paper starts with a short introduction of AI definition and its implications for labour markets, and typical functions of AI observed in the workplaces. Then it continues to provide a wide and evolving spectrum of AI-related skills needs from various academic and institutional sources, based on a classification of four interdependent categories. Finally, the paper ends with the brief discussion of AI literacy for all.

1. What AI means for labour markets

There is a rich body of research and policy discussions on the definition of Artificial Intelligence (AI). Across academic circles and institutions around the world, there has been a concerted effort to encapsulate what AI entails, reflecting its complexity and far-reaching impact. These definitions help shape understanding of what AI means and contribute to influence how policies and regulations are developed and managed to integrate AI into society. The rich diversity in defining AI highlights its multifaceted nature, however, at their core, there is a broad consensus across definitions about core AI characteristics.

John McCarthy from Stanford University who first coined the term AI in the 1950s, defines it as "*the science and engineering of making intelligent machines*" (McCarthy, 2012). In its pioneering research, McCarthy emphasises AI's foundational goal of creating machines that can perform tasks requiring human intelligence. It underscores the importance of the technological aspects of AI, focusing on the development of systems that can perceive, reason, learn and adapt autonomously, much like a human would. This research also includes definitions for a wide range of AI subfields - from machine learning to natural language processing - all aimed at enhancing machine capabilities.

AI is defined in several documents of the European Commission (EC), starting with the definition of the high-level expert group on AI in 2018, and followed by another definition made by the Joint Research Centre (JRC) of the EC in 2021 (see Box 1). The latter is officially used by the AI Watch, the EC's knowledge service monitoring AI in Europe. It was created by reviewing 29 AI policy and institutional reports, 23 relevant research publications and three market reports, and, like the research from McCarthy, it includes a taxonomy and definition of AI subfields. Later the EU AI Act provided a similar definition in 2024. These are just a few of the many definitions of AI set out by researchers and international organisations in recent years.

Box 1: Definitions of AI in the EU documents

AI refers to systems that show intelligent behaviour: by analysing their environment they can perform various tasks with some degree of autonomy to achieve specific goals (EC, 2018).

AI is software (and possibly also hardware) systems designed by humans that, given a complex goal, act in the physical or digital dimension by perceiving their environment through data acquisition, interpreting the collected structured or unstructured data, reasoning on the knowledge, or processing the information, derived from this data and deciding the best action(s) to take to achieve the given goal (JRC, 2021).

AI is machine-based systems designed to operate with varying levels of autonomy and that may exhibit adaptiveness after deployment, and that, for explicit or implicit objectives, infers, from the input it receives, how to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments (EU, 2024).

What unites them is the common thread that AI consists of intelligent machines designed to mimic human behaviour. Whether it's through autonomous decision-making, learning from data, or performing complex tasks, the overarching goal of AI is to enhance human capabilities and improve efficiency across various domains. Despite the nuances in each definition, they collectively underscore AI's role in transforming both technology and society by bridging the gap between human intelligence and machine execution.

It is important to keep in mind that AI has three key components to function effectively:

- Learning algorithms and models developed by scientists to analyse data
- The Big Data needed to train and validate these models, which depends on IT for collection and storage. Big Data is the fuel of AI and provided by humans
- The computational power needed to process Big Data. Only relatively recently have computers become powerful enough to analyse large amounts of data fast enough.

In terms of labour market implications, there are certain features of AI which substantially distinguish it from other technologies. Based on the review of existing literature, following features can be listed:

- **AI as general-purpose technology:** Many experts think that GenAI has the potential to eventually become a general-purpose technology. This means AI is comparable to computing, electrification and the steam engine, and like their historical impact. Thus, AI is expected to change substantially entire economies and societies due to increasing and diversifying AI applications in many areas. The uptake of a general-purpose technology follows a J-curve effect with initial negative impact due to heavy investments in re-organisation and re-training, but rebounds in later years (Brynjolfsson et al, 2018; JRC, 2018).
- **The non-rivalry of algorithms:** It would be sufficient for one scalable algorithm to have acquired the knowledge or skills for a specific task in order for it to be used in any production process anytime anywhere. Contrary to robots, there is no need to replicate or embody that skill or knowledge in another object. A single algorithm can displace all workers that were performing that particular task for which the algorithm is trained. As a result, the use of knowledge becomes much more centralised in a world of non-rival AI algorithms, compared to a world where knowledge or skills are embodied in rival machines or human agents (JRC, 2018).
- **AI automating non-routine cognitive tasks:** Automation of routine tasks is already well-known, but AI's reasoning and perception capacity enables the performance of non-routine cognitive tasks, particularly hitting the white-collar and highly educated professions (OECD, 2023). Historically speaking, past automation has tended to reduce the labour share of national income, and benefits tend to be highly unequally distributed across different skill groups so far. The declining share of labour in value-added since the 1980s is attributed to a relative decline in the price of capital goods, induced mainly by ICT technology and automation.

In addition to these distinct features of AI, there are also some other factors which makes the research on AI impact on labour markets more challenging. These can be summarised such as:

- **Diversity of AI technology:** As already pointed by many studies, AI is not a single, uniform technology that will steer the labour market in one known direction. In reality, AI comprises a range of different systems, which can impact workers in different ways, from influencing the demand for their labour to changing the environment where they work and to affecting the inclusiveness of the labour market overall. Fundamentally, the impact of AI on the workplace will depend on the type of AI, how it is deployed, and on contextual factors (OECD, 2021a).
- **Mixed and context-dependent impact of AI:** Several factors such as economic structures, labour market institutions, regulatory environment, education systems, and technology adoption will shape the extent of changes and impact of AI. For example, the finding of technical feasibility of automation does not mean it is also economically viable, or socially acceptable given the existence of different regulatory barriers or physical and ethical restrictions. Based on the occupational exposure and task-based approach in analysing the AI impact on the transformation of work (e.g. in terms of job displacement, job creation, job enhancement), the results are mixed and context-dependent due to the political, economic and social decisions to make by different actors.
- **AI in its infancy:** With constant evolutions every day it is reasonable to say that we are still far from seeing the full impact of AI on the labour markets. While AI's role in labour markets is continuously evolving with new advancements occurring regularly, we have still limited evidence from actual AI implementations so far.

