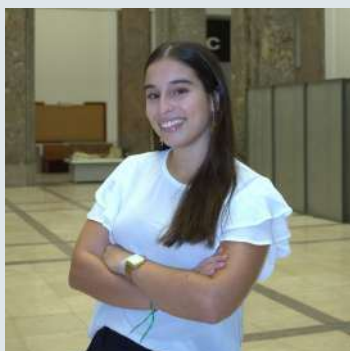


AI JOBS



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How can AI affect the job market?

Nowadays, there isn't a day that goes by without news about AI and its power to impact our lives. On one hand, we are promised an era of unprecedented productivity and economic growth. On the other hand, we are warned of a scary "jobpocalypse" where millions of roles become obsolete, particularly for those just starting their careers. So, should we be worried? This is the main question of today, and unfortunately it doesn't have a simple answer.

The Anxiety About AI

The pressure is higher for those at the very beginning of their professional lives, where the traditional pyramid of the career ladder is narrowing its base. Data from the job platform Indeed reveals a staggering 33% drop in job vacancies for new graduates in the past year alone. This trend is fueling the emergence of a "diamond-shaped structure" in many companies, with a strong core of mid-career professionals but a dangerously narrow base of junior talent [6]. Companies are creating a very serious problem by doing this: by eliminating the very roles that once provided foundational experience, they are then forced to demand two to three years of experience for 61% of jobs previously considered entry-level, according to SHRM Research, making it nearly impossible for new talent to enter the pipeline [8]. Some companies might even rely on an apprentice-master-like relationship between new graduates and current employees, where the new graduates would work for free (or even pay) for 2 or 3 years to gain experience so that they get a job after that. Many view this as a form of modern paid slavery [6].

The Counter-Narrative

History has shown that disruptive technologies, from the electric motor to the personal computer, have ultimately been powerful catalysts for job creation and economic growth.

Strategic analysis indicates AI is set to follow this pattern, driving new opportunities even as it redefines existing roles.

A key theme in this optimistic view is the concept of augmentation over outright replacement. The International Monetary Fund (IMF) found that roughly two-thirds of jobs will experience partial automation of specific tasks rather than complete elimination [1].

This shift allows human workers to move away from repetitive work and focus on higher-value activities that require creativity, strategic thinking, and complex problem-solving. Perhaps the most profound impact of AI will not be on the number of jobs, but on the type of work and the skills that are valued. The future of work demands a massive strategic pivot away from routine cognitive and manual tasks and toward capabilities that are uniquely human.

What are the benefits for companies of AI doing the job of employees?

The integration of AI into business operations has become a central element of digital transformation. When applied to tasks traditionally carried out by employees, AI offers plenty of strategic and operational advantages.

Productivity and Efficiency Gains

AI systems can execute repetitive, rules-based, and data-intensive activities with high speed, precision, and consistency, enabling organisations to streamline workflows, shorten process cycles, and reduce error rates. Large-scale deployments in finance, logistics, and professional services show that AI-driven automation has reduced processing times for administrative and customer-facing tasks from days to minutes, allowing firms to reallocate human labour toward higher-value activities such as strategic analysis and innovation [1][3]. These productivity gains contribute to economic growth and improved service availability,

while hybrid human–AI work models have been associated with reduced burnout and improved job satisfaction by limiting exposure to monotonous tasks [2][6].

Cost Reduction and Operational Scalability

Automation lowers operational costs by reducing dependence on large labour forces and minimising expenses related to recruitment, training, and employee turnover. Once implemented, AI systems can be scaled across business units or regions at minimal marginal cost, enabling firms to expand without proportional increases in staffing [1][4]. Empirical evidence from digital banking, e-commerce, and telecommunications indicates that these savings are often passed on to consumers through lower prices and round-the-clock service availability, improving accessibility and convenience and positively affecting quality of life [6][7].

Enhanced Decision-Making Capabilities

AI-driven analytics enhance managerial decision-making by analysing complex datasets, identifying patterns, and generating predictive insights. In retail and manufacturing, AI-based demand forecasting has improved accuracy and reduced overproduction and inventory shortages, lowering costs and environmental waste [1][5]. In finance and insurance, AI models strengthen fraud detection and risk assessment, contributing to reduced losses and more stable pricing structures [3][4]. These capabilities improve organisational agility and resilience in volatile market conditions.

Improved Quality, Consistency, and Compliance

AI ensures consistent task execution by eliminating performance variability linked to human fatigue or subjective judgement. This is particularly relevant in regulated sectors such as healthcare, pharmaceuticals, and financial services, where AI-based monitoring systems have reduced error rates and improved compliance with regulatory standards [2][4]. Automated oversight decreases the likelihood of penalties, recalls,

and service failures, increasing institutional trust and service reliability [6].

