

What kind of skills demands are emerging from diverse AI-applications in the labour markets?

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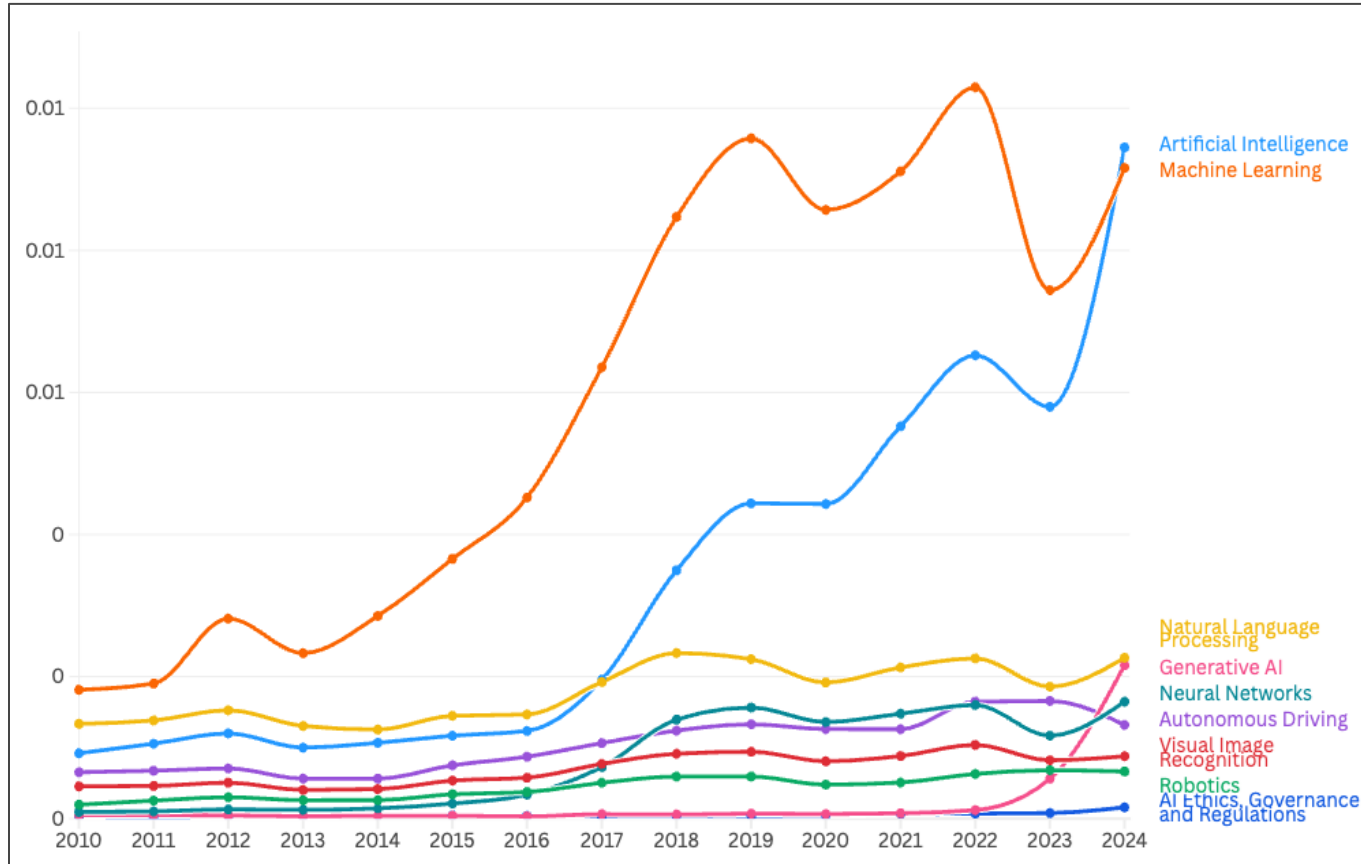


