

## C-SAS Current Event Analysis

# HOW AI WILL DISRUPT THE JOB MARKET IN SOUTH ASIA?

**Md. Mushfiqur Rahman**

Sr. Manager, Projects and Research, CES, ULAB

**Sajid Amit**

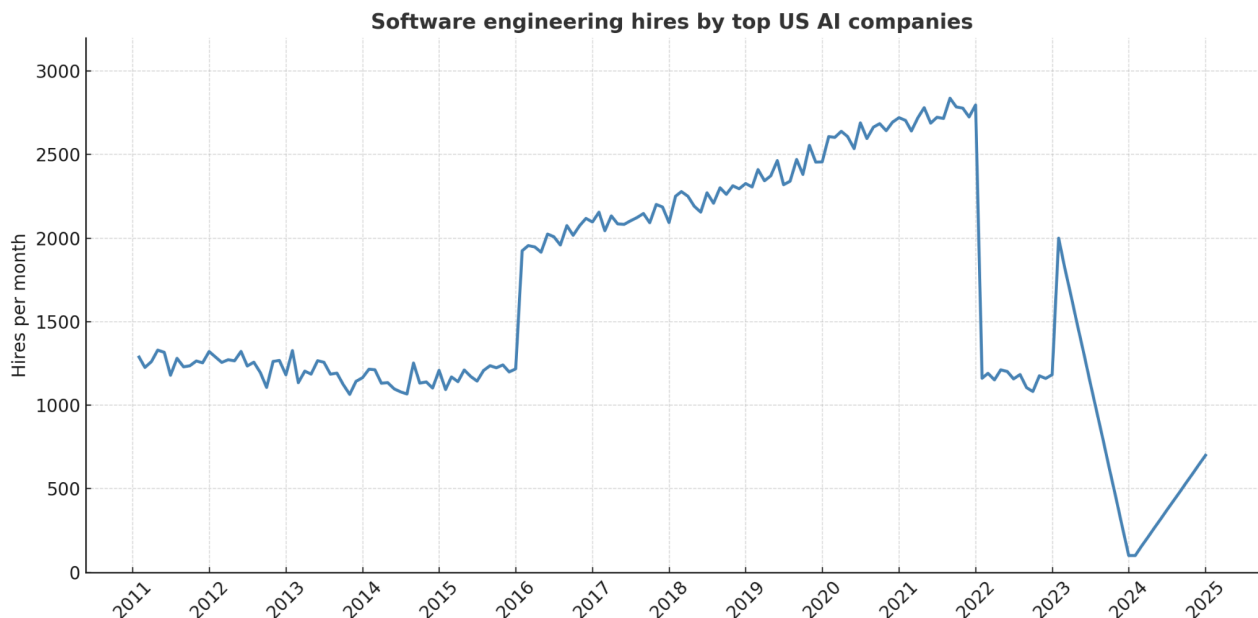
Associate Professor

Director, Center for Enterprise and Society,, ULAB

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Throughout modern history, the structure of labor has evolved in response to prevailing technologies. The industrial age introduced mechanization and factory systems. The late 20th century brought digital infrastructure and computing that kept an imprint in almost every sector. Today, artificial intelligence is imbuing another turning point, not merely altering how work is done, but it is a reconfiguration of work and how we see it, as evident by the graph below. The graph portrays how an essential job role like Software Engineering demand declined over the years, due to the advent of AI.