2. The typical functions of AI applications in workplaces

AI is not a singular technology but an umbrella term covering a diverse range of tools. Given this variety, AI affects labour markets in multiple ways, altering skill demands, reshaping work environments, and challenging inclusion (OECD, 2021a). To assess these impacts, it is necessary to identify how AI is typically used in workplaces. Table 1 presents the key AI use cases across occupational settings.

Data-driven business intelligence is the most widely adopted form of AI across sectors and company sizes. Firms increasingly rely on AI-powered analytics to extract insights from large datasets, support strategic planning, and improve forecasting in areas such as finance, marketing, and operations. The high rate of adoption can be attributed to the relative maturity of tools, the modularity of their integration, and their non-intrusive nature within organizational hierarchies. Business intelligence applications tend to be viewed as decision support systems rather than replacements for human judgement, thereby facing fewer ethical objections. Moreover, the falling cost of cloud computing and the proliferation of user-friendly platforms have made predictive analytics accessible even to small and medium-sized enterprises. Given the strategic value of data in contemporary business models, this domain is expected to expand further, particularly through the integration of generative AI to support automated reporting, risk analysis, and real-time decision-making.

Enhanced communication and collaboration, supported by AI, has become almost ubiquitous in the modern workplace. This surge has been catalysed by the global shift to remote and hybrid work models, particularly in the aftermath of the Covid-19 pandemic. AI-enhanced tools now embedded in common workplace platforms enable real-time translation, meeting summarization, sentiment analysis, and intelligent scheduling. Their integration into mainstream software suites (e.g., Microsoft Teams, Zoom, Google Workspace and others) has normalized their use across sectors and organizational levels. Unlike other AI applications, communication tools do not require substantial behavioural change or infrastructure investments, making them highly scalable. As generative AI capabilities are increasingly embedded in everyday collaboration platforms, such as drafting emails or suggesting action items, this area is likely to remain a key vector of AI integration across both public and private sector organizations.

Automation of tasks represent another most visible and practical application of AI in many organizational settings. Although the automation of routine tasks existed before AI, it has further

accelerated with the possibility of automation of several non-cognitive and cognitive tasks with the arrival of AI. Adoption has been moderate to high in sectors with well-structured and repetitive workflows, such as finance, logistics, and customer service. AI-powered systems, ranging from robotic process automation (RPA) to virtual assistants, are increasingly used to manage scheduling, data entry, and standardised customer interactions (Sinha et al, 2023). The appeal lies in the clear cost-benefit ratio: automation leads to measurable gains in productivity and accuracy while reallocating human labour toward more complex and value-generating functions. However, broader implementation faces challenges such as the high upfront cost of integration, technical compatibility with legacy systems, and internal resistance due to concerns over job displacement. Despite these barriers, adoption is expected to grow steadily, particularly as low-code AI platforms and cloud-based tools lower the entry threshold for smaller firms.

Recruitment and human resource management, supported by AI, remains less widespread and more context-dependent (Gulia et al, 2024). While large multinational corporations have begun to experiment with AI-driven hiring solutions, such as automated CV screening, candidate matching, and chatbot-led interviews, many organizations remain cautious. The promise of enhanced efficiency and reduced hiring bias is tempered by the perceived risks of algorithmic discrimination, lack of transparency, and compliance with data protection regulations. Trust in AI systems within HR functions remains limited, and the ethical sensitivity surrounding employment decisions poses a significant barrier to full automation. Nevertheless, as tools become more transparent and regulatory frameworks mature, incremental growth in this area is likely, particularly in initial recruitment stages rather than deeper talent management processes.

Employee well-being and professional development, supported by AI, is a growing but still relatively nascent area (Cramarenco et al, 2023). Personalized learning platforms, adaptive training systems, and well-being monitoring tools are being deployed in select innovation-driven firms to promote workforce resilience and continuous skill development. The rationale behind these applications is clear: in a rapidly evolving digital landscape, supporting employee growth and well-being is not only an ethical imperative but also a strategic necessity. However, adoption remains limited due to ethical concerns, particularly around the monitoring of employee behaviour and the potential misuse of sensitive personal data. Additionally, regulatory uncertainty around the use of AI in mental health or performance tracking continues to discourage widespread deployment. Nonetheless, this domain holds considerable promise, especially for large organizations aiming to integrate upskilling with internal mobility and retention strategies. Future growth is likely to be shaped by advances in explainability and consent-based data governance frameworks.

Agentic AI refers to autonomous artificial intelligence systems capable of independently performing complex, multi-step tasks by employing sophisticated reasoning and iterative planning (Acharya et al, 2025). In the workplace, the integration of agentic AI is poised to significantly transform employee roles and responsibilities. By automating routine and repetitive tasks, these AI systems enable employees to focus on higher-value, creative, and strategic work, thereby enhancing productivity and job satisfaction. Agentic AI can serve as intelligent virtual assistants, providing real-time insights and data-driven recommendations to support complex decision-making processes, effectively reducing cognitive load and fostering a more efficient work environment. However, the adoption of agentic AI also presents challenges, including concerns about reliability, quality, and the potential for job displacement. Therefore, organizations must implement comprehensive training and upskilling programs to ensure employees can effectively collaborate with AI systems, thereby fostering a symbiotic relationship between human workers and agentic AI.