Simple typology of AI roles in jobs

- **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** to **intermediate** and **advanced level**
- **Maintainers of AI systems:** IT technicians or AI system integrators to ensure the functionality, security and improvement of AI technologies

Labour demand by AI skill cluster

AI share of total postings in the US by skill cluster, 2010-2024 (%)



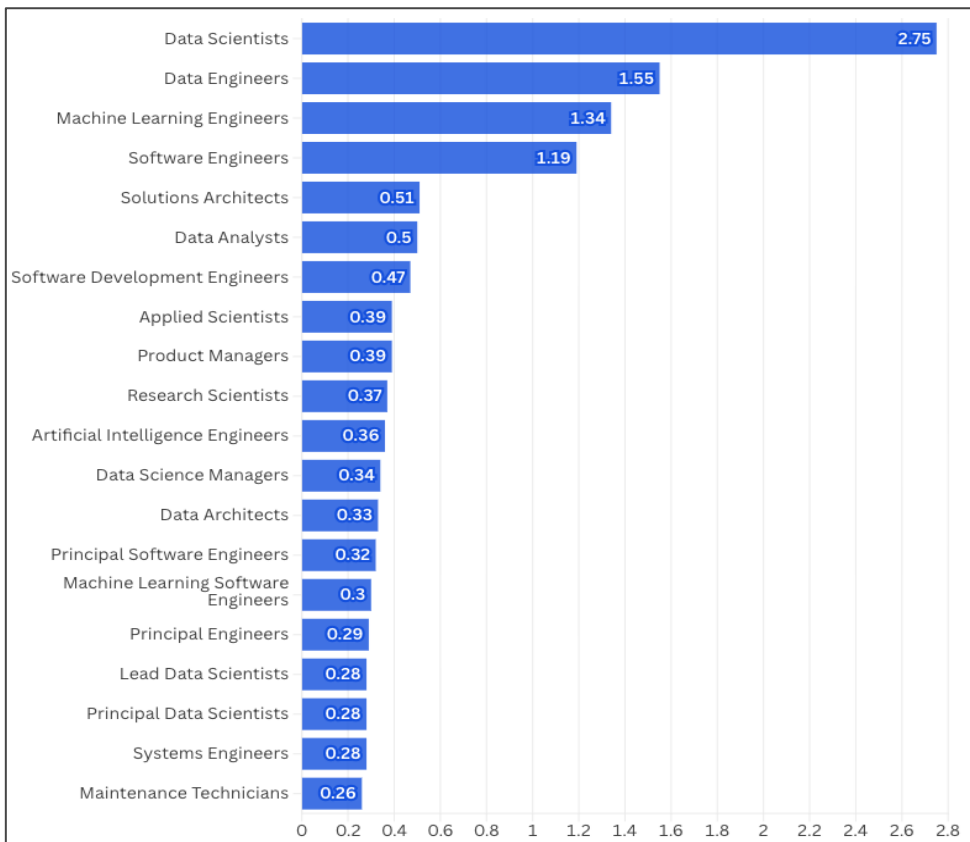
AI skill clusters surpass machine learning for the first time