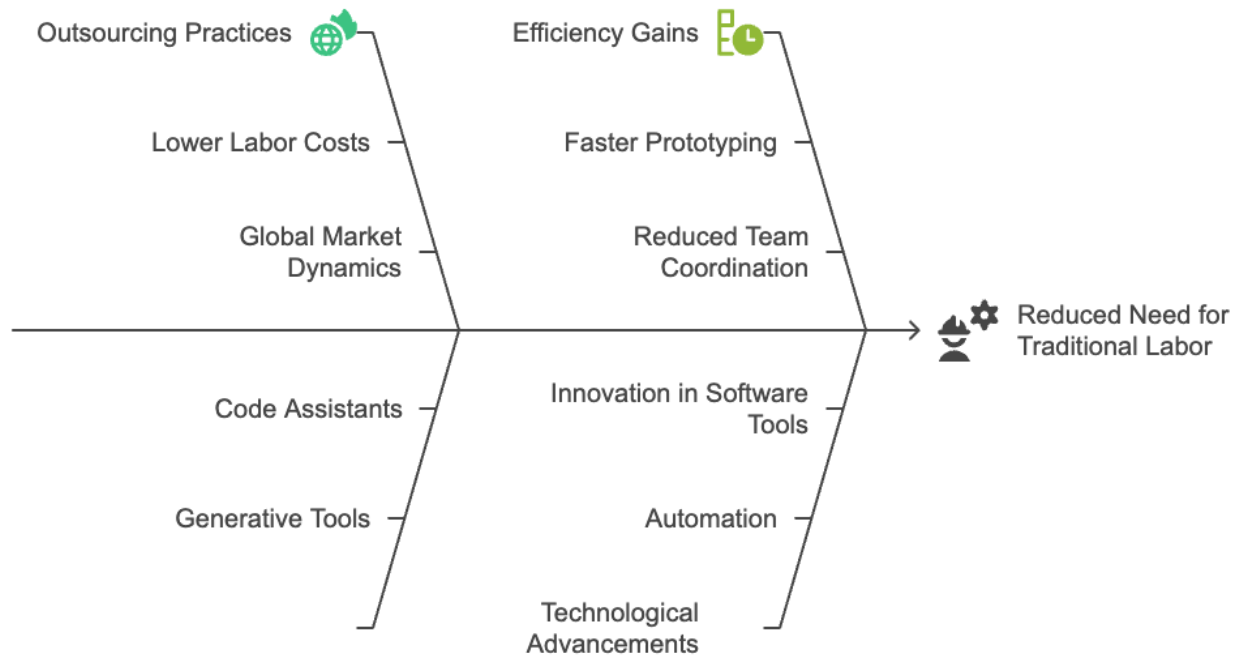
**Figure 1: Software engineering hires by top US AI companies**



Source: Will Artificial Intelligence Replace Software Engineers?, Financial Times (2025)

This profound shift is exemplified by recent labor market data within the technology sector. The accompanying histogram (Figure 1) illustrates demand trends for software engineering roles at leading U.S. AI companies over a thirteen-year span (2011–2023). After a decade of consistent growth culminating in a peak in 2022, demand plummeted by 53% the following year. This precipitous decline indicates a strategic recalibration: as AI-driven automation matures, firms are able to substantially reduce reliance on human coders while simultaneously amplifying output. To unpack the underlying causes and dynamics of this phenomenon, a fishbone diagram has been developed to systematically analyze the contributing factors.

**Figure 2: CES illustration based on Decline in Software Engineering Job Demand (2011–2023) and Contributing Factors**



As is evident, the implication from the above picture is concerning. Output per worker has risen, but not in a way that creates proportionate new employment. These dynamic carries particular weight in South Asia, where a large segment of the workforce is concentrated in traditional roles that are now increasingly resistant to automation and AI-driven substitution.

In India, Bangladesh, Pakistan, and Sri Lanka, routine-intensive roles such as data entry operators, customer support agents, transcriptionists, junior software developers, textile machine operators, and even school-level tutors are facing mounting pressure. Many of these jobs were seen as a springboard for young workers with limited formal education

but sufficient practical skills. They formed a crucial buffer between informal labor and white-collar employment. That buffer is rapidly thinning.

