EUROPE *AT WORK* IN THE AGE OF *GENERATIVE AI*

How artificial intelligence is reshaping entry-level employment, skills and job inclusion across Europe.

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»INCO

Mario Nava

Director-General at the Directorate-General for Employment, Social Affairs and Inclusion of the European Commission

Technological transformations have always been a major driver of changes in labour markets. This was as true when the steam engine was introduced, as it is today with the increasingly widespread use of Artificial Intelligence and other advanced digital tools.

By and large, the overall effects of these transformations have been positive, with an increase in aggregate productivity, and a shift away from repetitive and potentially dangerous tasks.

Although the overall volume of jobs remains stable, technology impacts certain sectors more than others, in some cases with job losses. Behind every statistic there is a person, a family, a community, who should be supported and accompanied throughout these changes. Investments in education, training, and life-long learning; inclusive and well-funded social protection systems; and a dynamic and competitive business environment, where the workforce from declining sectors can easily be re-absorbed in other, emerging and growing ones, are all key.

Technology can fundamentally alter production processes, organisational dynamics, as well as the content of tasks within each job. When looking at these qualitative changes, we must be mindful that people must always be at the centre, and that ultimately technology must be a tool to serve people – not the other way around.

Artificial Intelligence is being increasingly used across sectors and jobs, at different speeds. As Niels Bohr said, "it is difficult to make predictions, especially about the future." But given what we know already today about the capabilities of AI systems, it is prudent to assume that all jobs in all sectors will, in one way or another, be impacted. Europe must be ready for that and prioritise forms of AI and other advanced digital tools that augment human capabilities, not simply replace them.

Regulation can play a role. In the EU we already have a solid legal framework to build on, such as the Artificial Intelligence Act, the General Data Protection Regulation, the Platform Work Directive, and our labour and social acquis. Effective enforcement, which requires transparency and accountability in key technologies, remains essential. New targeted legislation to adapt existing legal protections in this AI-driven "brave new world" remains an option to consider, if we want to create the right conditions for quality jobs to flourish in Europe.

Ultimately, we must accept that trying to stop technological change is a fool's errand. However, we can shape it to serve our "social market economy" that strives to achieve at the same time high competitiveness, full employment, social progress, environmental protection, as well as scientific and technological advances.

Nicolas Hazard

Founder and President at INCO

The rise of Generative AI is not a distant shift but a current reality, with over 7.4 million European job postings already demanding AI-related skills. While 74% of SMEs struggle to find the talent they need, only 15% of adult workers have received the necessary training to bridge this gap. At INCO, our role is to forge the coalitions needed to democratize this expertise, moving beyond automation to empower every individual. By transforming day-to-day tasks into high-value opportunities, we ensure that no one is left behind in Europe's new digital frontier. Together, we are building a future of work where technology serves as a bridge to inclusion for all."

Liza Ateh

Head of Google.org EMEA

At Google.org, we have long believed that the benefits of technology should be accessible to everyone. Since 2015, Google has trained over 21 million Europeans on digital or AI skills to help them succeed at work, in the classroom, and in growing their businesses.

AI is presenting new challenges and opportunities for the European workforce. We've seen this "ripple effect" with every major technology shift, from computers to the Internet. And while research suggests that far more jobs will be introduced thanks to AI rather than lost, we can't ignore that there will be disruption - we have to prepare.

This research, conducted by INCO with our support, provides the granular, real-world data needed to move toward targeted, inclusive skilling, because our commitment to Europe isn't just about developing the next generation of AI tools; it's about ensuring the European workforce is ready to lead with them. This is why we aren't just supporting INCO to publish findings—we are investing in the future. Building on the insights in this report, Google.org is proud to provide a significant grant to INCO to develop a specialized AI skilling program for university students across Europe. By equipping the next generation of graduates with the practical AI fluencies identified in these pages, we are helping to ensure that Europe's entry-level talent is not just "AI-aware," but "AI-ready."

The path forward is one of shared responsibility and shared opportunity. We invite you to dive into this research and join us in building a more inclusive, resilient, and innovative European workforce.

Becky Ferguson

SVP of Philanthropy at Salesforce
CEO of Salesforce Foundation

AI literacy is more than just knowing this technology exists — it's the ability to work alongside AI to achieve success. This report provides essential data to help bridge the gap between technological potential and human readiness, exploring how AI can serve as a tool to help unlock professional potential.

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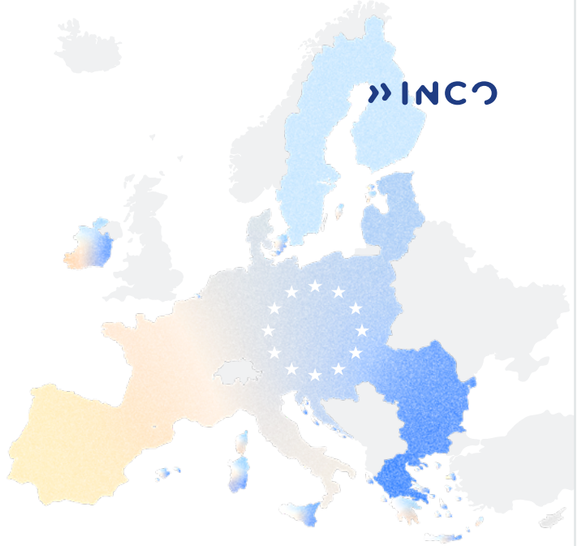
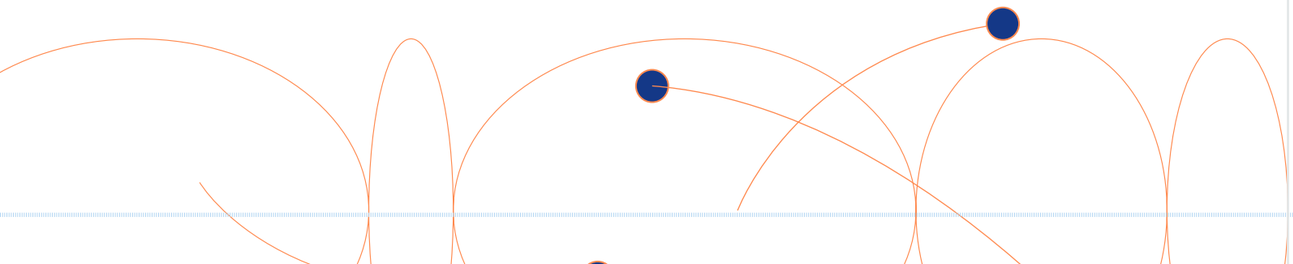
Introduction & Objectives



It is currently difficult to browse LinkedIn or read the news without encountering “Foundations of AI” courses or warnings of imminent job displacement. However, while AI is undeniably reshaping global labour markets, obtaining reliable, granular data on its specific impact remains a challenge. Most available statistics are either too broad (“X million jobs impacted”) or too speculative (“X % of 2030 jobs don’t exist yet”), making it difficult tograsp how AI is truly transforming day-to-day roles.Most available statistics are either too broad (“X million jobs impacted”) or too speculative (“X % of 2030 jobs don’t exist yet”), making it difficult to grasp how AI is changing actual work.

Across Europe, AI’s influence is already visible but uneven. According to **Cedefop’s 2024 AI Skills Survey**, around **one in four European workers** report that they or their colleagues now use AI tools in their day-to-day work, a figure expected to rise sharply in the next two years as digital tools diffuse beyond tech sectors (Cedefop, 2024). Meanwhile, the **European Commission’s 2024 Labour Market and Wage Developments Report** shows that demand for digital specialists is growing nearly **three times faster than overall employment**, and that job postings mentioning AI or automation have more than **doubled since 2022** (European Commission, 2024).

Despite frequent media warnings, the data suggest that AI has not caused widespread job destruction. An **OECD 2024 analysis** found no evidence that automation leads to net employment loss across member states; in fact, total employment has continued to grow even in sectors with high AI adoption (OECD, 2024a). Instead, the technology is **reshaping job content**: automating repetitive tasks while increasing the demand for advanced problem-solving, analytical, and AI-interaction skills. In the same study, **over 60 % of workers exposed to AI tools said their tasks had changed**, and **80 % reported that AI had improved their performance**, with **60 % saying it made work more enjoyable** (OECD, 2024b).



However, this transformation is not equally distributed. **OECD research** shows that workers without tertiary education, older workers, and women face a **higher risk of exclusion** from AI-driven labour markets (OECD, 2024c). Similarly, **Cedefop’s 2025 insights on digital skill mismatches** highlight that while demand for AI-literate professionals is accelerating, supply lags behind, particularly among small enterprises and in regions with limited training infrastructure (Cedefop, 2025).

With this report, we aim to bring the AI conversation back to tangible realities:

- Which careers and occupations are being transformed most profoundly.
- What this means for skills, training, and career resilience.
- How employers’ needs are evolving in real time.
- And what policymakers, educators, and businesses can do to ensure that workers - especially under-represented groups - are not left behind.

To achieve this, we reviewed extensive literature from **OECD, Cedefop, and the European Commission**, processed **millions of online job listings across EU and EEA countries** to capture evolving employer demands, and conducted **hundreds of interviews** with jobseekers, hiring managers, and academics. This mix of quantitative and qualitative evidence provides a more grounded understanding of how AI adoption is reshaping Europe’s labour market.

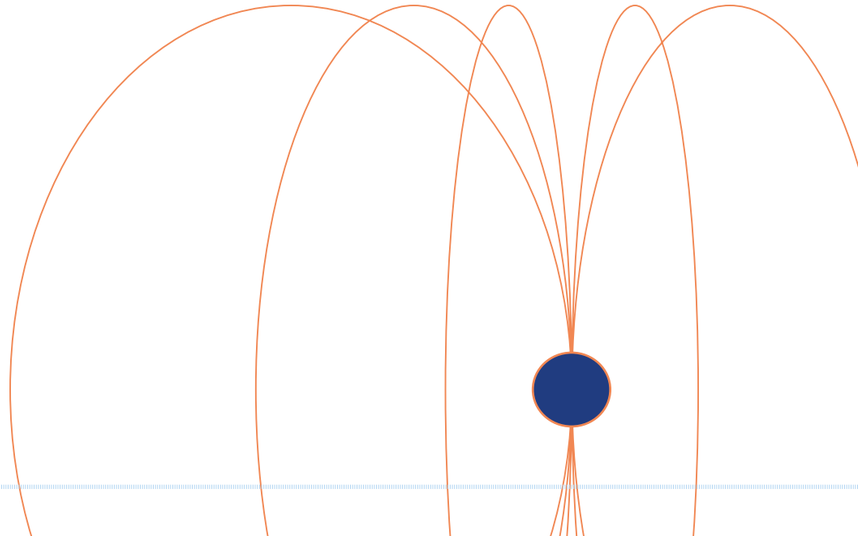
AI remains one of the fastest-moving technologies in human history. Its effects on how we work, learn, and communicate evolve as quickly as its applications become more widespread, powerful, and accessible. This report draws on data collected between **January 2022 to December 2025**, and we will continue to update these findings to ensure their ongoing relevance in a rapidly shifting landscape.