Generative AI demand soars

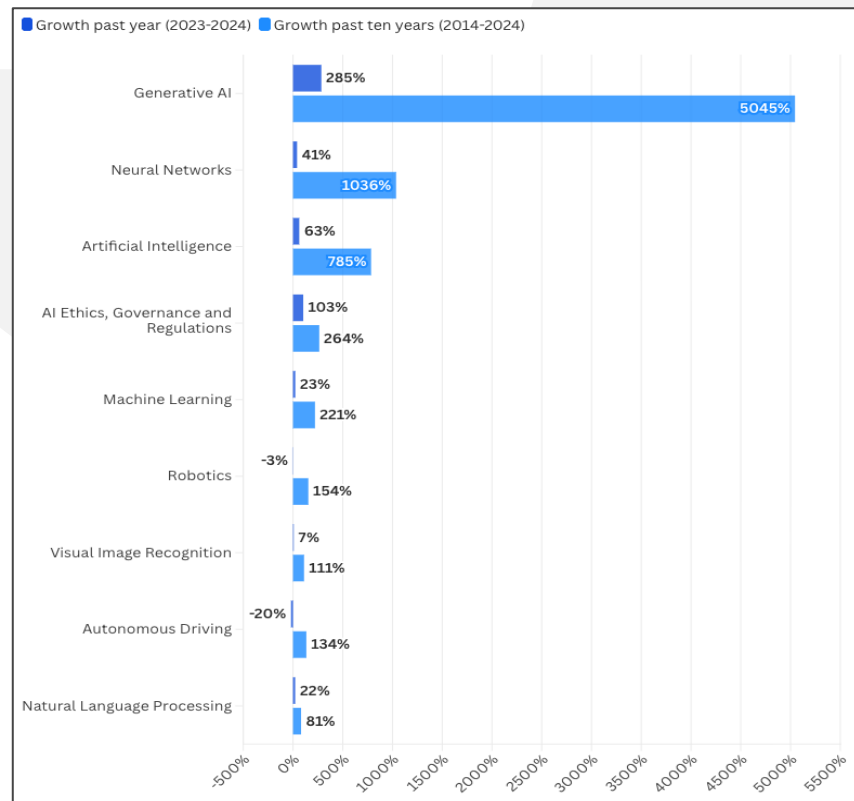
Growing demand emerges for AI ethics, governance, and regulatory skills

Source: Lightcast US Job Postings

Skills for the developers of AI systems



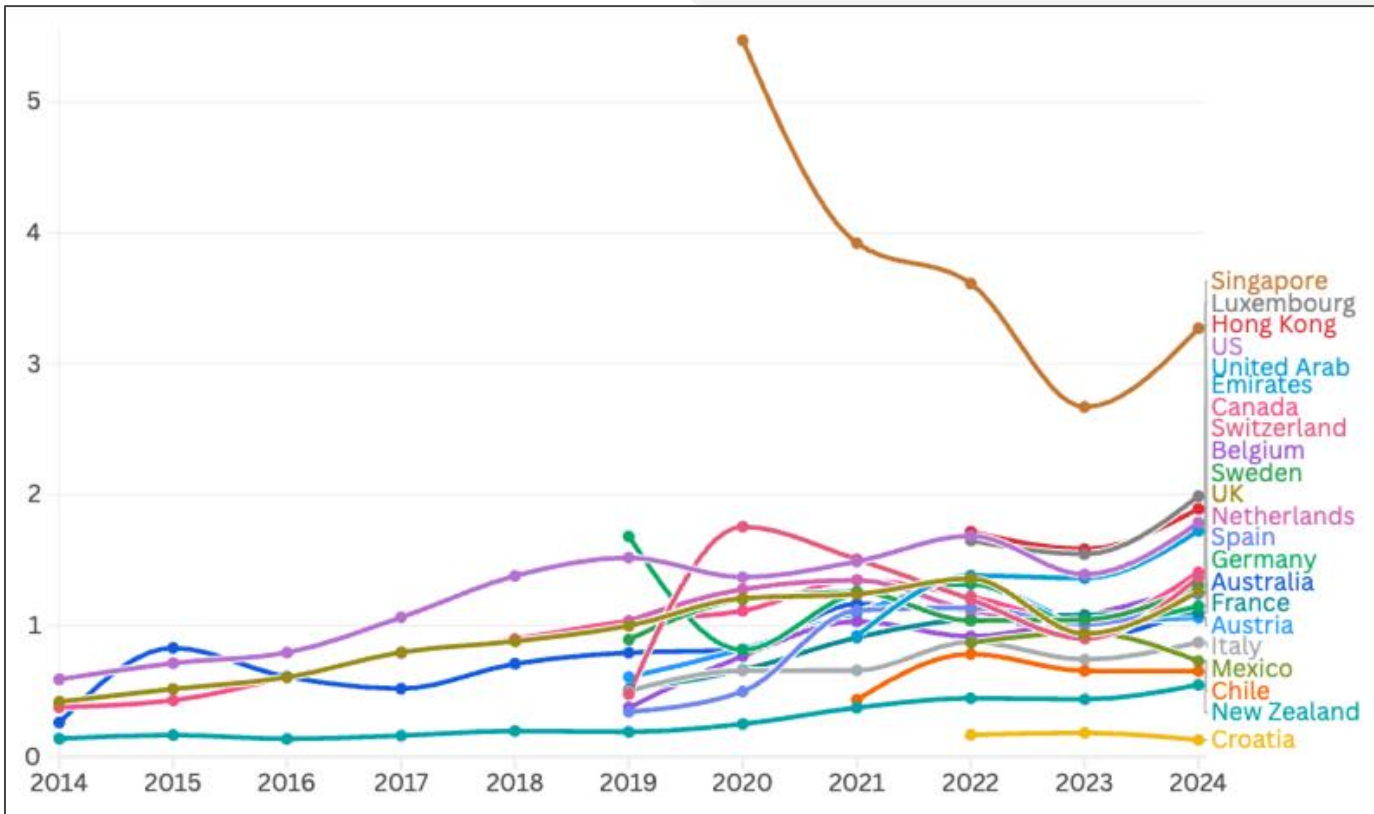
Top AI Job Titles - Source: Lightcast US Job Postings