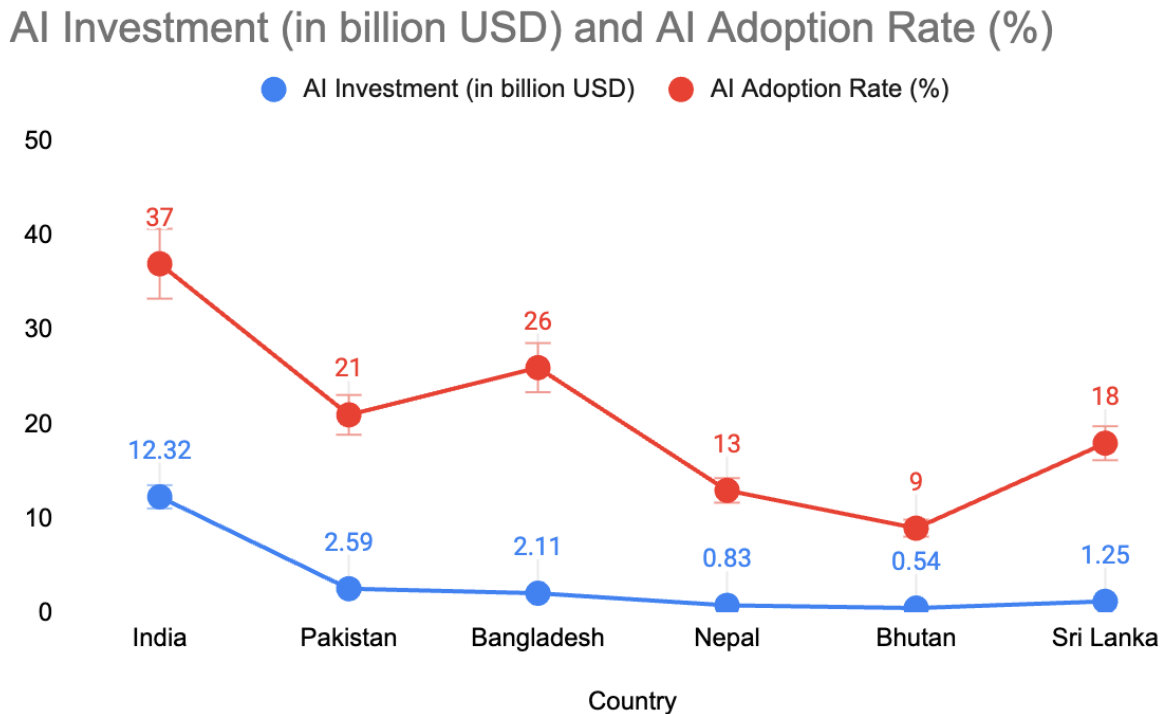
At the same time, AI is generating a narrow band of new roles like data annotation specialists, machine learning model testers, workflow integrators, prompt engineers, and AI ethics reviewers. However, as obvious, these jobs are not emerging at the scale required to absorb those displaced. More critically, they demand a skillset that is still rare in the region: interdisciplinary thinking, computational fluency, and domain-specific insight. The objective of this analysis is to identify the plausible threats posed by AI and scope in new opportunities that come with it.

## **AI Landscape in South Asia**

In order to understand the potential impact of AI on the job market in South Asia, we must begin by examining how much countries are investing in the technology and how quickly they are adopting it. Though grouped together geographically, each South Asian country operates with its own economic character, institutional capacity, and pace of technological change. These differences shape not only the speed of AI adoption but also the depth of its potential disruption.

What follows is a closer look at the current investment levels and adoption rates across the region. It is a necessary first step in anticipating where the labor market will shift most significantly, and how prepared each country is to absorb that change.

**Figure 3: AI Investment (in billion USD) and Adoption Rates (%) across South Asian Countries**



Source: Calvino (2023), International Federation of Robotics (2022), McKinsey (2023), World Economic Forum (2024), Rahman and Akter (2024)

What we can infer from this graph, India is the clear regional leader, with USD 12 billion in AI investment and an adoption rate of 37 percent across formal sectors. Large Indian conglomerates and tech firms have begun to embed AI in logistics, healthcare diagnostics, retail personalization, and financial fraud detection. The presence of a mature digital ecosystem, along with deep venture capital and startup infrastructure, explains this lead.