Table 1: Main use cases AI in workplaces

AI Use case	Description	Benefits	Challenges	Examples of AI tools
1.Data analysis and insights	Uses AI for predictive analytics and data-driven decision-making, aiding in business strategy and forecasting.	Provides actionable insights, forecasts trends, and enhances business intelligence.	Data privacy issues, model transparency, and high computational costs.	Tableau with Einstein AI, SAS Viya, Google AutoML Tables, Amazon SageMaker AI
2.Enhanced communication and collaboration	Improves workplace interactions via AI-powered collaboration tools, language translation, and sentiment analysis.	Facilitates global teamwork, improves communication, and enhances employee engagement.	Dependence on AI accuracy, risk of misinterpretation, and cultural adaptation challenges.	Microsoft Teams Copilot, Google Meet AI, Zoom IQ, Grammarly Business
3.Automation of tasks	Automates both routine and non-routine tasks like customer service, data entry, and scheduling, improving efficiency and accuracy.	Increases efficiency, reduces human error, and optimizes resource allocation.	Risk of job displacement, integration complexity, and reliance on high-quality data.	UiPath, IBM Watson Assistant, Amelia, Microsoft Power Automate
4.Recruitment and HR Management	Enhances recruitment through AI-driven candidate screening and interview automation, reducing bias and streamlining hiring.	Speeds up hiring, ensures fairer recruitment, and improves talent matching.	Potential bias in AI algorithms, privacy concerns, and resistance to automated hiring.	HireVue, Pymetrics, SeekOut, LinkedIn Talent Insights
5.Employee well-being and development	Supports employee well-being with AI-driven personalized learning and stress monitoring for improved work-life balance.	Promotes continuous learning, detects well-being issues, and enhances workforce productivity.	Ethical concerns in employee monitoring, potential data misuse, and need for regulatory oversight.	Coursera with AI recommendations, Workday Learning
6.Agentic AI	Deploys agentic AI to act as intelligent workplace companions that support planning, content generation, task execution, and decision-making.	Reduces cognitive load, enhances productivity, supports strategic tasks.	Trust in AI output, integration into workflows, risk of overreliance.	Microsoft 365 Copilot, Google Duet AI, ChatGPT Enterprise, Salesforce Einstein GPT

Source: Lightcast and ETF, 2025.

3. Evolving spectrum of AI-related skills needs

Emerging evidence suggests that AI-related skill needs can be conceptualised along a spectrum, ranging from minimal task-based familiarity with AI tools to sophisticated development and engineering competencies. At the most basic level, workers in frontline or support roles, such as retail assistants, warehouse operatives, or administrative clerks, may be expected to use AI-powered scheduling tools, customer service bots, or document processing systems. These tasks require AI awareness and tool literacy, akin to the foundational digital skills (e.g., email use, spreadsheets, cybersecurity hygiene) that are now considered universally necessary (OECD, 2021b).

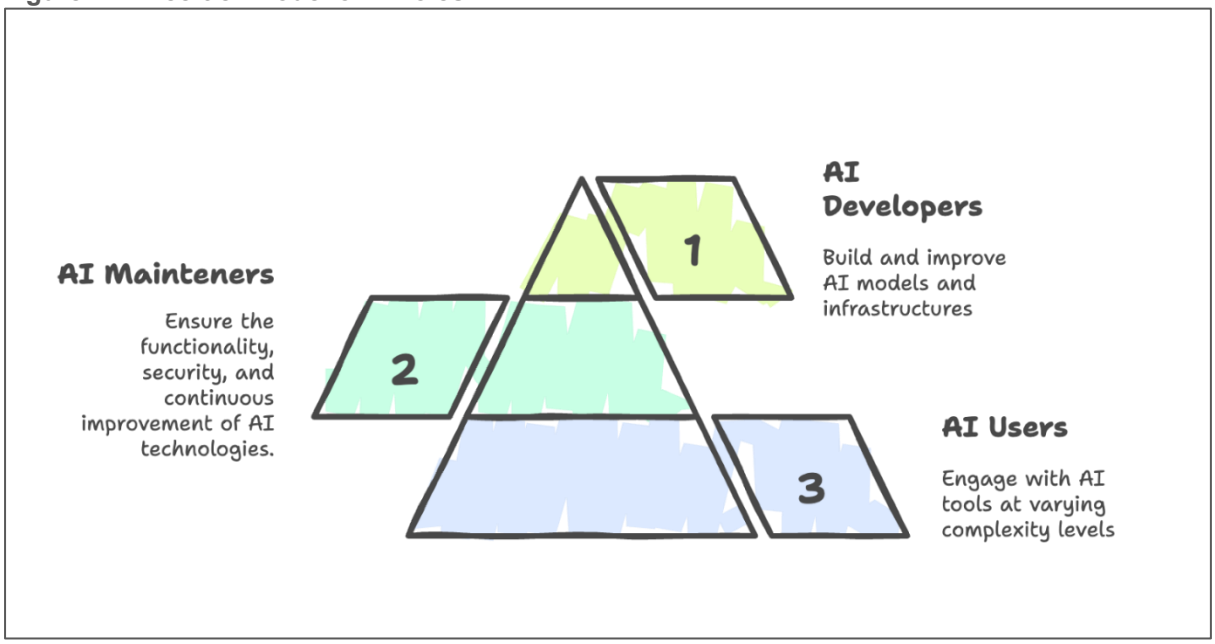
At a moderate level, professionals such as educators, healthcare workers, and marketing analysts may be required to apply AI systems within domain-specific contexts. For example, a teacher using AI-based adaptive learning platforms must interpret student performance data generated by machine learning models, while a logistics manager may rely on AI-enabled demand forecasting tools. These roles require not only operational proficiency with AI interfaces but also a basic understanding of underlying functionalities, limitations, and ethical considerations (Babashahi et al., 2024).