Growth in skill clusters - Source: Lightcast US Job Postings

Demand for AI-related skills is rising fast

Growth of AI-related job postings (2014–2024) across selected countries



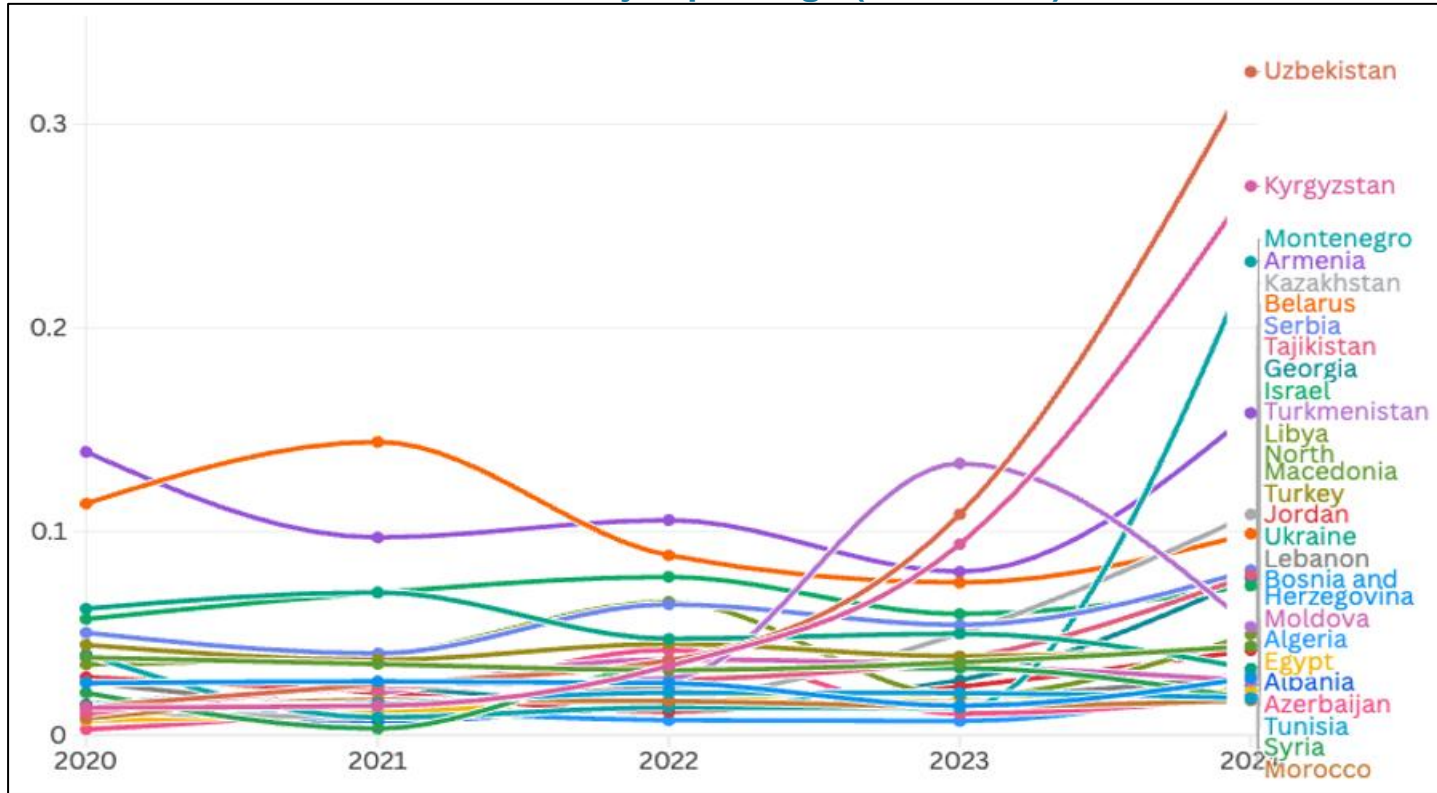
Growth of AI-related job vacancies (2019-2024)