Bangladesh and Pakistan follow, with more modest investments. In both countries, the banking and telecom sectors are driving early-stage adoption particularly in customer onboarding, automated messaging, and predictive analytics for fraud and churn. Local startups are beginning to build around these opportunities, but ecosystem support remains thin. In Bangladesh, AI is emerging within export-facing verticals such as garments and logistics, while in Pakistan, the public sector has shown interest in health and agri-tech applications.

Adoption in Nepal, Bhutan, and Sri Lanka remains nascent. Investment levels are still below USD 1.5 billion in each country, and usage is typically confined to donor-funded pilots, urban logistics platforms, and a handful of digitally forward firms. The absence of

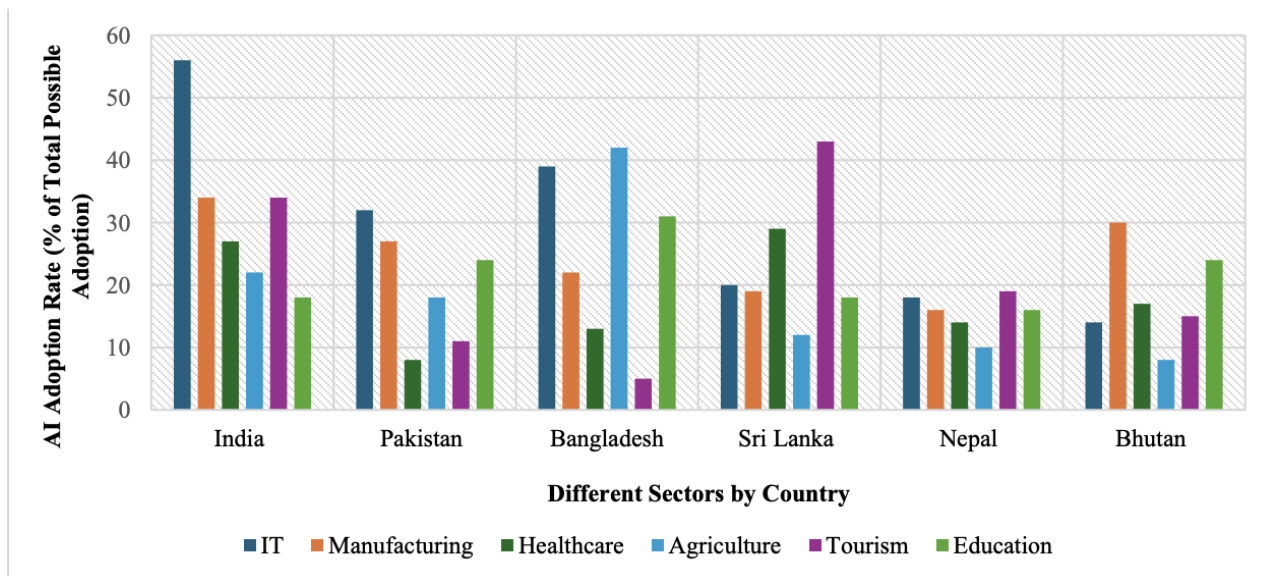
robust cloud infrastructure, high-speed internet, and digital payment ecosystems continues to limit scalable deployment.

What this data reveals is a two-tiered AI economy: one group of countries is slowly integrating AI into enterprise-level processes, while the rest remain largely at the margins. Yet even limited adoption can trigger significant labor displacement, especially in sectors where repetitive, rules-based tasks dominate—data entry, clerical services, IT maintenance, and customer support.