At the most advanced end of the spectrum are roles dedicated to the development and engineering of AI systems, including machine learning engineers, natural language processing specialists, and data scientists. These positions demand deep expertise in programming languages (e.g., Python, R), algorithmic design, neural networks, and cloud-based computing environments. They also often require strong mathematical and statistical foundations, in addition to familiarity with emerging areas such as explainable AI or generative models (Stanford Institute for Human-Centered AI, 2025; Sayem et al., 2024).

One helpful framework for understanding this diversity is the three-tier model of AI roles (Figure 1):

- **Developers of AI systems**, responsible for building and improving AI models and infrastructures.
- **Users of AI systems**, who engage with AI tools in varying degrees of complexity, from basic (e.g., operating AI-driven chat interfaces) to intermediate (e.g., configuring data inputs) and advanced (e.g., customising AI applications).
- **Maintainers of AI systems**, such as IT technicians or AI system integrators, who ensure the functionality, security, and continuous improvement of AI technologies.

Figure 1. Three-tier model of AI roles



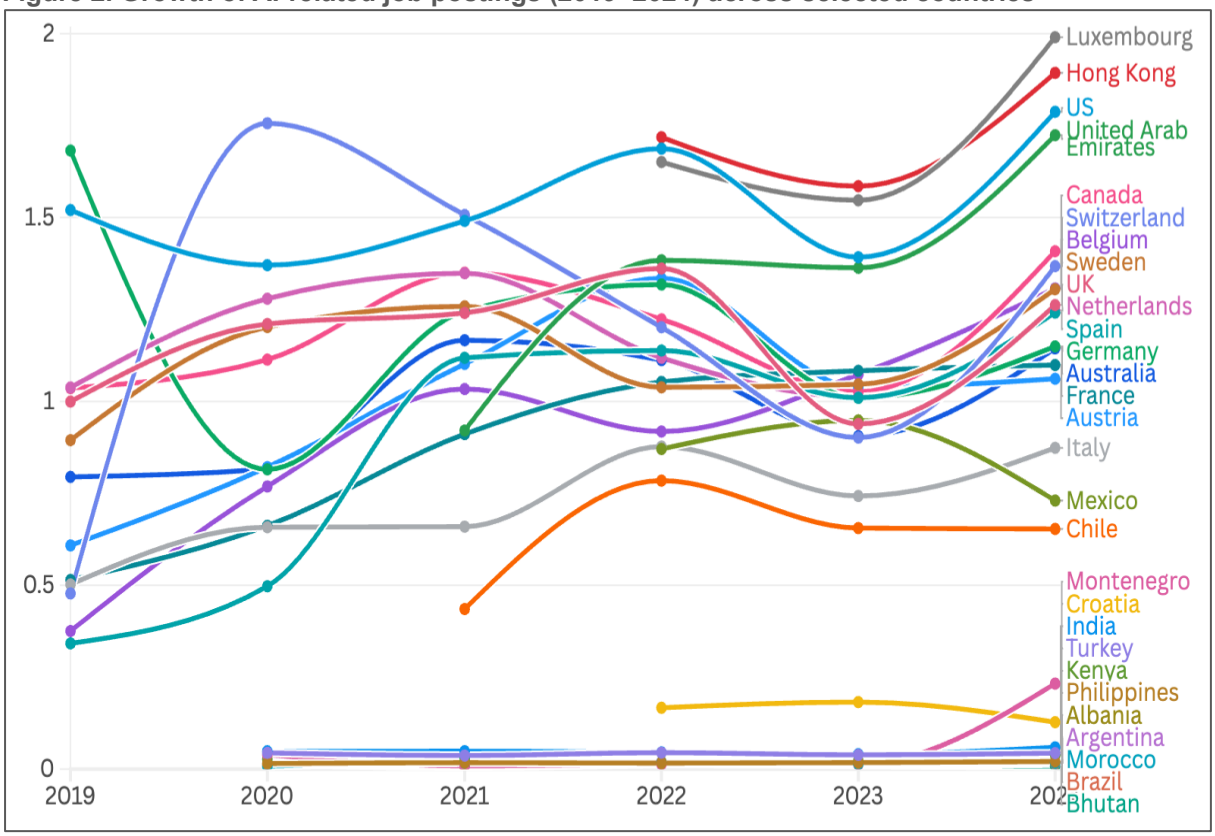
Source: Lightcast and ETF, 2025.

For a better understanding of evolving nature of AI-related tasks and skills, it is useful to look at the content of online job postings that included AI-related skill requirements. By looking at any job advertisement (across any occupation or sector) that includes at least one AI-related skill in its description, it is possible to identify the number and trends of “AI-related job postings”. Indeed from 2010 to 2024, the number of AI-related job postings has grown exponentially. This approach captures both specialised AI occupations (e.g., machine learning engineer, AI researcher) as well as broader roles (e.g., marketing analyst, logistics coordinator, desk clerk) that increasingly require interaction with or use of AI tools and technologies.