The share of OJVs that include at least one AI-related skill in its description among the total OJVs

Source: Lightcast Global Job Postings

Demand for AI-related skills is rising fast

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



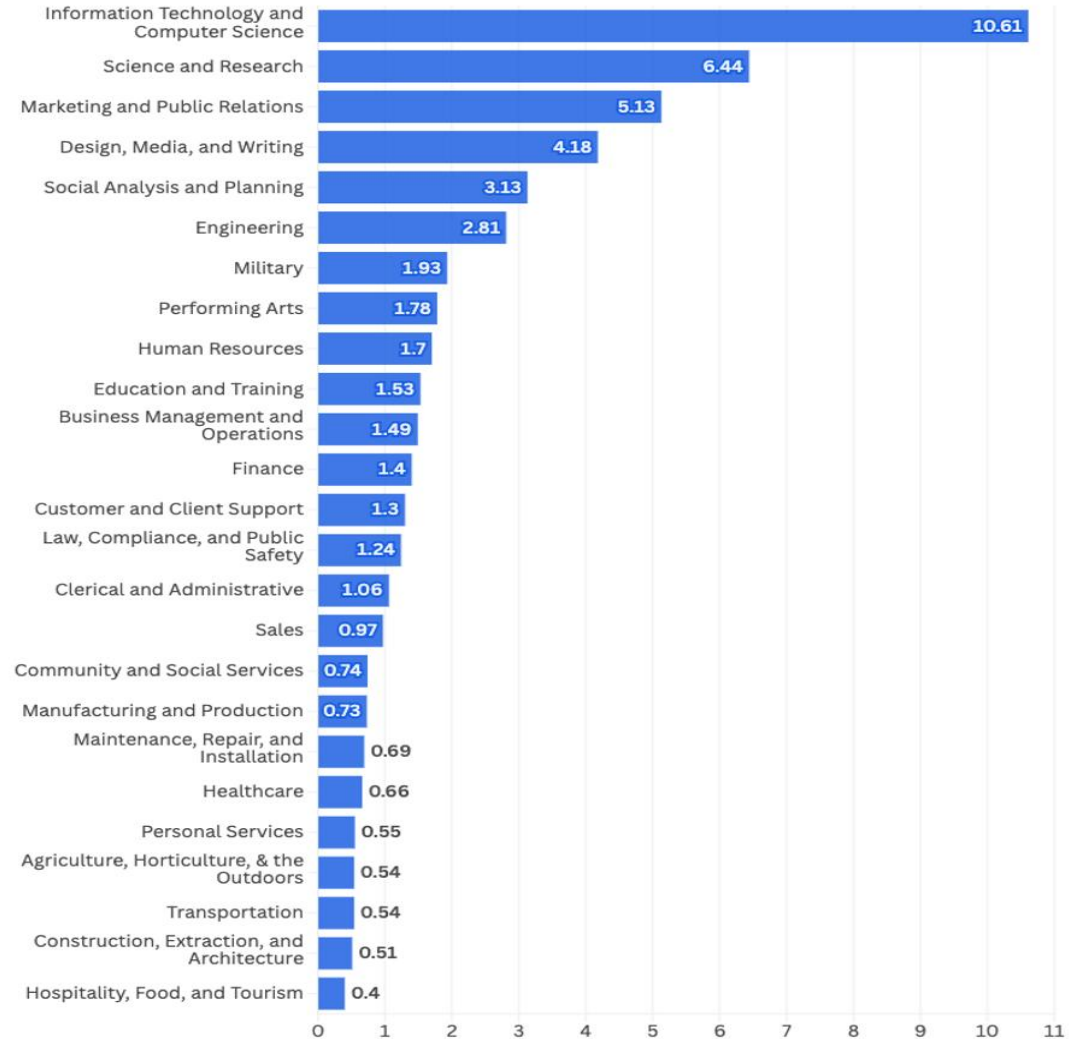
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AI is no longer just a 'tech thing'