Whether you are a jobseeker, a worker, an employer, or an educator, our hope is that these findings will help you better understand and adapt to the influence of AI on your field.

02

Methodology

The data captured in this report was collected by INCO using Natural Language Processing techniques across very large job postings datasets. Raw data was cleaned, processed and analysed, and then challenged against qualitative inputs collected through surveys and interviews with jobseekers, hiring managers, and AI/workforce experts from across Europe. Geographically, the data covers all European Union member states, as well as the United Kingdom.



02/1 QUANTITATIVE LAYER

JOB-ADVERTISING CORPUS.

A total of **6,206 job sources** (public portals, commercial boards and employer ATS feeds) were scraped in fifteen languages. The window runs 1 January 2022 to 31 december 2025.

AI KEYWORD LEXICON.

A **220-term**, multi-lingual list captured AI references in titles, duties and skills fields; fast-text similarity handled synonyms.

VACANCY UNIVERSE.

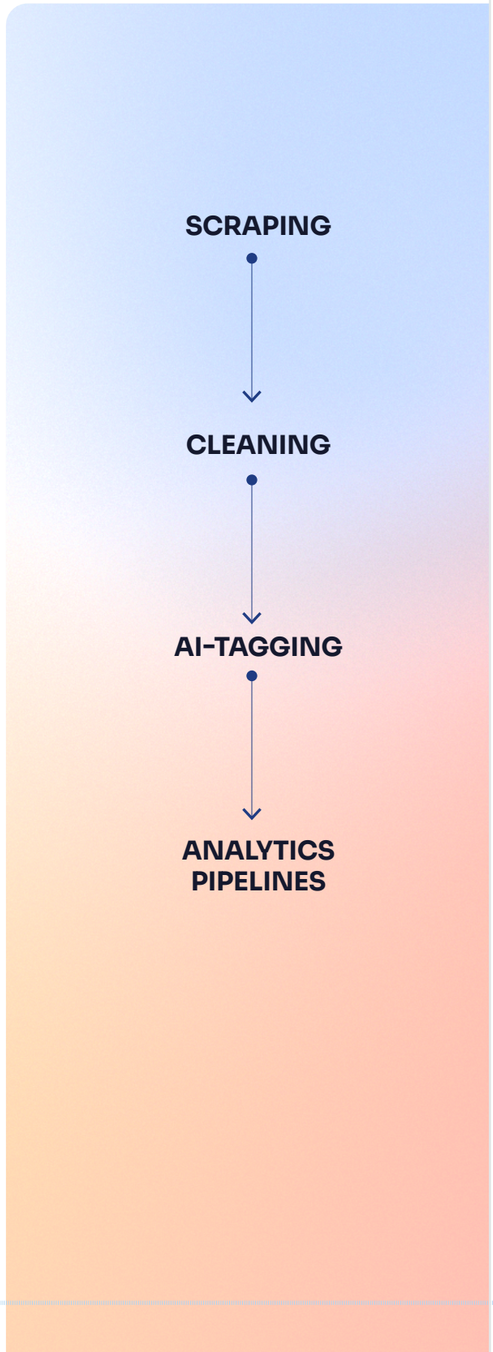
After de-duplication and language harmonisation, **31.2 million** unique European postings remained. 7.47 million contained at least one AI reference and formed the core dataset, that's 24%.

WAGE DATA.

Advertised salaries were matched to Eurostat's Structure of Earnings Survey t(wage-index adjusted) and ≈ 195 000 Glassdoor/Indeed self-reports.

TASK & AUTOMATION DATA.

The OECD Skills-for-Jobs database (v 2024-2) provides task-exposure scores that inform role deep-dives.



02/2 QUALITATIVE LAYER

- Semi-structured interviews and surveys balance geography (all EU-27 + UK), sector (corporates, SMEs, public agencies, NGOs) and stakeholder type (employer, learner, union, tech vendor).

02/3 LIMITATIONS & MITIGATIONS

- Language nuance. Multi-word competence phrases, e.g. « analyse des données », risk under-counting. Fast-text similarity and manual checks correct the largest misses.
- Unadvertised hiring. Internal promotions and referral pipelines are invisible to scraping. Interview probes capture qualitative offsets.
- Self-reported wages. Glassdoor data skew toward English-speaking countries; Eurostat medians anchor national differentials.
- Rapid tool churn. New AI product names appear faster than any static lexicon; a monthly refresh loop keeps keyword capture current.

03

AI Skills in Digital Careers

Entry-level roles within the technology sector are—unsurprisingly—being profoundly transformed by Generative AI. Current job postings identify five key areas where AI penetration is most significant: software and web development, data analysis and business intelligence, cybersecurity, UX/UI design, and cloud engineering. Across these disciplines, GenAI is primarily utilised to automate repetitive processes, enabling professionals to prioritise strategic and analytical responsibilities.

03/1 Software & Web Development
03/2 Data Analysis & Business Intelligence
03/3 Cybersecurity & network operations
03/4 UX/UI & digital product design
03/5 Cloud & DevOps engineering

Role family	# ads citing AI in that family (January 2022 – December 2025)
P.17 SOFTWARE & WEB DEVELOPMENT Code assistants (e.g. Gemini Code Assist, Copilot) handle boilerplate code, testing, and documentation; juniors focus on logic, UX fixes, and integration tasks.	*803,000* *15%* Share of all ads citing AI (Jan22–Dec23) *41%* Share of all ads citing AI (Jan24–Dec25)
P.18 DATA ANALYSIS & BUSINESS INTELLIGENCE Data cleaning, model fitting, and dashboard generation increasingly automated; entry-level analysts now interpret insights, validate outputs, and communicate results.	*714,000* *18%* Share of all ads citing AI (Jan22– Dec23) *47%* Share of all ads citing AI (Jan24– Dec25)
P.19 CYBERSECURITY & NETWORK OPERATIONS AI threat-detection engines automate log analysis and anomaly flagging; analysts focus on incident response and forensics. Chatbots triage routine alerts.	*514,000* *14%* Share of all ads citing AI (Jan22– Dec23) *42%* Share of all ads citing AI (Jan24– Dec25)
P.20 UX/UI & DIGITAL PRODUCT DESIGN Generative AI drafts wireframes, content, and visual prototypes; designers iterate and test user flows, emphasizing accessibility and brand coherence.	*416,000* *13%* Share of all ads citing AI (Jan22– Dec23) *41%* Share of all ads citing AI (Jan24– Dec25)
P.21 CLOUD & DEVOPS ENGINEERING Automated monitoring, pipeline deployment, and capacity scaling via AI orchestration; engineers focus on reliability, governance, and cost optimization.	*389,000* *10%* Share of all ads citing AI (Jan22– Dec23) *37%* Share of all ads citing AI (Jan24– Dec25)

03/1

SOFTWARE & WEB DEVELOPMENT

TASK MIX SHIFT

Code generation, documentation, and unit testing - once the backbone of entry-level developer tasks - are now largely automated. Developers increasingly focus on creative problem-solving, debugging, and system integration. Industry benchmarks suggest that about 12–15% of development time has shifted from manual code production to solution architecture, code review, and AI prompt engineering. The workflow is now heavily collaborative between human coders and AI copilots.

TOP AI TOOLS USED

Entry-level developers routinely use GitHub Copilot, Gemini Code Assist, and Amazon CodeWhisperer to generate code, test scripts, and inline documentation. LLM-powered debugging in Replit Ghostwriter or VS Code Copilot Chat shortens development cycles. Generative design tools such as Midjourney for UI elements and Gemini for code translation are also becoming mainstream.

SHARE OF JOB ADS CITING AI SKILLS

Around 41% of software and web developer postings now reference AI capabilities, from “experience using AI code assistants” to “LLM integration.” This marks a near-tripling in two years, mirroring the broader automation of coding workflows.

Mateo — Amsterdam

Mateo joins his hybrid engineering team’s morning stand-up in Amsterdam, where his fintech startup manages real-time payment APIs across Europe. Overnight, Copilot has generated unit tests and auto-documented the latest commits in the main repository. Mateo reviews the output, refining logic and ensuring that AI-generated functions comply with local data protection standards and internal style guidelines.

Later, he collaborates with Gemini Code Assist to prototype a new customer onboarding feature, using plain-language prompts rather than writing every function manually. Debugging, prompt iteration, and peer review fill most of his afternoon. The AI automates syntax, regression testing, and documentation, freeing Mateo to focus on security, usability, and performance. For him, coding is no longer just about writing instructions, it’s about guiding intelligent systems to deliver compliant, reliable software at speed.

03/2 DATA ANALYSIS & BUSINESS INTELLIGENCE

TASK MIX SHIFT

Much of the repetitive data preparation and visualization work once done by entry-level analysts is now handled by AI. Cleaning, deduplication, and normalization are automated through intelligent ETL (extract-transform-load) pipelines. Visualization and narrative generation are often produced automatically, allowing analysts to devote more time to interpreting results and translating insights for business decisions. Estimates suggest that 9-11% of analysts' time has shifted from "data wrangling" to "storytelling" and validation work.

TOP AI TOOLS USED

BigQuery ML, Looker Studio, Tableau Pulse, and Power BI Copilot are now widely used to automate analysis and generate natural-language summaries. Gemini and ChatGPT Enterprise assist in building predictive models and generating contextual explanations for non-technical audiences. Automated code assistants in SQL and Python (e.g., Colab Gemini, GitHub Copilot) also help junior analysts write and debug queries faster.

SHARE OF JOB ADS CITING AI SKILLS

Approximately 47% of listings for data and BI analysts now mention AI or ML literacy, often specifying experience with LLM-integrated dashboards or model validation. This represents a doubling since 2023.

Leila — Milan

Leila works in the analytics team of a major retail group headquartered in Milan. Each morning, she opens Looker Studio dashboards automatically refreshed overnight by AI-powered ETL scripts. The system has already cleaned, merged, and normalized data from e-commerce, in-store sales, and logistics platforms, and even generated natural-language insights about changing consumer trends across Italy's northern regions.

Her day is less about spreadsheet maintenance and more about interpretation. She verifies that predictive models aren't overfitting seasonal anomalies and uses Gemini to generate executive summaries for the marketing and supply chain departments. When presenting to leadership, she prompts AI tools to visualize "what if" scenarios in real time. Her combination of business insight and AI literacy turns what used to be routine reporting into a strategic decision engine for the company's regional operations.

03/3 CYBERSECURITY & NETWORK OPERATIONS

TASK MIX SHIFT

AI-driven threat detection and behavioral analytics now automate much of the continuous monitoring that junior analysts once handled manually. Routine log parsing, malware identification, and anomaly flagging are increasingly performed by machine learning models, reducing false positives and allowing teams to respond faster. As a result, around 10-12% of analysts' time is being reallocated toward deeper incident forensics, red-team simulation, and policy hardening. Entry-level cybersecurity staff now focus on interpreting AI alerts, validating outputs, and investigating edge cases that automated systems can't classify with certainty.

TOP AI TOOLS USED

Security teams rely on platforms such as Google Chronicle, Microsoft Sentinel, and Palo Alto Cortex XSIAM, all of which integrate large-scale AI threat analytics. Generative AI copilots also support report drafting, breach summaries, and alert explanations. Automated playbooks built with SOAR (Security Orchestration, Automation, and Response) frameworks use AI to prioritize and route incidents dynamically.