This approach reflects the growing integration of AI systems into a wide variety of workplace settings. For example, a job posting for a warehouse supervisor may be considered AI-related if it requires experience with predictive analytics or AI-powered inventory systems. Similarly, a customer service agent role may qualify if it involves using AI-based chatbots or natural language processing tools. According to the Stanford AI Index (2025), the share of AI-related vacancies among all online job postings grew more than sevenfold globally. The Lightcast Global AI Skills Outlook (Lightcast, 2024) confirms this trend, noting that demand for AI skills has more than doubled across major

economies in just five years. Emerging economies are increasingly contributing to this rise, with India, Nigeria, and Brazil showing strong acceleration despite starting from a lower base (Figure 2).

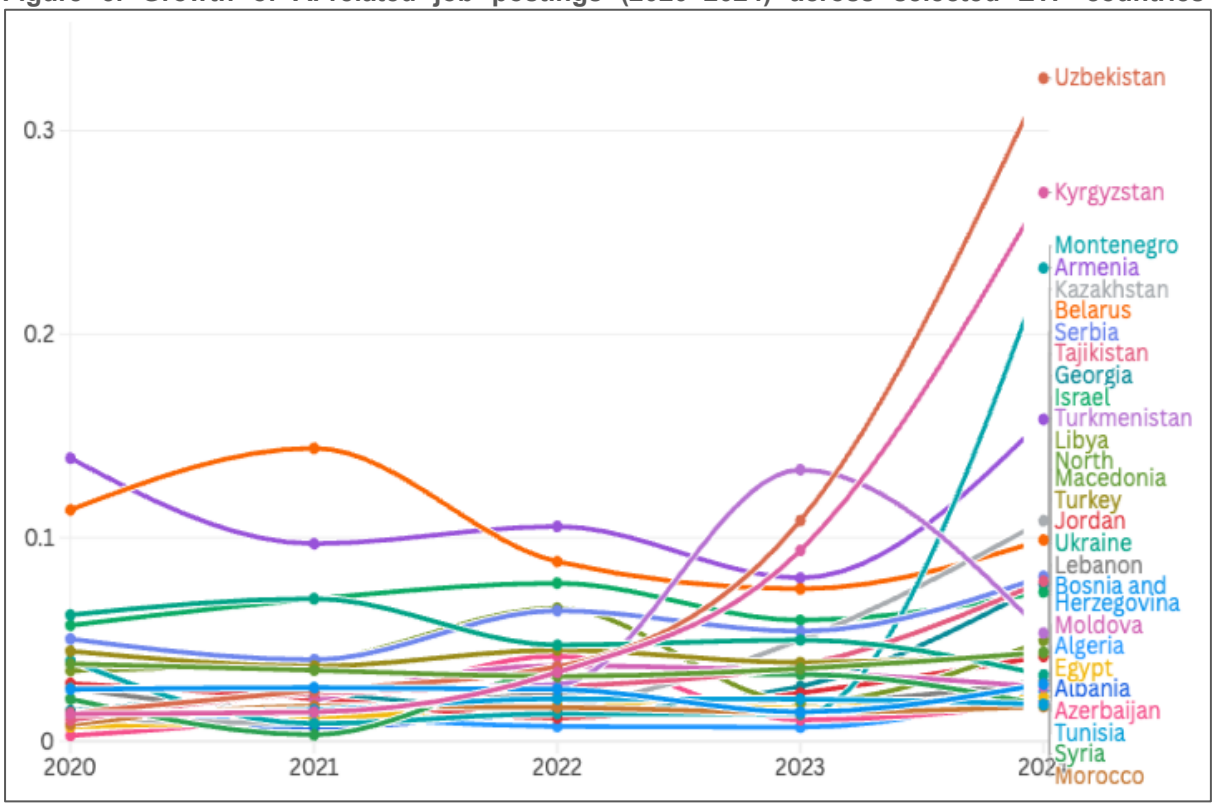
Figure 2. Growth of AI-related job postings (2019–2024) across selected countries



Source: Lightcast and ETF, 2025.

Figure 3 presents the growth of AI-related Job Postings (2019–2024) across selected ETF countries. Similar to the growing share of AI-related vacancies among all online job postings in advanced and emerging economies, the AI-related vacancies have also increased in many ETF partner countries, albeit in a smaller scale. Important to note is the notable increase of AI-related job postings in countries where there was none in the past as in the case of Central Asian countries (Uzbekistan, Kyrgyzstan, Kazakhstan, Turkmenistan, Tajikistan). On the other hand, there has been a more consistent base and gradual increase in countries such as Montenegro, Armenia, Ukraine, Serbia, Georgia, Belarus and Israel. Finally, these group is followed by other countries such as Albania, Bosnia and Herzegovina, North Macedonia, Moldova, and Lebanon.

Figure 3. Growth of AI-related job postings (2020–2024) across selected ETF countries



Source: Lightcast and ETF, 2025.

Moreover, AI adoption is no longer confined to the ICT sector. Lightcast (2024) and the WEF (2025) highlight growing AI skill demand in finance, logistics, manufacturing, education, and especially healthcare, where applications include diagnostics, clinical decision support, and predictive analytics. These changes reflect AI's increasingly transversal nature, with capabilities embedded in non-digital roles, from data-informed educators to autonomous supply chain managers. Based on the analysis of global online job postings, AI-related skills demand can be observed in almost all sectors, albeit in varying degrees (Figure 4). While ICT sector still dominates the demand for AI-related skills with 10.6%, this is followed by science and research (6.4%), marketing and public relations (5.1%), design-media and writing (4.2%), social analysis and planning (3.1%), engineering (2.8), military (1.8%), performing art (1.8%), human resources (1.7%), and education and training (1.5%).