## **Sectoral Implications of AI**

Trends and priorities vary in different South Asian nations. India leads in the IT sector, standing at 56%, due to its strong technological infrastructure. In contrast, Pakistan has an IT adoption rate of 32%, which might indicate a potential growth area. There is a high Romanian Journal of Economics/Revista Română de Economie ISSN-L: 1220-5567, eISSN: 2344-4657, (59), 2/2024, www.revecon.ro 59 focus on agriculture, with the adoption rate standing at 42 percent, much higher than in other countries, thus suggesting strategic importance to enhancing agricultural output with AI. The highest adoption rate, 43 percent, can be seen in the tourism sector of Sri Lanka, reflecting strategic thrusts on leveraging AI to promote this key business. A high adoption rate of 16% in manufacturing for Nepal and 30% for Bhutan denotes the initiatives being carried out toward the revival and upgrade of industrial operations. Most regional countries also manifest a similar trend in the adoption rate within the education sector, at 18% for India, 31% for Bangladesh, and 24% for Bhutan, proving their regional commitment toward the inclusion of AI in educational institutions.

**Figure 4: Sector-wise AI Adoption Rates (%) in South Asian Countries (2024)**



Source: McKinsey (2023), World Economic Forum (2024), Rahman and Akter (2024)

## Regional Specificity: How AI Will Reshape Jobs Differently Across South Asia

While AI projects some challenges across South Asia, the nature and extent of labor market disruption will vary significantly by country. These variations show each economy’s sectoral composition, degree of informality, level of digitization, and institutional readiness. A closer look at the regional breakdown helps illuminate where job losses may be concentrated, and where opportunities might be created.

Country	High-Risk Sectors (Displacement)	Emerging Job Areas (Creation)	Commentary (Explainer, Short)
India	BPO, data annotation, back-office IT	AI operations, digital healthcare, cybersecurity	1. Automation threatens routine IT and BPO roles, but demand for AI and digital healthcare skills is rising.  2. India can pivot from low-skill outsourcing to high-tech operations, provided reskilling bridges the rural–urban digital divide.

<b>Bangladesh</b>	RMG, clerical support, informal logistics	Supply chain analytics, automation maintenance, ed-tech	<p>1. Labor-intensive RMG and clerical jobs face automation risks, yet analytics and ed-tech could absorb displaced workers.</p> <p>2. Low digital literacy and gender gaps may slow uptake of new roles without targeted skill programs.</p>
<b>Pakistan</b>	Customer service, transcription, public administration	Agri-tech, fintech analytics, civic-tech support	<p>1. Routine service jobs are at risk, while fintech, agri-tech, and civic-tech offer growth potential.</p> <p>2. Infrastructure constraints and political uncertainty could limit adoption of emerging jobs.</p>
<b>Sri Lanka</b>	Administrative services, tourism booking, accounting	AI-assisted tourism services, digital media	<p>1. Administrative and tourism back-office roles are vulnerable; digital media and AI in tourism can create new opportunities.</p> <p>2. Economic instability may slow the scale-up of these emerging sectors.</p>
<b>Nepal</b>	Manual logistics, retail, government data	Renewable energy tech, drone ops, remote freelancing	<p>1. Low-skill logistics and retail jobs face displacement; renewable energy and remote freelancing are growth areas.</p> <p>2. Limited connectivity and funding hinder rapid transition to new sectors.</p>
<b>Bhutan</b>	Clerical roles in public sector	Digital public services, ethical AI auditing	<p>1. Clerical work is at risk; digital governance and AI ethics can absorb skilled talent.</p> <p>2. A small talent pool may constrain the country's ability to scale new roles.</p>

In India, which hosts a significant share of the world's outsourced IT and business process services, the displacement risk is centered around routine digital tasks. Entry-level coding, data cleaning, and quality assurance, which was once career footholds for young graduates, are increasingly automated. However, India's strong engineering base and digital startup ecosystem may absorb part of this shock through new roles in cybersecurity, AI deployment, and digital health infrastructure. The challenge lies in bridging the gap between the displaced and the newly created roles, particularly for those outside Tier-1 cities.