Enabling Innovation and New Business Models

AI enables the development of innovative products, personalised services, and data-driven business models that would be difficult to achieve through traditional methods. Companies adopting AI have introduced predictive maintenance, intelligent recommendation systems, and dynamic pricing strategies, generating new revenue streams and accelerating product development cycles [1][5]. These innovations enhance customer experience and support the creation of new professional roles in AI governance, data analysis, and system supervision [2].

What are the risks?

Despite the advantages referred above, delegating employee tasks to AI introduces significant risks that organisations must anticipate and manage carefully.

Loss of Tacit Knowledge and Overdependence on Technology

Extensive automation of employee tasks risks eroding tacit knowledge embedded in human experience and judgement. Evidence from highly automated organisations indicates that removing humans from critical decision loops reduces the ability to respond effectively to unexpected events or system failures, thereby weakening organisational resilience [3][6].

Operational Failures and Model Limitations

AI systems are highly dependent on data quality, model validity, and continuous oversight. Documented cases show that biased or outdated datasets can lead to systematic errors in recruitment, credit scoring, and supply chain management, with negative financial and reputational consequences [5][8]. Overreliance on algorithmic outputs without human supervision amplifies the scale and impact of such failures [1].

Ethical, Legal, and Regulatory Challenges

Automated decision-making raises concerns related to transparency, accountability, discrimination, and data privacy. Organisations deploying opaque AI systems have faced regulatory scrutiny, litigation, and reputational damage, particularly as governance frameworks become more stringent [2] [3]. Compliance with emerging AI regulations requires investment in explainability, auditing, and ethical oversight, increasing organisational complexity and cost [4].

Workforce Disruption and Cultural Impact

The replacement of employee tasks with AI can generate uncertainty, resistance, and declining morale, particularly in the absence of reskilling or redeployment strategies. Studies indicate that organisations failing to invest in workforce transition measures experience reduced engagement, higher turnover, and weakened organisational culture [2][6]. These dynamics can limit long-term productivity gains and exacerbate social inequality.

Cybersecurity and Vendor Dependence

AI adoption increases exposure to cybersecurity threats by expanding the digital attack surface and introducing vulnerabilities such as data poisoning and model manipulation. Reported incidents involving AI-enabled systems have resulted in service disruptions and increased security expenditure [4][8]. Additionally, reliance on external AI vendors raises concerns regarding data sovereignty, supply chain resilience, and long-term strategic autonomy [1][7].

Which sectors are going to be more affected?

The sectors most affected by AI will be those with a high share of routine tasks, codifiable tasks and strong incentives to cut costs or increase scale. Evidence for Portugal shows that almost 30% of jobs are in “collapse professions”, mainly roles with high automation risk and limited scope to benefit from AI, concentrated in a few sectors [9][12] [13].

Manufacturing and low-tech industry

Production lines, quality control, logistics inside factories and basic machine operation are highly standardised and already partly automated. As AI and robotics become cheaper and more capable, many of these tasks can be done with less human labour, particularly in low-skill positions such as machine operators, assembly workers or basic process controllers [11][12][13].

Retail, hospitality and basic customer service

Cashiers, sales assistants, call-centre agents and fast-food or counter service workers perform repetitive tasks that can be replaced or heavily supported by self-checkout systems, chatbots and recommendation engines. In Portugal, “other sales workers” and “waiters and bar staff” are among the largest groups in the high-risk “collapse” category, showing how exposed these services are [9][10][13].

Transport, warehousing and logistics

Route planning, inventory management and even driving are increasingly supported by AI. Warehouse automation and optimisation systems can reduce the need for routine manual work such as picking, packing and basic stock handling, while autonomous or semi-autonomous vehicles threaten some driving jobs in the long run [9][11][12].

Administrative and back-office tasks

Back-office and administrative positions that involve data entry, document processing, scheduling and standard reporting are doubly exposed: they sit in the “terrain of the machines”, with both high automation risk and high AI exposure [10][11][13]. AI systems can draft emails, summarise documents, process invoices and handle standard customer queries, reducing demand for traditional back-office staff [9][10].

Some high-skill knowledge services (transformative rather than purely destructive impact)

Legal services, finance, consulting and parts of higher education are highly

exposed to language models and advanced analytics [9][10]. Here AI is more likely to change the nature of work than to eliminate all jobs: routine research, drafting and analysis can be automated, while human professionals focus on complex judgement, client interaction and final responsibility. Still, this will reshape career paths and required skills in these sectors [12][13].

Which sectors are going to be less affected?

Sectors less affected are those where core tasks rely on interpersonal interaction, physical presence in unstructured environments, or complex judgement that is hard to codify and also sectors with low exposure both to automation and to AI’s transformative potential [9][11][13].

Health, personal care and social services

Nursing, elderly care, childcare and many therapeutic professions require empathy, trust and real-time physical interaction. AI can support diagnosis, scheduling or documentation, but it is unlikely to replace the relational and caregiving aspects [10][11][13].

Education and training (especially early and face-to-face levels)

Teachers, trainers and early-childhood educators combine subject knowledge with classroom management, motivation and socialisation. AI tools can help with content creation and personalised exercises, but the core of teaching such as motivating, mentoring and managing group dynamics remains human-intensive [9][11][13].