Figure 4. Share of AI-related job postings by sector

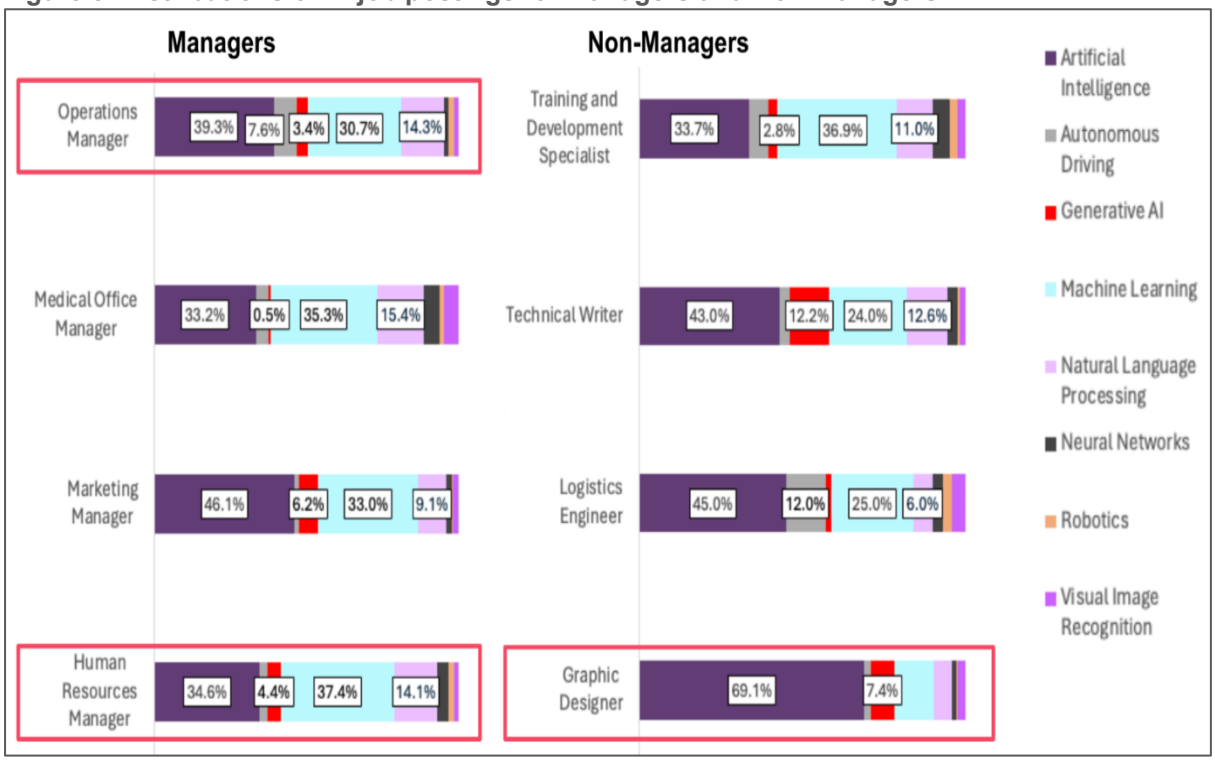
Source: Lightcast and ETF, 2025.

The impact of AI on the labour market is increasingly evident in the structure and content of job postings. Analysis of online vacancy data (see Figure 4) reveals a significant rise in demand for roles involving AI competencies, particularly in technically intensive fields such as data science, software engineering, and robotics. However, the integration of AI extends well beyond specialist ICT roles. AI capabilities are now being embedded across a wide range of occupational functions, including management, operations, human resources, and corporate strategy.

The widespread integration of Generative AI technologies is reshaping occupational functions not only within technical domains, but also across broader managerial and administrative roles. As shown in Figure 5, a substantial share of AI-related job postings now pertains to managerial positions, reflecting the increasing use of AI tools in decision support, strategy, and organisational planning.

Managers are progressively leveraging generative AI tools to enhance decision-making processes, streamline internal reporting systems, and facilitate change management strategies. These applications illustrate how digital fluency and AI literacy are becoming core expectations at all organisational levels, not limited to traditional technical teams. The increasing presence of AI in non-technical functions is blurring occupational boundaries and redefining what constitutes a digitally competent worker.

Figure 5. Distributions of AI job postings for Managers and Non-Managers



Source: Lightcast and ETF, 2025.

