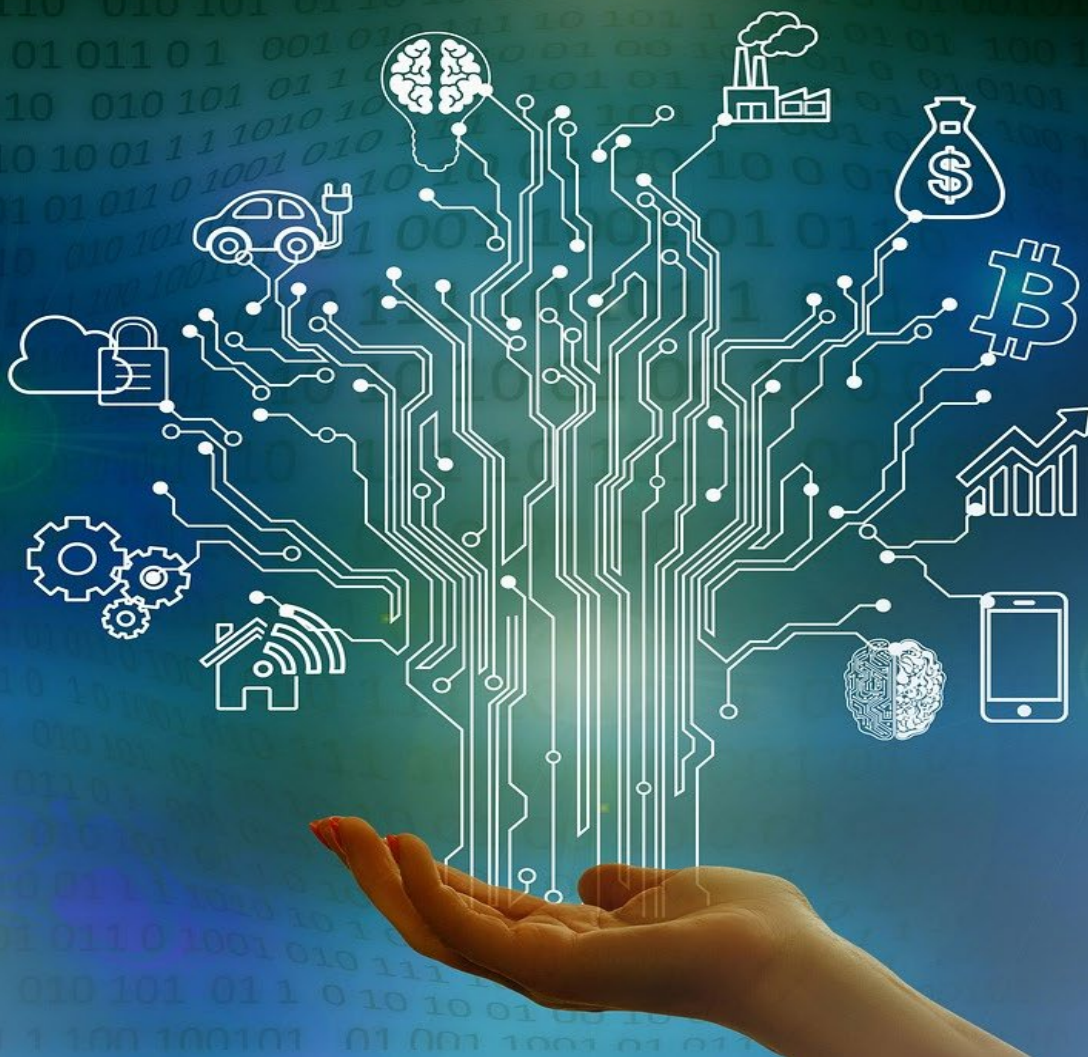




ECONOMIC DEVELOPMENT
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*International Economic
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Artificial Intelligence Impact on Labor Markets

Literature Review

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Introduction

Artificial Intelligence (AI) has emerged as a transformative force in the labor market, reshaping the nature of work, job roles, and employment dynamics across various industries. As AI technologies continue to advance, the impact of AI on the labor market is multifaceted and complex. On one hand, AI has the potential to automate tasks, enhance decision-making processes, and create new job opportunities in fields such as data analytics, machine learning, and AI development. On the other hand, it raises concerns about job displacement, skill polarization, and ethics.