In Bangladesh, the Ready-Made Garments (RMG) sector, which employs over 4 million workers, is facing the early stages of AI-linked automation, particularly in quality control, cutting, and logistics. These shifts threaten jobs predominantly held by women with low formal education. On the other hand, there is potential for job creation in AI-assisted supply chain management, factory automation maintenance, and online education platforms. However, these roles require digital familiarity and mid-level technical skills, which remain limited.

In Pakistan, customer support, transcription, and clerical work in government services are vulnerable due to AI-driven chatbots, speech-to-text software, and document automation. However, Pakistan's growing fintech sector, coupled with agri-tech initiatives, may generate new employment in data operations, compliance, and civic-tech delivery. Yet infrastructure gaps and policy inconsistency could limit scale.

Sri Lanka, with a service-heavy economy including tourism and accounting support, faces AI-induced disruption in booking services, inventory management, and remote accounting. Yet AI can also augment Sri Lanka's strengths—particularly in the creative and tourism sectors—with opportunities in digital marketing, AI-generated content, and virtual experience design. The country's economic volatility, however, may limit investment in workforce upskilling.

In Nepal and Bhutan, the disruption will be slower but not absent. Public sector data processing, informal retail, and manual logistics are at risk. Simultaneously, drone operations for agriculture, AI-assisted climate monitoring, and remote freelance work may emerge as niche growth areas. However, limited infrastructure and a narrow digital talent pipeline pose major constraints.

## **Way Forward**

As South Asia stands at the threshold of an AI-driven future, the path forward must be marked by thoughtful investment, robust institutional frameworks, and culturally responsive governance. The region faces formidable structural and systemic barriers to widespread AI adoption, but these challenges also provide a unique opportunity to shape a development paradigm that is both technologically progressive and socially inclusive.

To begin with, there is a pressing need to reorient the philosophy of education and skilling not merely to “upskill” workers for AI, but to cultivate a generation capable of complementing machines with judgment, creativity, and ethical reasoning. This means moving beyond technical training modules and adopting a broader epistemic shift that

values adaptability, lifelong learning, and systems thinking. In practical terms, governments and institutions must create integrated skilling ecosystems that do not operate in isolation from labor market demands. This involves deep partnerships between universities, vocational institutes, and industries where curriculum is co-designed, apprenticeships are institutionalized, and certification systems are portable across sectors. In frontier economies, where informal employment dominates, the challenge is not just new skills but recognition of existing ones. Therefore, credentialing frameworks that validate tacit knowledge.

Parallel to the skilling challenge is the imperative of rethinking industrial policy. In many frontier markets, the state has long been disengaged from strategic economic direction-setting, retreating under the neoliberal consensus. But the AI age demands an active, not a minimal, state. Not in the sense of old-style protectionism, but as a catalytic actor that shapes markets, not just fixes them. This involves identifying niches where frontier economies can competitively localize AI and then aligning infrastructure, incentives, and research funding around them. Rather than attempting to build a Silicon Valley replica, countries should focus on creating regional innovation zones or “AI-for-development corridors,” anchored by universities, startups, and mission-oriented public agencies. These are not mere tech parks, but ecosystems of problem-solving, where AI is not fetishized as a product, but harnessed as a tool to address core development bottlenecks.

Yet none of these strategies will bear fruit without institutional readiness. Most frontier economies suffer from what economists call an “implementation gap”: progressive policies on paper that collapse in execution due to weak coordination, politicization, or administrative fatigue. AI will only exacerbate this unless there is a deliberate investment in state capability. Civil servants, regulators, and planners must be equipped to understand how AI systems work, how bias is encoded, and how automation can alter power dynamics. Building this internal literacy is essential if states are to regulate with legitimacy, not just deference to external actors. Furthermore, AI-related policymaking must be situated within a participatory and anticipatory framework that might include civil society, labor unions, and the media to ensure public trust, ethical safeguards, and social consensus.