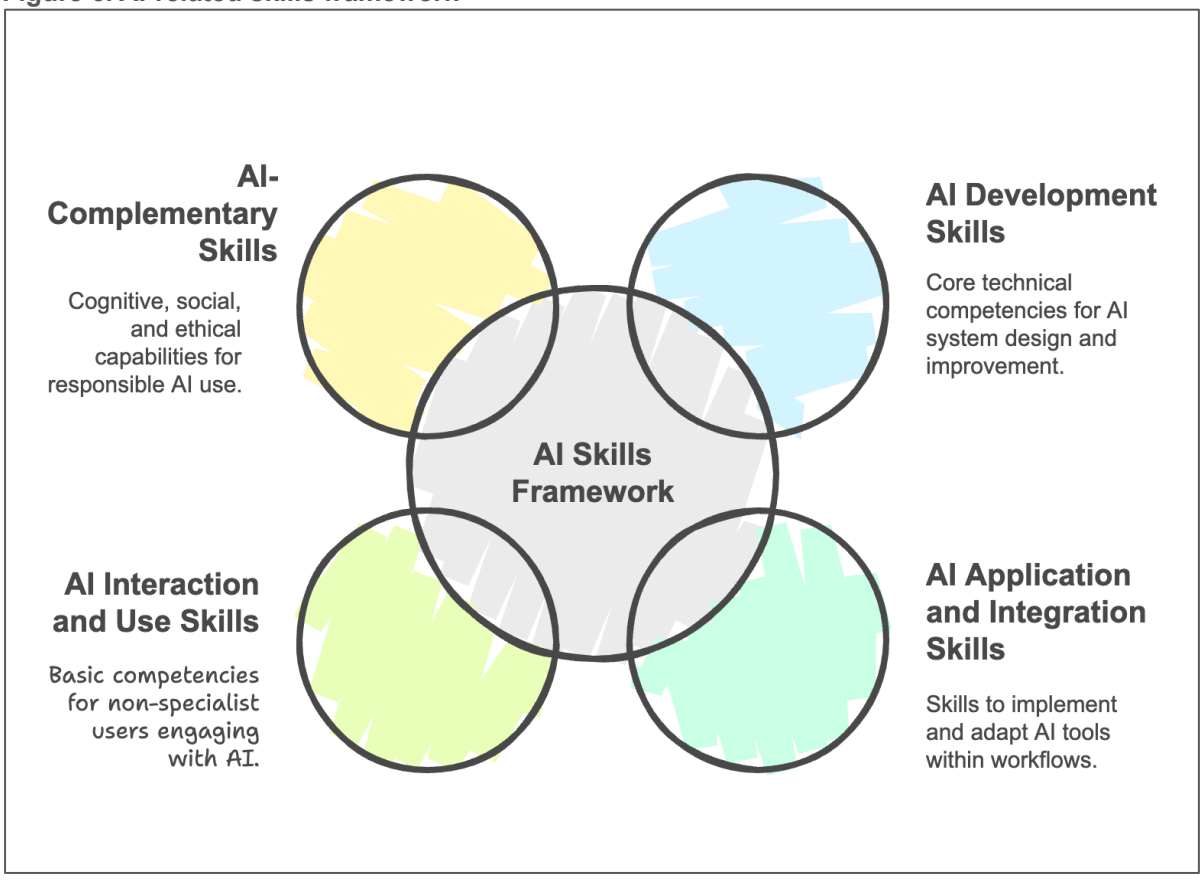
As the role of AI deepens in both high-skilled and routine occupations, education and training systems must prepare learners and workers across this continuum. Much like digital competence frameworks that distinguish between foundational, intermediate, and advanced skill levels (e.g., DigComp; EC, 2022), future skills strategies must adopt a layered approach to AI preparedness, recognising the diversity of tasks and roles impacted by AI technologies. The rapid diffusion of AI technologies across economic sectors has led to a complex and evolving spectrum of skill needs. These needs are no longer confined to specialised AI developers or data scientists but now affect a wide range of occupations, from warehouse operators and customer service representatives to educators, managers, and policymakers.

Accordingly, a new typology is necessary to conceptualise the breadth and depth of skills required to work with, alongside, or in response to AI systems. Based on the current trends, it is possible to propose a classification of emerging AI-related skill needs into four interdependent categories (Figure 6).

1. AI Development Skills: At the top of the technical hierarchy lie AI development skills. These are advanced capabilities required by software engineers, data scientists, machine learning researchers, and AI architects. They include expertise in programming languages (e.g. Python, R, C++), frameworks (e.g. TensorFlow, PyTorch), and mathematical modelling, as well as knowledge of emerging techniques in natural language processing (e.g. LLMs), reinforcement learning, and model interpretability. These skills are concentrated in a small subset of the workforce but are foundational to AI ecosystems. For example, roles such as machine learning engineer or AI research scientist dominate in AI research hubs such as the United States, China, Germany, and India. In ETF partner countries, the share of such

specialised roles is smaller, but growing. Initiatives such as the African Master's in Machine Intelligence (AMMI) or coding academies in Türkiye and Morocco represent local investments in high-end AI capabilities.

Figure 6. AI-related skills framework



Source: Lightcast and ETF, 2025.

2. AI Application and Integration Skills: A second, broader layer of skills concerns the application and integration of AI into sectoral and organisational processes. These competencies are increasingly required in non-ICT domains, such as logistics, healthcare, finance, and education. They include the ability to work with AI-enabled platforms (e.g. fraud detection in banking, diagnostic support in medicine), adjust and calibrate systems, and align AI outputs with business or public service goals.

Examples include:

- Operations managers using AI tools for predictive supply chain analytics.
- Education technology specialists integrating adaptive learning systems in curricula.
- Data analysts interpreting model outputs and training AI systems on domain-specific data.

3. AI Interaction and Use Skills: At a more foundational level, AI technologies are transforming expectations for basic digital literacy. As user-friendly AI tools become embedded in everyday work, even elementary and routine jobs require AI-awareness or system interaction competencies. This include:

- Clerical workers using generative AI to summarise texts or write emails.
- Retail staff operating AI-enhanced inventory and sales prediction tools.
- Call centre agents using AI assistants to route queries or draft responses.

These do not require technical knowledge of how the AI works but do require functional literacy - an understanding of system inputs/outputs, limitations, and proper usage. In this sense, AI use skills are becoming the new “baseline digital skills”, akin to email, word processing, or online search in previous decades.