SHARE OF JOB ADS CITING AI SKILLS

Roughly 42% of cybersecurity and network operations job postings now mention AI familiarity, typically framed as "AI-driven detection," "ML-based security analytics," or "automated incident triage." That's up from about 14% in 2023.

Jonas — Estonian

Jonas starts his morning in the operations center of a leading Estonian telecom provider in Tallinn. Overnight, AI-driven threat detection systems have processed millions of network logs, clustering anomalies and isolating suspicious patterns through Chronicle's behavioral models. His dashboard highlights only high-confidence risks that require human review - phishing attempts, lateral movement indicators, or zero-day exploits that automated tools couldn't fully resolve.

Instead of manually combing through log files, Jonas focuses on validating the AI's reasoning, investigating flagged events, and drafting concise threat summaries for internal teams. He uses generative copilots to produce executive-ready incident briefs or simulate possible attack vectors. His role hinges on understanding both cybersecurity frameworks and AI logic - ensuring automation remains transparent and accountable in a national context where digital infrastructure security is a matter of civic pride.

03/4

UX/UI & DIGITAL PRODUCT DESIGN

TASK MIX SHIFT

Generative design tools now automate the early concept and layout phase, producing multiple wireframes and visual assets in seconds. Designers increasingly operate as curators and testers, validating user flows and brand coherence rather than generating every asset from scratch. This shift frees roughly 8-10% of designers' time for user research, accessibility refinement, and experimentation.

TOP AI TOOLS USED

Design teams employ Figma AI, Adobe Firefly, and Uizard for automatic layout, copy, and asset generation. Gemini for Workspace assists in drafting design briefs and summarizing usability feedback. Automated A/B testing and sentiment analysis tools (like Optimizely AI and Hotjar Heatmap AI) help prioritize redesign decisions based on predictive insights.

SHARE OF JOB ADS CITING AI SKILLS

Roughly 41% of design-related job postings now mention AI proficiency - often framed around prompt design, AI asset generation, or A/B testing automation. This has nearly tripled since 2023, reflecting how generative design tools have become industry-standard.

Amira

Barcelona

Amira works on the product design team of a fast-growing mobility startup in Barcelona. Her mornings begin with reviewing three wireframe variations generated overnight by Figma AI, based on user analytics from the previous sprint. Rather than sketching from scratch, she curates and refines layouts, adjusting accessibility, hierarchy, and interaction flow. Using Adobe Firefly, she experiments with visual styles adapted for different customer segments, while Gemini drafts multilingual copy in Spanish and Catalan.

Later, Amira runs AI-assisted A/B tests and interprets sentiment data from user heatmaps and in-app feedback. Her role is about direction rather than execution, orchestrating generative design tools to ensure the product feels intuitive, inclusive, and on-brand. In a city defined by creativity and experimentation, Amira embodies the designer of the AI era: leveraging automation to amplify, not replace, human empathy and design sensibility.

03/5

CLOUD & DEVOPS ENGINEERING

TASK MIX SHIFT

Routine monitoring, capacity scaling, and deployment orchestration have become largely automated through AI-powered observability systems. Junior engineers now spend more time on troubleshooting, governance, and optimization rather than on manual script writing or pipeline management. About 10% of operational time has shifted from maintenance to proactive improvement and reliability testing.

TOP AI TOOLS USED

Cloud environments increasingly integrate Google Cloud AIOps, AWS DevOps Guru, and Azure Copilot for Cloud to predict incidents and optimize resource use. AI copilots in CI/CD platforms (like GitLab Duo or Jenkins AI) flag security risks, suggest rollout schedules, and reduce downtime.

SHARE OF JOB ADS CITING AI SKILLS

Approximately 37% of cloud and DevOps listings now require exposure to AI-driven observability or automation frameworks, up from 10% in 2023, underscoring how AI has become central to modern infrastructure management.

Ravi

Helsinki

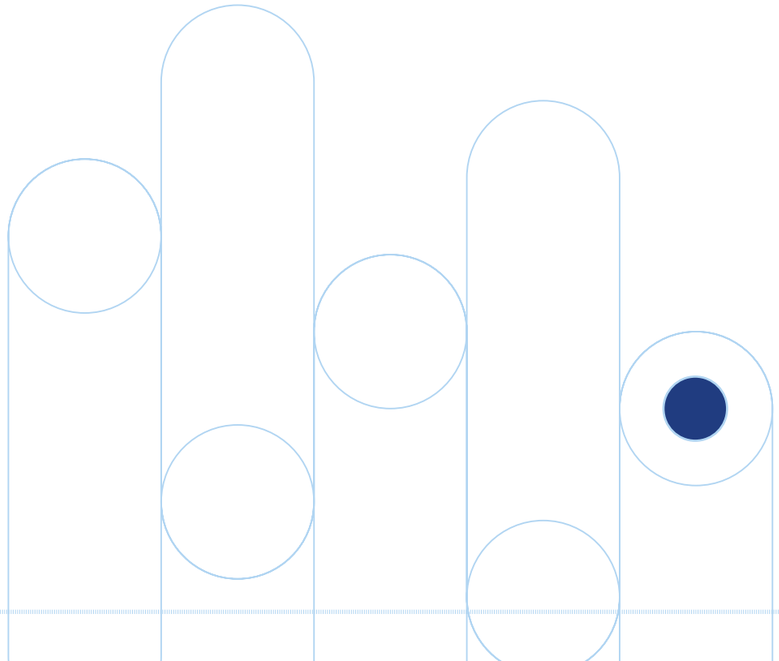
Ravi begins his day in Helsinki, overseeing infrastructure reliability for a Scandinavian SaaS company serving universities and research institutes. Overnight, Google Cloud AIOps analyzed terabytes of system telemetry, highlighting performance anomalies and suggesting resource reallocations. His first task is to assess these AI-generated recommendations — deciding which to accept and which to override ahead of the next product release.

Throughout the day, Ravi uses GitLab Duo pipelines integrated with predictive scaling tools to deploy updates and simulate traffic surges. Routine log analysis, patch sequencing, and performance testing are all automated, allowing him to focus on governance, cost optimization, and long-term resilience. In this increasingly autonomous environment, Ravi's expertise lies in managing balance — ensuring that the AI enhances reliability and sustainability without removing human accountability from the cloud.

04

AI Skills in non-tech-centric careers

In this section, we examine how Generative AI is reshaping roles and task distributions beyond the technology sector. From accounting to marketing, the transition is profound, with employer demand for AI-related skills rising steadily in recent years. Here too, the trend suggests that roles are generally not being replaced, but are instead being significantly augmented by AI tools, autonomous agents, and digital companions.



Role family	# ads in that family (January 2022 - December 2025)
P.25 FINANCIAL CONTROLLING & ACCOUNTING — AP/AR coding, invoice capture (OCR), reconciliations, variance analysis, and month-end narratives are now partially automated; staff redeploy time to scenario explanation and risk/compliance.	645,000
	11% Share of all ads citing AI (Jan22–Dec23)
	39% Share of all ads citing AI (Jan24–Dec25)
P.26 DIGITAL MARKETING & CONTENT — Generating ad copy, social posts, imagery/video drafts, SEO briefs, and A/B test ideas; analysts use AI dashboards to iterate creatives and budgets faster.	627,000
	17% Share of all ads citing AI (Jan22– Dec23)
	42% Share of all ads citing AI (Jan24– Dec25)
P.27 OPERATIONS & LOGISTICS — Route optimisation and predictive picking are automated; planners handle exceptions and stakeholder comms.	532,000
	11% Share of all ads citing AI (Jan22– Dec23)
	29% Share of all ads citing AI (Jan24– Dec25)
P.28 ADMINISTRATIVE & CLERICAL — Automatic minutes, document classifiers free time for stakeholder liaison.	503,000
	8% Share of all ads citing AI (Jan22– Dec23)
	26% Share of all ads citing AI (Jan24– Dec25)
P.29 ICT & TECHNICAL SUPPORT — Chatbots solve tier-1 queries; humans resolve conflicts and edge cases.	484,000
	12% Share of all ads citing AI (Jan22– Dec23)
	47% Share of all ads citing AI (Jan24– Dec25)

04/1

FINANCIAL CONTROLLING & ACCOUNTING

TASK MIX SHIFT

AI tools now automate many repetitive “laundry” tasks such as AP/AR coding, invoice capture via OCR, reconciliations, and variance analysis. Around 8–9% of accountants’ time is being reallocated from these routine processes to higher-value activities like scenario modeling, client interactions, and compliance oversight. Month-end closes are significantly faster and narratives are more data-rich, while human judgment focuses on explaining anomalies and advising on risk.

TOP AI TOOLS USED

Finance teams increasingly use tools like Google Vertex AI for anomaly detection and forecasting, Looker for dynamic BI dashboards, and Gemini for drafting reports or summarizing contracts. Spreadsheet copilots (in Excel or Google Sheets) now automate formula generation and audit trails, while AI-driven reconciliation tools streamline transaction processing.

SHARE OF JOB ADS CITING AI SKILLS

Roughly 39% of accounting and financial controlling job postings now seek AI proficiency — a more than threefold increase since 2023. Global financial roles are nearly 3× more likely to cite AI-related skills than other sectors.

Sofia — Lisbon

Sofia manages consolidated reporting for a mid-sized multinational based in Lisbon. Each morning, she reviews the results of automated reconciliations and anomaly detection models running on Google Vertex AI. Optical character recognition tools capture and classify invoices overnight, and Looker dashboards visualize real-time variances across business units. Rather than performing manual data checks, Sofia focuses on interpreting discrepancies and advising leadership on compliance risks or liquidity trends.

Her role demands both financial literacy and technical fluency. She understands how to prompt Gemini for automated report drafting, how to adjust machine-learning thresholds, and how to validate the AI’s recommendations. These capabilities allow her to deliver faster, more accurate insights, repositioning accounting from transactional record-keeping to strategic analysis.

04/2

DIGITAL MARKETING & CONTENT

TASK MIX SHIFT

AI is transforming creative workflows. Generating ad copy, social posts, imagery or video drafts, SEO briefs, and A/B test ideas are now semi-automated. Marketers spend less time on first drafts and more on strategy, brand storytelling, and optimization. Campaign iteration cycles are shorter, as AI dashboards allow instant feedback loops between creative testing and budget performance.

TOP AI TOOLS USED

Platforms like Adobe Firefly, Canva Magic Studio, and Google Gemini support generative content creation, while HubSpot AI and Jasper assist in campaign ideation and personalization. Data analysts rely on Looker and Google Ads' Performance Max for automated targeting and analytics.

SHARE OF JOB ADS CITING AI SKILLS

About 42% of marketing and content roles now mention AI-related competencies — the highest among all job families. Demand centers on prompt-writing, AI-powered SEO, and familiarity with generative design tools.

Malik

Berlin

Malik leads performance marketing for a sustainability-focused agency in Berlin. Using Gemini and Jasper, he generates initial drafts of ad copy, SEO briefs, and video scripts tailored to different audience segments. Adobe Firefly supports the creation of visuals aligned with brand tone, while Looker Studio tracks performance data in real time. AI tools handle segmentation, A/B testing, and content versioning, enabling him to focus on campaign strategy and creative direction.