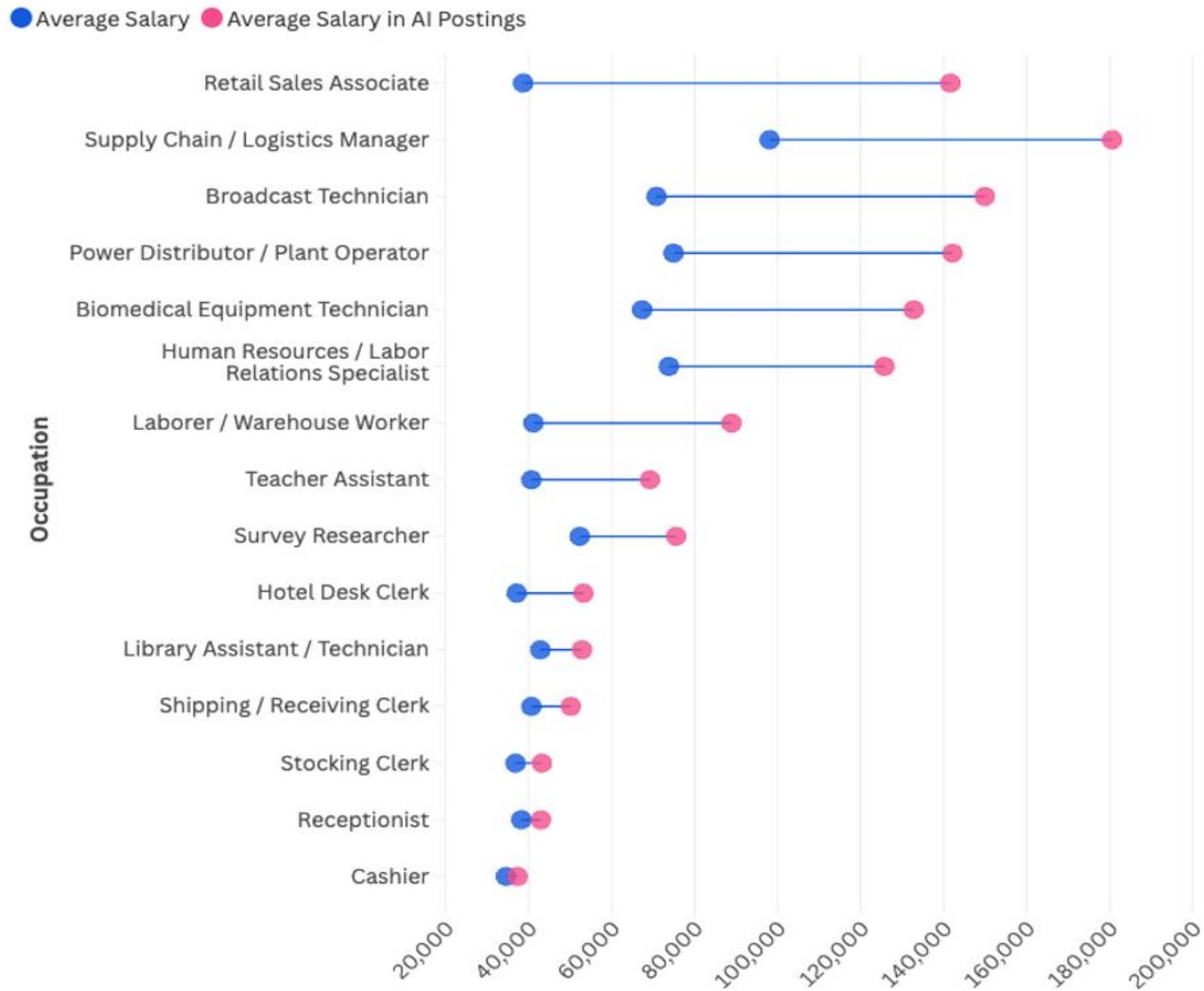
There are now more vacancies requiring AI skills outside the tech sector