4. AI-Complementary Skills: AI introduces new demand for complementary human skills that ensure its ethical, effective, and meaningful use. As AI automates cognitive tasks, the value of human judgement, empathy, adaptability, and moral reasoning increases. These skills, rooted in human cognition, emotion, judgement, and creativity—form the connective tissue of successful AI-human collaboration. These transversal skills are relevant across occupations and sectors, and include:

- Critical thinking to assess AI-generated outputs.
- Ethical reasoning in sensitive domains such as recruitment, policing, or healthcare.
- Collaboration in hybrid human-machine teams.
- Creativity in generating novel inputs or interpreting ambiguous outputs.

These competencies are highlighted in employer surveys (WEF, 2025), academic reviews (Mäkelä & Stephany, 2025), and educational reform discussions (UNESCO, 2023) (see Table 2). Countries that embed transversal skills in curricula and training, such as Finland and Singapore, are more likely to adapt successfully to AI-induced labour market shifts.

Table 2. Transversal Competencies in AI-Enhanced Workplaces

Competency Area	Typical Applications and Use Cases	Example Occupations	Tools, Platforms or Contexts
Critical Thinking	Interpreting and challenging AI outputs in decision-making processes	Compliance Analyst, Policy Officer, Data Reviewer	Risk analytics dashboards, regulatory compliance tools
Creativity & Innovation	Generating novel ideas in product design, campaigns, or educational content	Marketing Strategist, Educator, UX Designer	AI-based design platforms, adaptive learning systems
Socio-emotional Intelligence	Managing human-machine interactions, team collaboration, client communication	Nurse, Manager, Customer Experience Specialist	Health monitoring AI, CRM systems, virtual assistants
Adaptability & Learning-to-Learn	Responding to rapidly evolving tools and procedures, upskilling through self-directed learning	Logistics Planner, SME Owner, Journalist	Online training modules, AI-supported writing tools
Ethical Judgement & Responsibility	Assessing fairness, bias, and societal implications of AI use in professional settings	Editor, Civil Servant, Legal Advisor	AI audit interfaces, bias detection software
Interdisciplinary Fluency	Applying knowledge across domains, such as tech-humanities or science-policy linkages	Researcher, Consultant, Project Coordinator	Interdisciplinary dashboards, scenario modelling tools

Source: Lightcast and ETF, 2025.

4. AI Literacy for all: A foundational capability

In addition to evolving spectrum of AI-related skills needs, there is a growing consensus on the importance of developing AI literacy across the workforce, not just for technical specialists but for all workers interacting with AI systems. Sometimes called a kind of “driving license” for operating in digital age, AI literacy is increasingly recognised as a foundational skill – an essential enabler of human agency, resilience, and inclusion in AI-augmented environments. It refers to the ability to understand, use, monitor, and critically reflect on AI systems. More than technical familiarity, AI literacy encompasses awareness of how AI works, its potential and limitations, and its social, ethical, and economic implications. In this sense, it builds on and extends existing notions of digital, data, and media literacy.

In practice, AI literacy comprises three interrelated domains. The first is technical literacy: basic knowledge of how AI systems operate, including familiarity with machine learning, algorithms, and

data-driven technologies. While not all workers will develop or train models, a basic understanding of how AI applications function is increasingly required across professions, from customer service to legal advice and public administration.

The second domain is analytical literacy, or the ability to interpret and evaluate AI outputs in real-world settings. This includes using AI-generated insights to support decision-making, validating data sources, and recognising when human oversight is necessary. For example, a procurement officer assessing supplier risk through an AI tool must be able to question anomalies or investigate flagged results before acting on recommendations.

The third domain concerns ethical and societal literacy. As AI becomes embedded in everyday life, workers need to be aware of issues related to data privacy, algorithmic bias, transparency, fairness, and accountability. This extends to understanding the role of AI in shaping human behaviour, influencing public discourse, or reinforcing existing inequalities. Cultivating this form of literacy empowers individuals not just to comply with AI systems, but to interrogate and shape them.

AI literacy thus functions both as a practical competence and a civic capability. It prepares people to work safely and confidently in AI-enhanced workplaces and to make informed choices in a society where automated systems influence access to services, information, and rights. For this reason, several experts have likened AI literacy to a new kind of “AI driving licence” - a minimal and necessary condition for responsible participation in the digital economy.

The relevance of AI literacy is evident across sectors. In education, teachers are expected to evaluate and adapt content generated by AI tutoring platforms. In healthcare, nurses and technicians must understand how diagnostic algorithms support (but do not replace) clinical judgement. In logistics and manufacturing, workers interact with robots and wearables that require basic familiarity with automation protocols and safety rules. These tasks do not always require advanced technical training but depend on the kind of situational awareness and ethical discernment that AI literacy enables.

AI literacy is not just about employment; it is also about empowerment: It concerns how societies educate citizens to engage with the future of technology and how education systems equip learners not only to operate machines, but to question their design, governance, and implications. This has deep implications for curriculum design, particularly in general education. As noted in UNESCO (2023), AI literacy should begin in primary school, building progressively through STEM education, interdisciplinary learning, and lifelong learning opportunities.

Workplace training also plays a vital role. Employers in finance, public administration, and health are beginning to offer AI awareness courses, often as part of broader digital upskilling initiatives. Governments are supporting these efforts through national AI strategies and investment in public education programmes. In ETF partner countries, early efforts in Tunisia, Georgia, and Ukraine have introduced AI literacy modules into vocational education and civil service training, often in partnership with international agencies.

AI literacy is an indispensable skill in the AI economy – relevant not only to developers, but to users, maintainers, and society at large. It ensures that individuals can interact with AI systems confidently, critically, and ethically. As the pace of AI adoption accelerates, equipping the workforce with this capability will be central to promoting inclusive, informed, and human-centred digital transformation.

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