The skills profile for Malik's role combines marketing fundamentals with technical dexterity. He uses prompt-writing techniques to steer generative tools, interprets data patterns using BI dashboards, and applies ethical judgment to ensure brand authenticity. AI augments his output volume and analytical precision, freeing capacity for innovation and narrative craft.

04/3

OPERATIONS & LOGISTICS

TASK MIX SHIFT

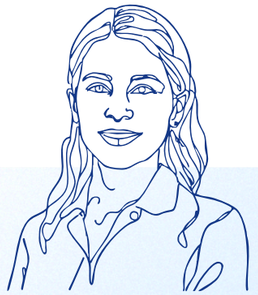
Automation and AI-driven optimization are reshaping logistics. Route planning, inventory forecasting, and predictive picking are now largely automated, freeing planners to handle exceptions, vendor coordination, and sustainability tracking. AI supports real-time decision-making, improving delivery reliability while reducing idle capacity and waste.

TOP AI TOOLS USED

Google Cloud's Vertex AI powers demand forecasting; SAP AI and Oracle Logistics AI automate resource allocation and scheduling; Gemini assists in summarizing supply-chain reports and exception management. Warehouses employ computer vision systems to detect anomalies and optimize pick-path efficiency.

SHARE OF JOB ADS CITING AI SKILLS

Around 29% of operations and logistics postings reference AI — up from just 11% two years ago. Employers now seek candidates versed in predictive analytics, workflow automation, and AI-enhanced ERP systems.



Anna

Łódź

Anna oversees supply-chain operations for a national retailer in Łódź. Vertex AI Forecasting models anticipate daily shipment volumes, while SAP AI optimizes vehicle routing and warehouse picking sequences. Routine scheduling tasks have been automated, and Anna now spends most of her time managing exceptions, validating data inputs, and communicating with partners on disruptions or sustainability metrics.

Her effectiveness depends on a solid grasp of both logistics processes and data-driven reasoning. She monitors algorithmic decisions, interprets predictive dashboards, and adjusts operational parameters when contextual knowledge is required. The integration of AI has reduced idle time and fuel consumption, while enabling Anna to operate with greater foresight and control.

04/4

ADMINISTRATIVE & CLERICAL

TASK MIX SHIFT

The classic clerical workflow - scheduling, transcribing, document sorting - is being heavily streamlined by AI. Automatic meeting minutes, document classifiers, and digital assistants reduce administrative drag, allowing staff to focus on stakeholder communication, project coordination, and decision support.

TOP AI TOOLS USED

Gemini for Workspace, Microsoft Copilot, and Otter.ai are the leading tools for drafting correspondence, summarizing calls, and managing documentation. Workflow automation platforms like Zapier and UiPath further reduce repetitive handling of documents and emails.

SHARE OF JOB ADS CITING AI SKILLS

Roughly 26% of administrative roles now call for AI literacy, a sharp rise from 8% two years ago. Employers prioritize familiarity with office AI assistants, transcription tools, and workflow automation software.

Léa

Lyon

Léa coordinates cross-departmental operations for a large nonprofit headquartered in Lyon. With Gemini, she automates meeting summaries, drafts correspondence, and maintains documentation standards. Zapier workflows integrate HR, finance, and communication systems, ensuring data consistency without manual input.

Her evolving skillset blends organizational competence with digital literacy. Léa structures prompts to refine AI-generated outputs, curates shared knowledge bases, and applies judgment to sensitive communication tasks that require human tone and discretion. As automation handles repetitive processes, her role increasingly emphasizes coordination, accuracy, and stakeholder engagement.

04/5

ICT & TECHNICAL SUPPORT

TASK MIX SHIFT

Tier-1 customer queries are now largely automated through AI chatbots and virtual assistants, while human support teams focus on diagnosing complex issues, ensuring system security, and refining the chatbot's learning loops. This shift reduces resolution time and allows more consistent 24/7 service.

TOP AI TOOLS USED

Gemini for Support, Zendesk AI, and Intercom Fin are widely used for automated troubleshooting and knowledge base generation. Google Cloud Dialogflow and ServiceNow AI manage intent detection and escalation routing, while developers use GitHub Copilot for faster bug resolution.

SHARE OF JOB ADS CITING AI SKILLS

About 47% of ICT and tech support positions now reference AI-related skills, reflecting both the adoption of AI helpdesk tools and the growing demand for workers who can manage, fine-tune, and train them.

Darius

Manchester

Darius works in customer operations at a software company in Manchester. Zendesk AI and Dialogflow manage first-tier user queries, escalating unresolved cases with annotated logs for review. Darius uses Gemini for Support and GitHub Copilot to diagnose complex issues, validate solutions, and update the company's AI-generated knowledge base.

Technical support has evolved from reactive ticket handling to proactive system optimization. Darius's role combines problem-solving, data interpretation, and model-training oversight. His understanding of conversational AI and workflow automation enables the company to reduce resolution time while maintaining a high standard of customer experience.

05

How is AI perceived by career starters and workers in Europe?

This section analyses the perspectives of nearly 1,500 early-career professionals and established workers regarding Generative AI's impact on their roles and career trajectories. While AI is broadly viewed as an essential tool for creating new opportunities, a significant consensus emerged: many feel they lack sufficient access to develop these skills. Consequently, there is a pervasive fear of being left behind due to a lack of formal upskilling opportunities.

05/1

CAREER STARTERS

The data was collected through an online survey conducted among 748 young jobseekers aged 18 to 30 across 15 EU countries and the UK. The sample included a balanced mix of educational backgrounds (vocational, tertiary, and postgraduate) and employment statuses (unemployed, in internships, or in early full-time roles). The survey was administered anonymously and consisted of multiple-choice questions exploring perceptions, expectations, and experiences related to AI in the workplace, ensuring comparable responses across all participating countries.

Question 1

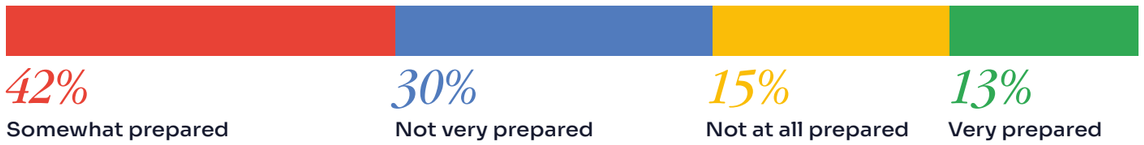
How do you feel about the impact of artificial intelligence (AI) on jobs overall?

Question 2

Do you believe AI will boost or harm your own career prospects?

Question 3

How prepared do you feel to work in a world where AI is widely used across jobs?

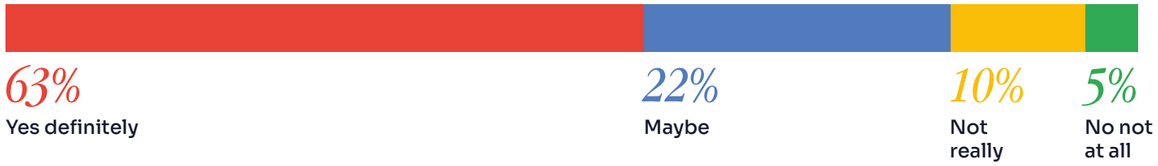


Question 4

Do you think your current skills are relevant for jobs that involve AI tools or systems?

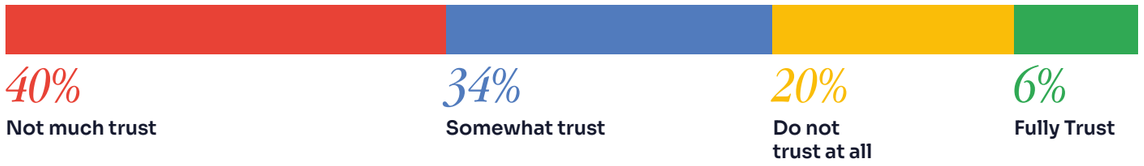
Question 5

Would you be interested in receiving training to better understand or work with AI tools?



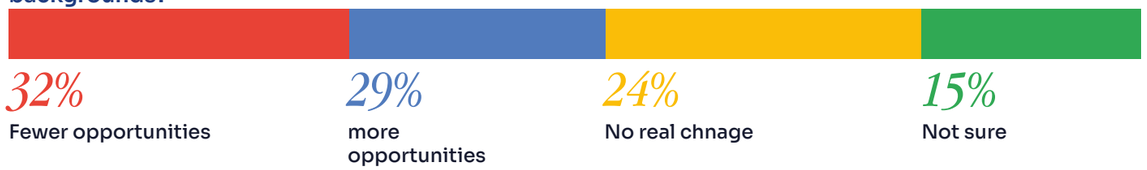
Question 6

How much do you trust employers to use AI fairly in hiring and management decisions?



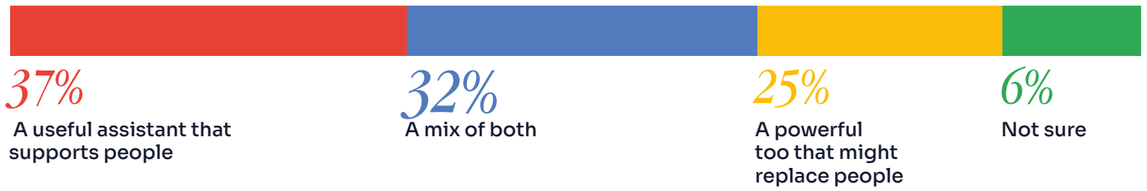
Question 7

Do you think AI will create more or fewer opportunities for people from diverse or underserved backgrounds?



Question 8

Which of the following best describes how you see AI at work?



Question 9

Would you be more or less interested in working for a company that uses AI tools in its operations?

Based on the estimated responses from 748 young jobseekers across Europe, perceptions of artificial intelligence in the world of work appear to be cautiously optimistic but marked by uncertainty and uneven preparedness. A majority (around 56%) view AI's overall impact on jobs positively, and nearly half (47%) believe it will personally boost their career prospects. However, a significant minority still express concern: roughly one in five fear AI could harm their career, and another fifth remain unsure. This blend of optimism and apprehension suggests that while young Europeans recognize AI's transformative potential, many still feel it could disrupt established career paths or amplify inequalities in the job market.

When it comes to readiness, only about half feel even "somewhat prepared" to work in an AI-enabled environment, and most admit their skills aren't yet aligned with emerging AI-related demands. Encouragingly, however, more than six in ten respondents say they are eager to receive AI training, showing strong interest in upskilling if the opportunity is made accessible. Yet trust in employers remains limited: nearly 60% express little or no confidence that AI will be used fairly in hiring or management decisions. Views on inclusion are also mixed: almost equal shares believe AI will either create or reduce opportunities for diverse or underserved groups.

Overall, the findings suggest a generation that sees AI as both a career enabler and a source of unease, with enthusiasm tempered by gaps in trust, skills, and clarity. Young jobseekers are not rejecting AI; rather, they are asking to be equipped, included, and treated fairly in the transition toward AI-driven work.