Source: Lighcast Global Online Job Postings

Businesses are willing to pay a premium for AI skills

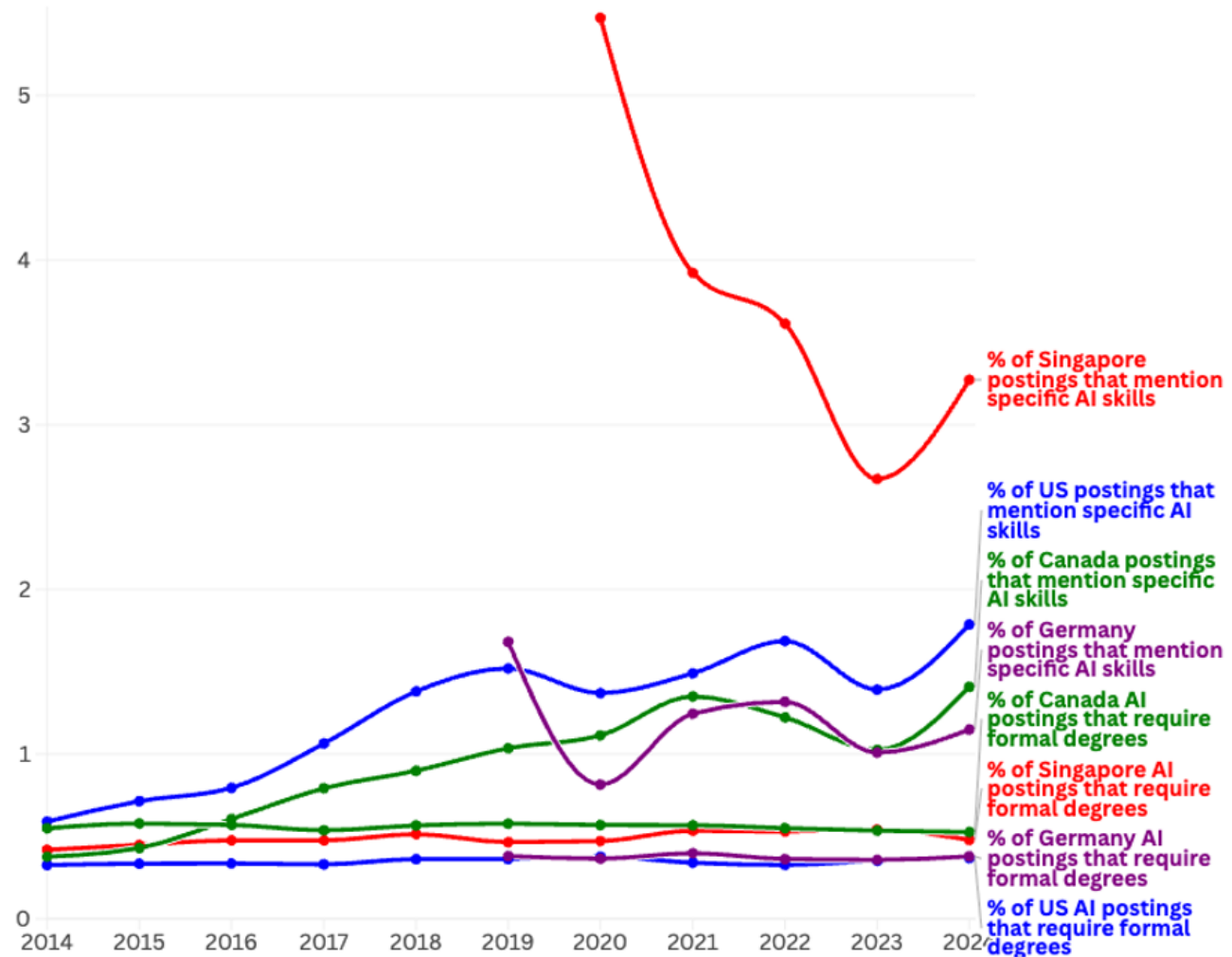
Job postings asking for AI skills offer higher salaries than those for similar roles w/out AI skills