Finally, frontier markets must recognize that the most critical terrain in the AI economy is not hardware, but data. Data will determine who controls value chains, who sets standards, and who reaps returns. Unfortunately, many low-income countries are currently locked in asymmetric data arrangements where local data is extracted by global platforms without regulatory reciprocity. A strategic response must therefore include data localization policies, regional data-sharing compacts, and collective bargaining power at international AI forums. Much like the climate movement birthed the idea of “common but differentiated responsibilities,” the AI discourse must make room for technological equity—a doctrine that argues for fairer access to AI infrastructure, APIs, and training datasets for the Global South.

In sum, frontier economies cannot afford to treat AI as an imported novelty. It must be approached as a developmental case-study. The policy response, therefore, cannot be episodic or donor-driven. It must be strategic, state-led, and society-owned. AI is not just

about machines; it is about power, purpose, and possibility. And if harnessed with foresight, these very markets, often labeled as peripheries, may well become laboratories of a more equitable digital future.

## Reference

1. Abdulai, A., & Hussain, N. R. (2023). Dynamics of entrepreneurial ecosystem and entrepreneurship development: Evidence from Africa. *Cogent Business and Management*, 11(1). <https://doi.org/10.1080/23311975.2023.2292315>
2. Abhijith Ajithkumar, A., David, A., Jacob, A., Alex, A., & Thomas, F. A. CMI. (2023). Impact of AI on employment and job opportunities. *International Journal of Engineering Technology and Management Sciences*, 7(4), 507–512. <https://doi.org/10.46647/IJETMS.2023.V07I04.067>
3. Acemoglu, D., Autor, D., Hazell, J., & Restrepo, P. (2022). Artificial intelligence and jobs: Evidence from online vacancies. *Journal Name*, 40(S1), S293–S340. <https://doi.org/10.1086/718327>
4. Rahman, M. A., & Akter, S. (n.d.). The transformative role of AI in reshaping employment trends across South Asia. *Journal Name*, 68. [Add DOI if available]
5. Acemoglu, D., & Restrepo, P. (2020). The wrong kind of AI? Artificial intelligence and the future of labour demand. *Cambridge Journal of Regions, Economy and Society*, 13(1), 25–35. <https://doi.org/10.1093/cjres/rsz022>
6. Atkins, R. M. B., Hernández-Lagos, P., Jara-Figueroa, C., & Seamans, R. (2023). JUE insight: What is the impact of opportunity zones on job postings? *Journal of Urban Economics*, 136. <https://doi.org/10.1016/j.jue.2023.103545>
7. Babina, T., Fedyk, A., He, A., & Hodson, J. (2024). Artificial intelligence, firm growth, and product innovation. *Journal of Financial Economics*, 151. <https://doi.org/10.1016/j.jfineco.2023.103745>
8. Bankins, S., Ocampo, A. C., Marrone, M., Restubog, S. L. D., & Woo, S. E. (2024). A multilevel review of artificial intelligence in organizations: Implications for organizational behavior research and practice. *Journal of Organizational Behavior*, 45(2), 159–182. <https://doi.org/10.1002/job.2735>
9. Brynjolfsson, E., & Mitchell, T. (2017). What can machine learning do? Workforce implications: Profound change is coming, but roles for humans remain. *Science*, 358(6370), 1530–1534. <https://doi.org/10.1126/science.aap8062>
10. Calvino, F. (2023). A portrait of AI adopters across countries: Firm characteristics, assets' complementarities and productivity. *Journal/Publisher Name*. <https://doi.org/10.1787/0fb79bb9-en>
11. Carbonara, E., Focacci, C. N., & Santarelli, E. (2023). Mitigating the labor displacing effects of automation through a robot tax: Evidence from a survey experiment. *Economics of Innovation and New Technology*. <https://doi.org/10.1080/10438599.2023.2293031>