05/2

WORKERS

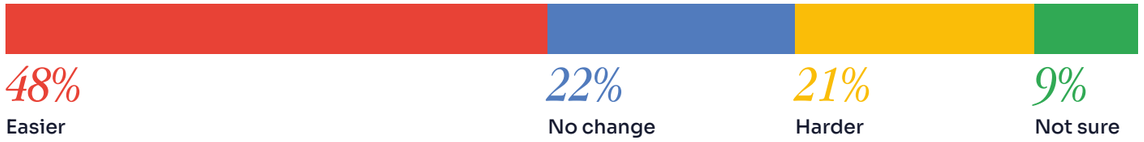
The survey sample consisted of 584 workers currently employed in low- to medium-skilled occupations across 12 European Union member states and the United Kingdom. Respondents represented a mix of sectors most exposed to early AI integration, such as finance, marketing, logistics, administration, software and more, and were drawn from both urban and regional labour markets. The majority held secondary or vocational education qualifications, with smaller proportions holding higher education degrees. The survey was conducted online and anonymously, capturing the perspectives of workers who are actively experiencing or anticipating the effects of AI on their day-to-day tasks and job stability.

Question 1

How do you feel about the impact of AI on your industry?

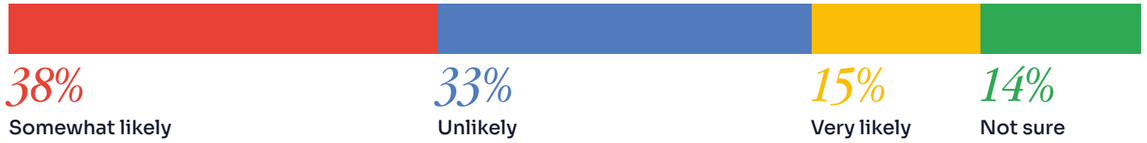
Question 2

Do you believe AI will make your job easier or harder?



Question 3

How likely do you think AI could replace part of your current tasks?

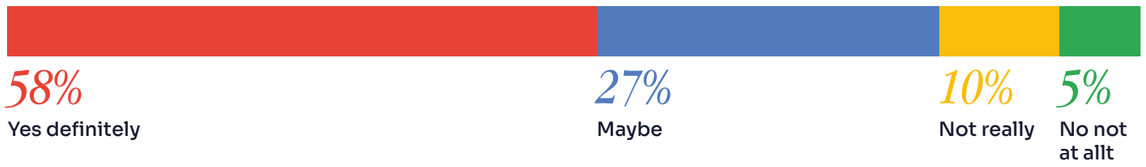


Question 4

Do you feel your employer is helping you adapt to AI-related changes?

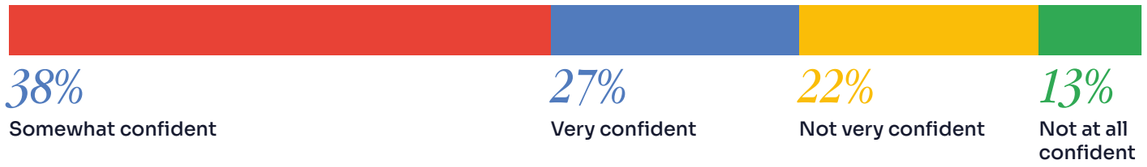
Question 5

Would you take AI training if offered by your employer?



Question 6

How confident are you that your job will still exist in 5 years given AI trends?



Question 7

How much do you trust AI to make fair decisions in the workplace (e.g. performance evaluation)?

Question 8

How do you feel about working alongside AI systems in your job?

Question 9

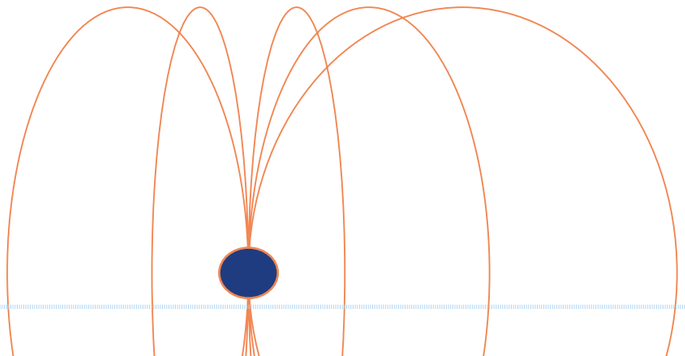
How familiar are you with using AI tools in your daily work?

Based on the responses from 584 workers across Europe, the data reveals a measured but pragmatic view of artificial intelligence among the existing workforce. While AI is generally seen as an inevitable and potentially helpful force, its arrival in day-to-day work is provoking mixed emotions, ranging from curiosity to caution. Over half of respondents (51%) view AI's impact on their industry positively, with nearly half (48%) believing it will make their own jobs easier. Yet, around one in five fear it could make their work harder or eventually edundant, and roughly one in three believe parts of their tasks could realistically be replaced by AI in the near future. This duality reflects a workforce that recognises AI's productivity gains but remains concerned about automation's long-term implications.

A consistent theme across the results is uneven preparedness and limited employer support. Only 44% of respondents feel their employer is helping them adapt to AI-related changes, while the majority perceive little or no structured effort to guide this transition. Nonetheless, the appetite for learning is strong: over half (58%) would eagerly take AI training if offered, suggesting a latent demand for accessible, practical reskilling opportunities. This is particularly relevant given that almost a quarter of respondents lack confidence that their current job will still exist in five years' time. Workers are aware that the nature of their roles is shifting, but few feel empowered to respond proactively through training provided at work.

Trust remains a delicate issue. Nearly 60% of respondents express little or no trust in AI systems making fair decisions in areas like recruitment or performance evaluation. This scepticism extends to broader concerns about fairness, transparency, and control. At the same time, emotional responses to working alongside AI are relatively balanced: while 60% report feeling "excited" or "curious," a notable 40% admit to feeling "cautious" or "worried." This emotional split mirrors the broader tension between opportunity and risk that defines much of Europe's AI discourse.

In sum, the European workforce appears neither technophobic nor blindly optimistic. Most workers recognise AI's potential to enhance productivity and job quality, yet they are acutely aware of its disruptive capacity. The findings point to a need for greater employer engagement, structured reskilling pathways, and transparent communication about how AI will reshape tasks and roles. Workers are ready to adapt, but they want reassurance, inclusion, and a clear sense of agency in navigating this technological transformation.



Justyna Karpinska

Poland

“AI has already replaced some of my responsibilities. Writing emails, writing texts, and taking notes from meetings are tasks that AI does for me, and I treat it as my personal assistant : Artificial intelligence allows us to save time by delegating repetitive and less important tasks.This gives us more time to devote to more demanding activities.

My employer encourages me to use AI, but it's up to me to adapt to the changes. I am developing my skills in this area on my own by participating in publicly available training courses.

AI will create more opportunities for underrepresented backgrounds. For example, thanks to AI, you can now learn a language for free, which until recently involved costs.

I would be more interested in working for a company that uses AI tools in its operations. For me, a company that is open to tools that optimize work is more appealing than one that resists AI.”

Ewa Piotrowicz

Poland

“In my industry (IT), where I’ve been working for 10 years as a Quality Assurance specialist - I see a significant impact of AI on both my work and my colleagues’ work. I have a positive attitude toward increasingly advanced and faster tools that improve coding efficiency and increase confidence that the produced code is optimized for performance.

I think parts of my work - such as manual testing of web applications or automated API testing could be replaced by AI. However, certain aspects like client communication during meetings, presenting solutions, or human–mobile interaction in usability testing will not be replaced by artificial intelligence.

I believe AI will create more opportunities for people from these groups, which is why it’s important to involve broader communities in developing competencies around using these tools.”

Fran V. Hernández

Spain

“AI makes my industry (Tech Ventures) strong and accelerated. But I think that companies have panicked about trying to take advantage of it. With pros and cons, I believe the real balance is more negative than companies are willing to admit. Lower quality and, in many cases, even longer development times overall. In addition, AI gets worse as it is trained on content generated by itself.

My employer provides tools and some workshops, but not deep or structured training. It makes it easier for each person to train on their own, but there is no clear strategy around it.

AI will likely reduce opportunities for people in disadvantaged situations if it is not properly regulated. It is not neutral. It tends to amplify existing biases and penalizes those who do not fit previous patterns or who do not have access to training and tools. The way it works turns it into a factor of exclusion.”

Maria Zinutti

Italy

“I believe that AI has the potential to simplify any job, but I am very concerned about the idea that it could create a kind of dependency that makes it very difficult, especially in the long term, to work without using it.

I recently received training on using AI to search for jobs. It was interesting and useful, although I noticed how difficult it is to work without this tool after trying it. I believe training on the risks of AI would be essential, on how to measure its use and how to continue performing certain tasks without risking losing acquired skills that are no longer being practiced.

I believe that AI itself can improve or worsen opportunities for people from diverse or underserved backgrounds if applied according to specific criteria, aimed precisely at recognizing and eliminating certain biases inherent in the programming of this technology.

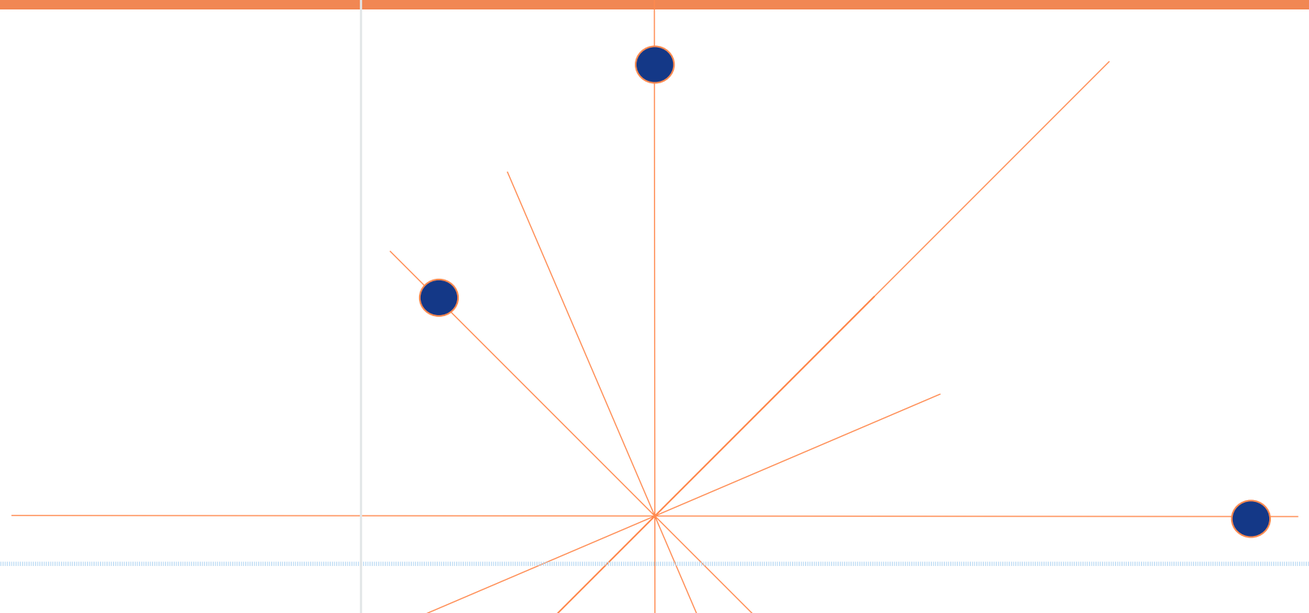
I’d rather work for a company that recognizes the increasingly central role that AI is playing globally and that seeks to understand how to integrate it efficiently and fairly, i.e., that sees it as a tool for improving and enhancing the work environment and the working conditions.”