Construction and many on-site manual trades

While some construction tasks can be automated, much work on building sites is non-routine, happens in changing physical environments and requires coordination between multiple teams [11][12][13].

Personal services, hospitality at the high-contact end, and some cleaning roles

Hairdressing, beauty services, sports coaching, high-end hospitality and parts

of cleaning depend on physical presence and personal relationships. Technology can support booking, payments or task allocation, but the service itself is still delivered face to face. These jobs often show low AI exposure and only moderate automation risk [10][13].

Creative industries and complex management roles

Professions that rely on original creation (designers, artists, content creators) and on strategic decision-making (top managers, entrepreneurs) are more likely to use AI as a complement for ideas, analysis or simulation than to be replaced by it. Occupations on the rise with high AI exposure and low automation risk include engineers, IT specialists, architects, scientists and senior managers: sectors where AI amplifies human capability instead of substituting it [9][12][13].

How should the transition go?

The labor market's future is a direct result of the strategic decisions made by business executives and policymakers today rather than a predetermined outcome. In terms of integrating artificial intelligence, society is currently at a fork in the road. Fast adoption combined with proactive worker redeployment is the best course of action. In this case, technology is used to maximize human potential, but it can only be sustained if substantial investments are made in human capital.

By ensuring that the workforce has the skills needed to fill the new, higher-value jobs being created as roles are displaced, this strategy prevents mass unemployment. On the other hand, a passive strategy with poor redeployment or slow adoption carries significant financial risks. If technology is only used to reduce costs without investing in workforce transition, millions of people may not be able to contribute productively to the economy, which would result in stagnation rather than the efficiency that was promised.

Portugal's transition strategy needs to be customized to its unique workforce distribution reality.

Currently, the labor market is separated into discrete "digital terrains" that call for various forms of intervention. Workers in "Rising Professions," which account for about 22.5% of employment, are well-positioned to use AI to increase productivity while avoiding automation. The "Collapsing Professions," which make up nearly 29% of the workforce and are at a high risk of becoming obsolete due to automation, present a serious obstacle.

For this sizable group, the transition is urgent and calls for strong social protection systems that offer active routes to new job opportunities in addition to financial assistance [13].

Preserving the Talent and Entry-Level Roles

In order to prevent a structural crisis, a successful transition requires that businesses completely reconsider their hiring and retention practices. A "diamond-shaped structure" with a strong core of mid-career professionals and a dangerously small base of junior talent is emerging in many organizations as a result of current trends. This short-term efficiency creates a long-term vulnerability. By eliminating the roles that once provided foundational experience, companies are destroying their own future talent pipelines.

To correct this, businesses are encouraged to change their strategies from "buying" to "building" solutions for their clients. Businesses can no longer continue with an apprentice/master model along with the elimination of junior level roles as a method for achieving profit. Instead, businesses need to establish internal academies and mentorship type programs so that the junior employee will develop the competencies required to act as a "human-in-loop" supervisor over AI systems. The development of competencies will allow the organizations to continue the transfer of tacit knowledge along with organizational culture as this knowledge continues to be automated through AI.

To ensure a successful transition, it is imperative that our educational

institutions and corporate training programs shift their focus away from developing technical skills and instead focus on developing those 'soft' skills that are difficult for AI systems to replicate. Soft skills combined with digital literacy will be critical to the success of the digital economy. In addition, the methodology for this policy must be differentiated based on the geographic region. Therefore, we need to develop a regional development strategy that includes creating Technology Hubs located in most vulnerable regions, thus promoting local innovation and job creation.

By doing this, we ensure that all regions of the country have access to the opportunities created by the digital shift.

Should we be worried?

The future is not predetermined. The ultimate impact of AI on the job market, whether it leads to shared prosperity or widespread displacement, depends entirely on the choices made today by businesses, educators, and policymakers. The evidence overwhelmingly suggests that a passive approach will lead to the most negative outcomes.

The core strategic imperative is to invest in human capital, not simply use AI as a tool for short-term cost-cutting. Experts warn that cutting entry-level positions to save money is an "exponentially bad move" [8] that destroys a company's internal talent pipeline, leading to critical shortages of experienced staff in the future.

There are two main paths that society can choose from:

Fast Adoption and Proactive Redeployment:

In this scenario, society embraces technology while simultaneously investing heavily in reskilling and transitioning workers. This path leads to the highest potential productivity growth and avoids mass unemployment by ensuring people have skills for the jobs being created.

Slow Adoption or Poor Redeployment:

In this scenario, technology is implemented without a corresponding investment in people, which leaves millions of people unable to participate productively in the economy [1].

So, should we be worried?

Yes, we cannot be passive about this change. We need to actively work on this problem. We need to treat worry as a catalyst for decisive actions. This way, we can forge a future that is more productive, innovative and prosperous. The fundamental challenge of our time is not to stop the advance of AI, but to guide its integration.

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