Source: Lightcast US OJV analysis; confirmed by AI World 2024, Lin 2025, Bone et al 2025, Pouliakas 2025)

From qualifications to skills

Employers increasingly ask for skills, rather than qualifications, and this applies to AI too



Source: Lightcast online postings; confirmed by Bone et al, 2025.

Hierarchy of emerging AI-related skill needs

Different technical skills required in different roles, and soft skills important across the board

1. AI Development Skills

Core and most advanced technical skills required to design, build and improve AI systems (e.g. machine learning, deep learning, neural network design, mathematical modelling).

2. AI Application and Integration Skills

Second layer of technical skills needed to implement and adapt AI tools within existing organisational workflows in many non-ICT sectors (e.g. data analytics, prompt engineering, workflow automation).

3. AI Interaction and Use Skills

Basic to intermediate AI-awareness and system interaction skills for non-specialist users engaged with AI-enhanced systems (e.g. using chatbots, dashboards, predictive maintenance interfaces).

4. AI-Complementary Skills

Cognitive, social and ethical skills that complement AI tasks and ensure responsible, context-sensitive, and human-centred implementation (e.g. critical thinking, ethical reasoning, problem-solving, adaptability).

'AI literacy' for all

'New driving licence': Ability to understand, use, monitor, and critically reflect on AI applications

- ✓ **Technical skills:** basic knowledge of how AI systems operate
- ✓ **Analytical skills:** ability to analyse and interpret data/AI outputs in real-world settings
- ✓ **Ethics & fairness:** recognising its potential risks on data privacy, algorithmic bias, transparency, fairness, accountability

Source: EU documents; WEF, 2025; OECD, 2021; UNESCO, 2019 and 2023.

Transversal competences

Transversal competences	Typical applications and use cases
Critical thinking	Interpreting and challenging AI outputs in decision-making processes
Creativity & innovation	Generating novel ideas in product design, campaigns, or educational content
Socio-emotional intelligence	Managing human-machine interactions, team collaboration, client communication
Adaptability & learning-to-learn	Responding to rapidly evolving tools and procedures, upskilling through self-directed learning
Ethical judgement & responsibility	Assessing fairness, bias, and societal implications of AI use in professional settings
Interdisciplinary fluency	Applying knowledge across domains, such as tech-humanities or science-policy linkages