06

How is AI perceived by employers in Europe?

The data was collected through an online survey of 214 employers representing small and medium-sized enterprises (SMEs) and startups operating across 12 European Union countries and the United Kingdom. The survey targeted business owners, founders, and senior managers responsible for workforce planning, hiring, or technology adoption.

Respondents came from a mix of sectors - most prominently retail, professional services, manufacturing, logistics, hospitality, and technology - reflecting the diverse composition of Europe's SME economy. Responses were gathered anonymously to encourage candid perspectives. No large corporations were included in the sample, ensuring that the results capture the realities and constraints of smaller employers navigating AI adoption with limited budgets and internal capacity.

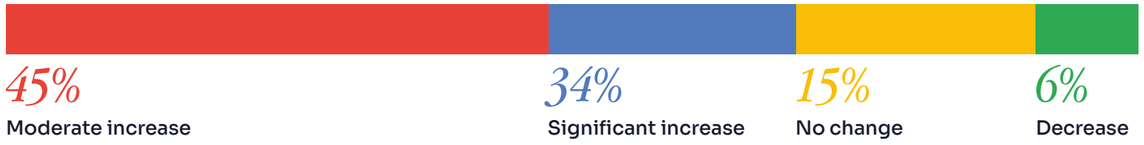


Question 1

How do you expect AI to impact your overall workforce size in the next 3 years?

Question 2

What impact do you believe AI will have on employee productivity?

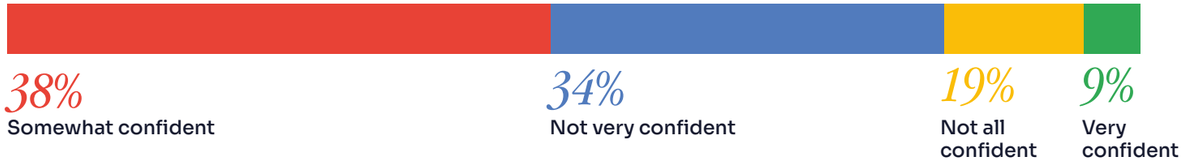


Question 3

Do you believe AI will help your company hire more effectively?

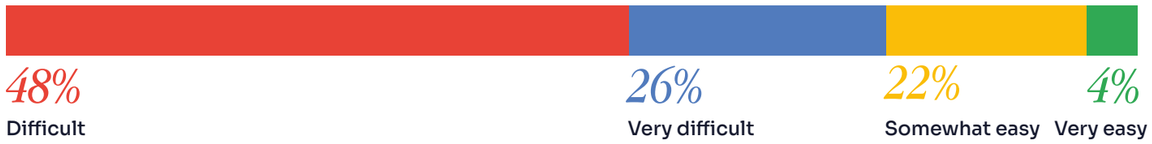
Question 4

How confident are you that your current employees have the right skills to work effectively with AI tools?



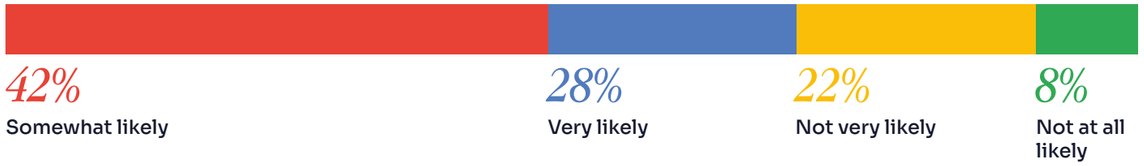
Question 5

How easy do you find it to recruit candidates with AI-related skills?



Question 6

How likely are you to invest in AI training for your employees within the next 12 months?

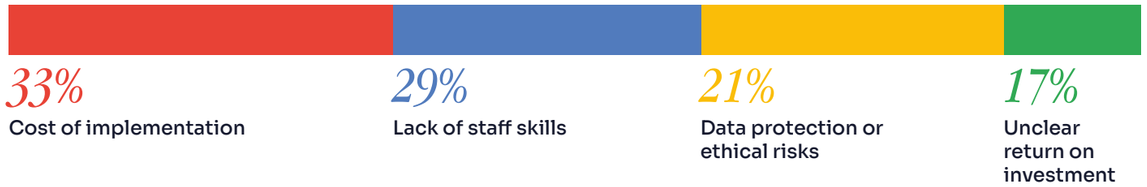


Question 7

What is your main motivation for adopting AI?

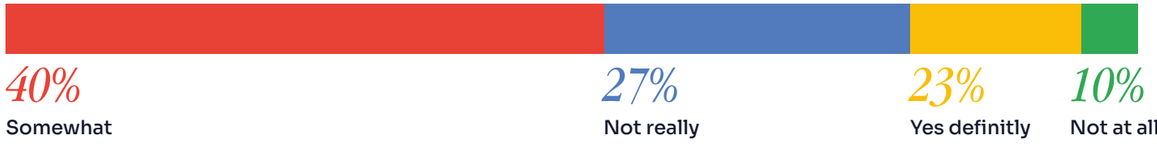
Question 8

What is your main concern about adopting AI?



Question 9

Do you believe AI will make your company more attractive to new hires?

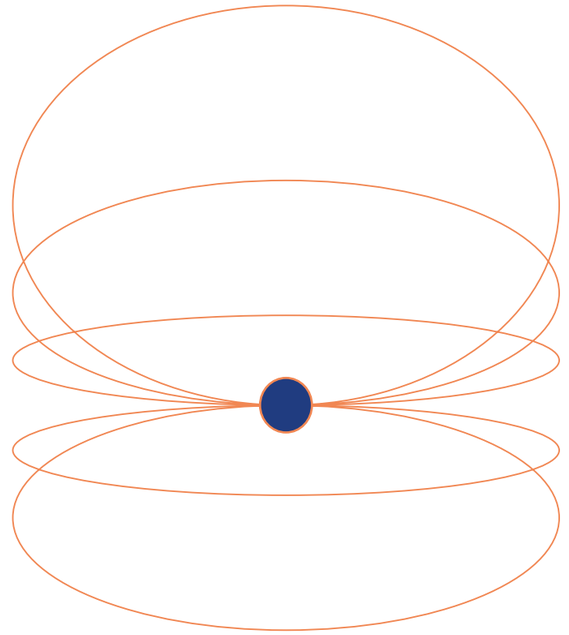


The survey of 214 small and medium-sized employers and startup leaders across Europe paints a picture of measured optimism toward artificial intelligence, tempered by resource constraints, skills shortages, and uncertainty about implementation. Most SMEs see AI not as a job killer but as a productivity enhancer: nearly four in five expect AI to moderately or significantly increase efficiency, while only a small minority (6%) foresee any drop in output. However, when it comes to workforce size, the outlook is more cautious, with 42% expecting headcount to remain stable, 28% anticipate reductions, and just 18% believe AI could lead to job growth. This reflects a pragmatic view among smaller firms that AI's immediate impact will come through improved productivity and cost savings, not expansion.

Hiring and skills emerge as central concerns. While 70% believe AI can make recruitment more targeted or effective, most admit that finding candidates with relevant AI skills remains difficult or very difficult (74%). Confidence in their existing workforce is also limited: just under half feel their staff are well-equipped to work with AI tools. This highlights a widening skills gap between aspiration and readiness, especially in SMEs without structured training programs. Encouragingly, around two-thirds of employers say they are likely to invest in AI training within the next year, signalling a growing awareness that talent, not technology alone, will determine the success of AI integration.

Motivations and concerns are closely linked: most employers cite improving productivity and reducing costs as their main drivers, while the cost of implementation and lack of staff expertise are the top barriers. Ethical or data-related concerns are acknowledged but not yet dominant. Interestingly, more than 60% believe that adopting AI could make their company more attractive to potential hires - an early sign that AI-readiness is becoming a differentiator in Europe's competitive labour market.

Overall, the findings suggest that Europe's SMEs are at an inflection point: they view AI as a strategic necessity but face practical constraints in funding, training, and implementation. Their optimism is grounded but conditional, and AI's promise will only be realised if small firms can access affordable tools, tailored training, and trusted guidance to navigate this transformation.



Marcin Sojka

Business Development Director at SALES HR

Poland

How is AI currently impacting the recruitment industry from your perspective?

AI already accelerates sourcing and early screening, improving candidate-role matching and reducing time-to-hire. At the same time, it shifts recruiters toward more analytical and strategic decision-making. Personally I see AI in recruitment as a strategic advantage with real risks attached. Its value depends on organizational maturity, not the technology alone.

Has AI made recruitment processes (e.g. sourcing, screening, matching) easier, more complex, or both?

It is both easier and more complex. Operationally, it is easier, the time required for repetitive tasks - sourcing, CV screening, initial matching, and transactional communication - is significantly reduced, but the human factor is still essential for conversations and building relationships with candidates.Final decisions and potential assessment will remain human-led.

How prepared do you think employers are to adapt their hiring practices to AI-driven changes?

Some companies are implementing the necessary changes, especially in the initial stages of recruitment. We are still in an adaptation phase, without widespread adoption, but this will be an inevitable direction.

What new skills or profiles are you seeing increased demand for as a result of AI adoption?

Demand is increasing for profiles combining digital and business skills, such as HR analytics, AI product owners, and technical recruiters. Critical thinking and data literacy are becoming essential.

Do you believe AI can help improve access to employment for diverse or underserved talent - or does it risk reinforcing existing biases?

AI can improve inclusion, but only with conscious design and regular algorithm audits. Without that, it risks reinforcing existing inequalities.

Sorina Uleia

Co-founder & CEO at Recycllux

Romania

How do you expect AI to impact your overall workforce size in the next three years?

AI will not reduce our workforce; it enables us to scale impact faster with a lean team. We expect moderate growth, particularly within our internal AI team, as we develop a biodiversity and ecosystem impact forecasting layer.

What impact do you believe AI will have on employee productivity ?

AI significantly increases productivity by automating data-heavy tasks such as analysis, reporting, and proposal writing. For example, our internal proposal-writing agent has reduced time by roughly 50%.

Do you believe AI will help your company hire more effectively?

Not in our case. Hiring decisions remain highly human-driven. I personally review CVs and conduct interviews to ensure strong alignment with our mission and values.

How confident are you that your current employees have the right skills to work effectively with AI tools?

Moderately confident. Our team is highly adaptable, but continuous learning and continuous experiments is essential as AI tools evolve rapidly.

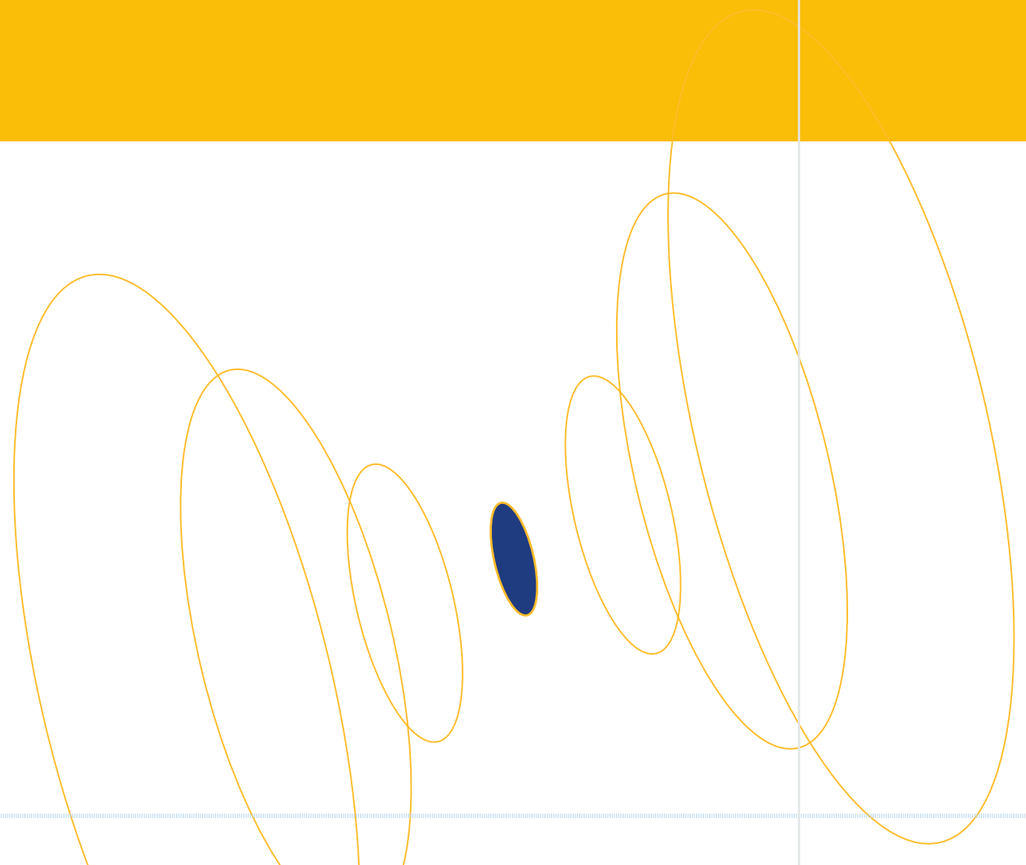
Do you believe AI will make your company more attractive to new hires?

Yes, particularly the fact that we actively develop AI. Mission-driven talent is attracted to companies that build meaningful AI.

07

Breaking Barriers to AI Skills Adoption for Career Starters and Workers

While AI competencies are increasingly vital for career resilience, the transition across Europe remains hampered by a “bottleneck” of low awareness, insufficient educational integration, and a lack of workplace training. This fragmentation risks widening the skills gap and stalling inclusive growth. To address this, a cohesive strategy is required - one that promotes AI literacy across all academic disciplines and encourages employer-led training specifically designed to support new entrants and under-represented groups.



Despite the growing importance of AI-linked skills for employment resilience, the transition remains uneven and blocked in many parts of Europe. Three inter-linked barriers stand out:

- **Low awareness of what AI skills entail and of their crucial role in shaping employment**
- **Weak integration of AI literacy into formal education inadequate on-the-job training.**

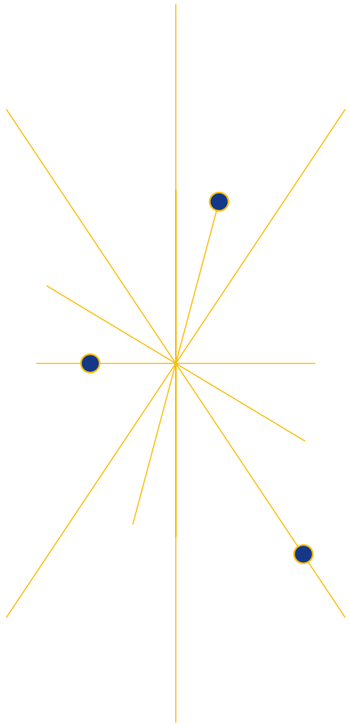
Iniation, these three barriers form a bottleneck: low awareness limits the number of candidates who proactively build AI literacy; weak curricular integration means many graduates arrive under-prepared; and inadequate on-the-job training prevents rapid upskilling once they are employed. For a Europe striving to build an inclusive AI-capable workforce, the result is patched progress and growing inequality in the pace of adoption.

Addressing these barriers requires a joined-up approach: raising awareness of AI-skills among students and workers, embedding AI literacy across educational streams (not only ICT-specialist tracks), and designing employer-led but inclusive training programmes that support new entrants and under-represented groups.

07/1

LACK OF AWARENESS

Many workers and career-starters still have limited understanding of what AI tools can do or of the skills that will be required. According to the Cedefop AI Skills Survey, roughly 28 % of surveyed adult workers reported that they or colleagues already use AI technologies at work. Yet at the same time, only 15 % of adult workers in the EU had received training in using AI tools or systems in the past year. Moreover, while 61 % believed they would need new knowledge and skills to cope with AI within five years, 44 % thought it unlikely that their organisation would provide such training.



61%

believed they would need new knowledge and skills to cope with AI within five years

44%

thought it unlikely that their organisation would provide such training

Another survey covering European citizens found that many self-assess their AI competency as low, even though attitudes were generally positive. This suggests a mismatch: interest is there, but the visibility of what skills are needed (and by whom) is weak.

For career-starters especially, this low awareness translates into limited early preparation. They may start learning without clear direction - what AI means for their role, what tools they might use, what baseline literacy is expected - so they arrive in the workforce under-prepared. As a result, the “entry-level” in many job postings assumes more AI fluency than many new entrants have.

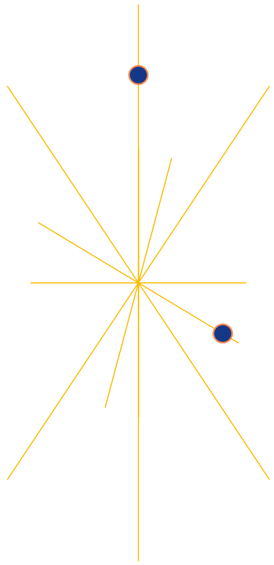
IN SHORT

Without stronger awareness of the nature and value of AI skills, many workers and students miss the boat entirely, not because they lack capacity, but simply because the map is missing.

07/2

A LACK OF INTEGRATION IN SCHOOL & TERTIARY CURRICULA

Another major barrier is the weak incorporation of AI literacy and skills into initial education systems (schools, vocational training, and tertiary/HE programmes). According to the policy brief “Going digital means skilling for digital”, 70% of EU companies reported that a lack of adequate digital skills was an obstacle to investment. While this figure covers digital literacy more broadly, it underlines the magnitude of the skills gap.



70%

of EU companies reported that a lack of adequate digital skills was an obstacle to investment

In the specific context of AI skills, the AI Skills Strategy for Europe finds that while AI-related education and training offer in ICT-specialist fields is broadly aligned with demand, there is “limited AI integration in the academic offer of non-ICT fields”. In vocational education and training (VET) contexts, research shows that AI tools are still only unevenly incorporated into curricula, with large variation across countries and programmes.

Moreover, Cedefop’s survey noted that more than half of European employees have “a low level of AI competency.” For career-starters who are often drawn from generalist programmes, this means they may graduate without even basic exposure to AI-augmented tools, workflows or contexts.

THE CONSEQUENCE

When employers post roles that expect familiarity with AI-driven dashboards, data-oriented workflows or prompt-based tools, the pipeline of graduates without those competencies is thin. The “integration lag” means that what students learn does not fully reflect what employers require at entry-level.

07/3

LACK OF ON-THE-JOB TRAINING

Even when workers enter employment, the opportunities to build AI-capabilities at work remain limited. As noted, only about 15% of adult workers had taken AI-related training in the past year. Further, while 85% of employers surveyed indicated that they plan to prioritise up-skilling their workforce, only **29%** expect to up-skill staff in their current roles, and **19%** plan redeployment; **11%** anticipate no training for some staff at all.

29%

expect to up-skill staff in their current roles

19%

plan redeployment

11%

anticipate no training for some staff at all

The issue is more acute for under-represented groups: older workers, women, and those in lower-skilled or more precarious jobs report less access to AI-training. Without this in-job support, even workers who are aware of AI and have had some exposure at school find it hard to accumulate practical, work-relevant AI experience.

From the employer side, while many recognise the need for AI-skills, the actual design of training programmes is often generalised rather than role-specific. This means that new entrants often find themselves expected to “hit the ground running” with AI-augmented workflows without structured onboarding, mentorship, or iterative training.

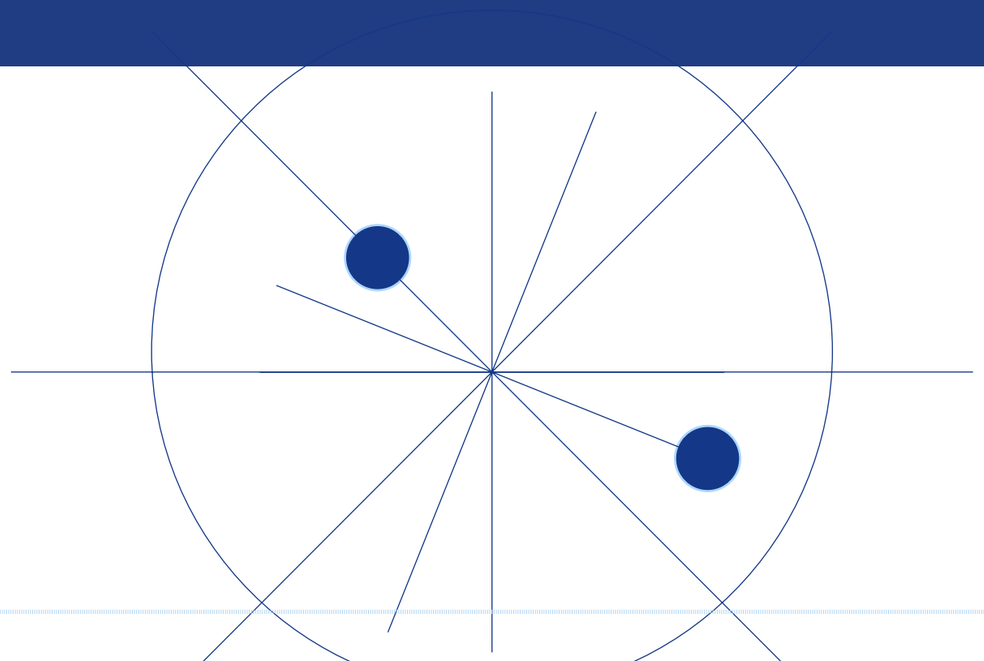
Over time, this gap translates into slower adaptation, higher risk of being “left-behind”, and reinforces a divide between those with early AI-capability exposure and those without.

09

Closing Europe's AI Skills Gap: What's Working, and Where

Europe has moved from debating whether AI will change work to grappling with how fast workers and career starters can gain the skills to keep up. Below is a practical mapping of policies and programmes across the region that target three bottlenecks:

- **Low awareness of what AI skills actually are**
- **Limited integration of AI in school/tertiary curricula**
- **Insufficient on-the-job training**



08/1

RAISING AWARENESS & BASIC AI LITERACY

EU-LEVEL SCAFFOLDING

Digital Europe Programme (DIGITAL)

funds awareness and skills actions in “advanced digital skills” (including AI), aiming to close the gap between market needs and current provision. Calls since 2024 explicitly target capacity building for AI/GenAI skills and ecosystems.

AI-on-Demand (AIoD) Platform

serves as a one-stop hub with courses, events and materials; its 2024 Winter School (Örebro University, Sweden) blended hands-on labs with ethics and robotics to help participants translate theory into practice.

COUNTRY CASE STUDIES

Finland – “Elements of AI” MOOC

Launched by University of Helsinki & MinnaLearn, it has introduced the basics of AI to 1+ million learners in 26 languages, demonstrating the reach of free, modular, micro-learning to build broad awareness.

What works: free access, plain-language content, localisation, and stackable follow-on modules (“Building AI”).

Estonia – Public-sector upskilling via the Digital Academy

Estonia’s Digiriigi Akadeemia focuses on advanced topics for civil servants (e.g., accessibility, digital service design), demonstrating how targeted public-sector literacy drives inclusive adoption.

What works: mandate + role-relevant curriculum + accessibility by design.

WHY THIS MATTERS, IN NUMBERS

European Union -Pactfor Skills

In 2024, **Pact for Skills** members reached **79.5 million people** with awareness and skills communication, and involved **134,500+ stakeholders** in partnerships since 2022: **evidence that sustained outreach at scale is possible**.

Spain -Digital Decade

Spain’s 2024 Digital Decade country snapshot shows strong SME digitisation momentum (e.g., **61%** of SMEs with basic digital uptake, **9.3%** AI adoption vs **8% EU**), illustrating how national awareness + incentives move lagging segments.

REPLICABLE “WHAT WORKS”

Make entry routes free & multilingual

Anchor campaigns in work-relevant use cases (not abstract AI theory)

Pair mass awareness with guided next steps (certificates, apprenticeships, job-matching)

Sampo Leino

Head of learning at MinnaLearn

Finland

Leino sits down to discuss the Elements of AI for Business learning program as part of Tides AI. Beyond the hype, Leino shares his insights on democratising knowledge and hopes for a world where AI is accessible to all.

AI training for social innovators – it's exciting. Can you give us an overview of the Elements of AI for Business learning program and what you hope to achieve?

The Elements of AI for Business learning program is a four week learning program for groups of ten people, and it's built from a few building blocks. One is curated chapters and exercises from our award winning elements of course, and then three engaging workshops to explore AI, use cases for work and build a shared understanding.

The combination of both practice and theory – that's great to hear. Given how present AI is today, in the news and in our feeds, what inspired the development of this learning program?

AI will transform the way we work, the services we use and the services we produce. I think it's going to be similar to what the Internet has done to the world - so a big impact. It might feel like we're on the top of that hype train, that it's already happened or that everyone's doing it and it's too late.

But, we're at the beginning of that wave. So at MinnaLearn, we thought that it'd be really important to start building the fundamental knowledge that AI is not magic and that AI is for everyone. And then to start finding practical applications that provide actual, meaningful value, that's really, really important. What I'm seeing is that because AI is so trendy, there's so many AI services, and sometimes it feels like it's just like a stack you put at the end to say, we use AI this, this is AI. -d and published and shared. So maybe this allows for people to do more work and be more, more, more like let's say you'll just like, reach higher levels, even though they don't have all the resources that a big organization might have.

I hope they're inspired. I hope they create like they start creating innovations that really make a positive impact. Of course, we all have fears. What might AI do? Well, does it take our jobs? Will we use it as a tool for destruction?

INCO: Looking to the future, is there anything else you'd like to share?

We want to help make AI accessible for all and then empower people to be able to learn and teach is very important in this mission. So I've always been a champion of this idea. But a great way to learn is to teach because you're constantly learning from your students. So I think it's exciting to have this kind of train-the-trainer program where people are both learning and then teaching it forward. And that's a way to spread information around. And I'm really excited to see all the amazing work that the trainers and their students will accomplish on this journey.I know from experience - it takes a lot of work. But I'm always really proud when I see what's accomplished. So that's my message to them. I'm excited to start.

08/2

INTEGRATING AI INTO SCHOOL, VET & TERTIARY CURRICULA

EU-LEVEL SCAFFOLDING

Digital Education Action Plan (2021–27)

a 14-action framework to make digital learning inclusive and future-proof; includes actions on AI in education, teacher support and assessment tools.

Ethical Guidelines for Educators on AI & Data (2022 – update due 2025)

guide safe, effective classroom use, important for mainstreaming AI literacy beyond ICT tracks.

Micro-credentials (2022)

Council Recommendation sets a common EU approach to short, stackable credentials, which are key for injecting AI modules into non-ICT programmes (business, health, creative arts).

COUNTRY CASE STUDIES

Austria – fit4internet (f4i) & DigCompAT

Austria's national platform uses the EU DigComp framework to assess and certify digital skills and publishes the Digital Skills Barometer (with an AI special edition) to steer curricula updates.

What works: measure at scale > align curricula > recognise progression.

Spain – ENIA Chairs & Digital Decade rollout.

Spain couples national AI strategy measures with university "Chairs" (e.g., microelectronics/AI) and SME programmes (Kit Digital / Kit Consulting) to tighten the education-industry loop.

What works: combine infrastructure, faculty chairs, and SME adoption pathways.

Netherlands – NL AI Coalition (Human Capital).

Cross-sector partnership develops guides and data-sharing practices to embed AI across domains (e.g., federated data spaces) and mobilise universities, VET and employers.

What works: coalition governance + reusable assets for curricula and labs.

WHY THIS MATTERS, IN NUMBERS

70% of EU companies say insufficient digital skills hold back investment: curricula that mainstream AI literacy (not just specialist ML) directly address this constraint. say insufficient digital skills hold back investment: curricula that mainstream AI literacy (not just specialist ML) directly address this constraint.

REPLICABLE "WHAT WORKS"

Use micro-credentials to inject AI into non-ICT degrees

Publish skills observatories/barometers to keep syllabi current

Fund faculty chairs and applied labs tied to local industry projects

08/3

EXPANDING ROLE-RELEVANT ON-THE-JOB TRAINING

EU-LEVEL SCAFFOLDING

Pact for Skills (Large-Scale Partnerships)

In 2024 alone, members developed c. 38,000 new training programmes and updated 10,000+; actions most often targeted digital and sectoral technical skills.

DIGITAL "Advanced Digital Skills" & AI Skills Academy

2024–25 calls finance industry-led academies for AI/GenAI, with pillars on education/training, ecosystem-building, and progress measurement; the AI PACT further nudges organisations to prepare for the AI Act, aligning compliance and skills.

COUNTRY CASE STUDIES

Ireland – Skillnet Ireland

National talent agency co-funds employer-led upskilling (incl. AI, data, cloud). In 2024, 14,711 workers completed digital skills programmes (+16% YoY).

What works: co-funded, employer-designed, credential-linked courses at scale.

Spain – Red.es mobilisation

Through the recovery plan, Spain deployed >€1.5bn in 2024 across digital transformation/skills actions (e.g., SME digitalisation and training), strengthening demand for in-work AI adoption.

What works: national investment + SME-oriented advisory and training.

AI-on-Demand as continuous learning

Curricula, events and communities (e.g., DIGITAL SME Summit knowledge-sharing) connect SMEs and practitioners to reusable AI resources and expert networks.

What works: open repositories + peer learning.

WHY THIS MATTERS, IN NUMBERS

Pact members reached **79.5 million** people with upskilling communications in 2024 and report **96%** contribution to at least one Pact principle (notably **88%** promoting lifelong learning). This is a signal that employer coalitions can deliver volume and inclusion.

REPLICABLE "WHAT WORKS"

Co-design training with employers and fund it on a matched basis

Align with AI-Act readiness (risk, governance, data quality)

Ensure role-specific pathways (e.g., technician,analyst) with recognised micro-credentials

PULLING IT TOGETHER:

A Pragmatic Recipe

Start wide, then specialise

Use mass-reach, low-barrier offers (Elements of AI; AIoD) to create awareness channel motivated learners into micro-credentials and VET/HE modules.

Make curricula living documents

Pair DigComp-aligned assessments (Austria) with labour-market intelligence (Pact LSPs) to keep course content current.

Fund employer-led academies

Scale what Ireland's Skillnet demonstrates: pooled, industry-defined content that maps to concrete roles and promotions; tap DIGITAL calls for AI Skills Academies.

Design for SMEs

Couple grants/consulting (Spain) with templates, sandboxes and AI-Act-ready playbooks (AI PACT) so smaller firms can train and adopt with confidence.

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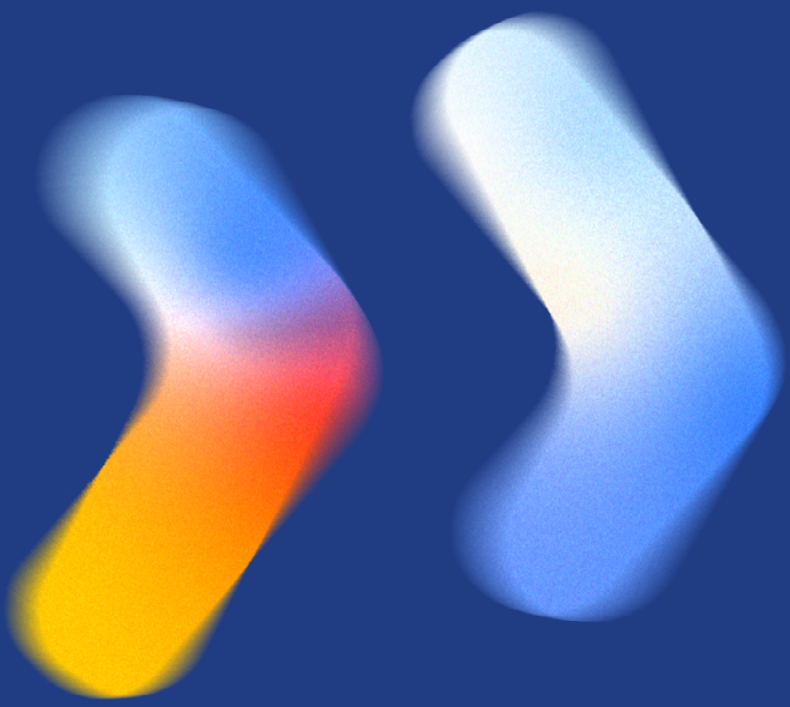

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