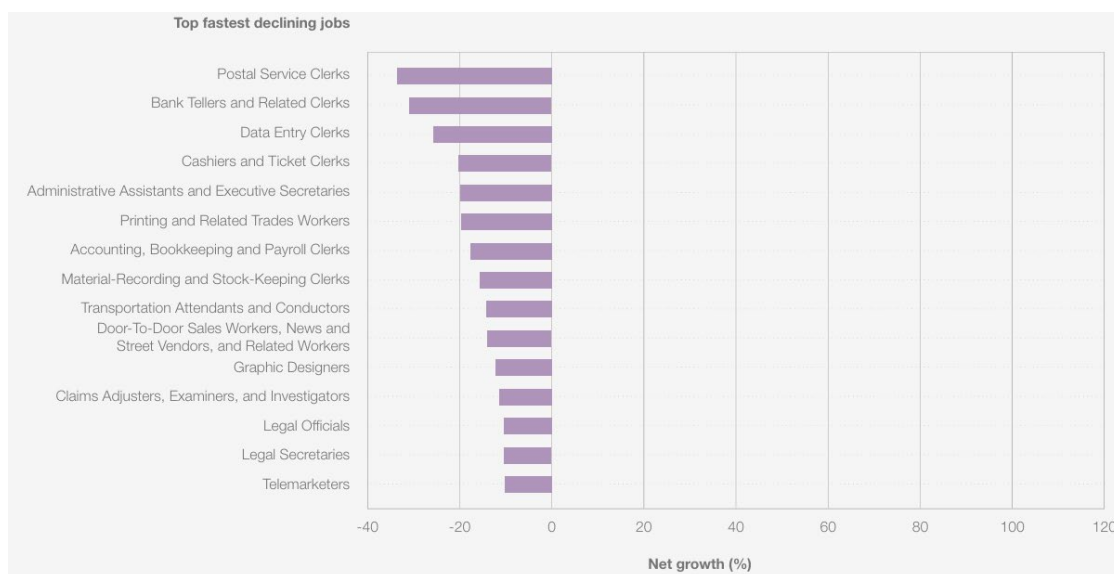
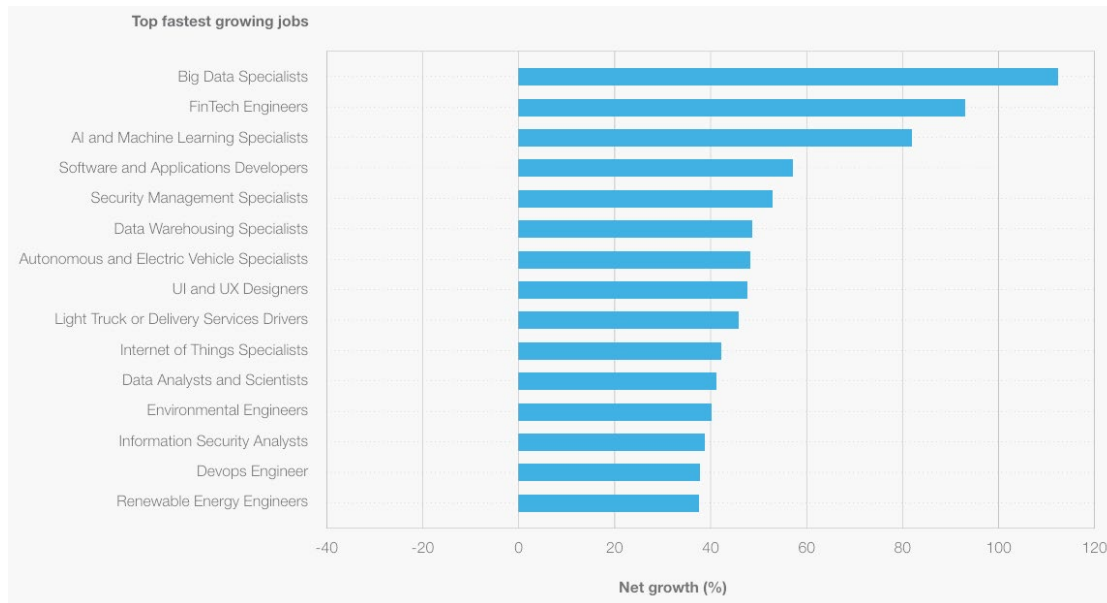
This literature review will examine the potential benefits and drawbacks of AI's impact on the labor market—and explore how its challenges can be transformed into opportunities—to provide a comprehensive perspective on this technological transformation.

As we examine AI's impact on labor markets, it's helpful to first understand which jobs are projected to grow and decline in the coming years. The figure below, based on data from the World Economic Forum's Future of Jobs Survey (2024), illustrates the projected job market transformation anticipated between 2025 and 2030. Notably, AI and technology-related roles dominate the fastest-growing categories, while many administrative and clerical positions face decline. This visualization provides context for our subsequent discussion of AI's benefits and challenges in the workplace.

“The pace of workforce transformation is likely to accelerate, with half of today’s work activities potentially automated between 2030 and 2060.” [McKinsey](#)

AI-Influenced Job Market Transformation: Fastest-Growing & Fastest-Declining Jobs, 2025–2030

(World Economic Forum, Future of Jobs Survey, 2024)



As shown in the figure above, AI and related technological specializations represent several of the fastest-growing job categories. This growth reflects the positive potential of AI in the labor market, which we explore in detail in the following section.

Pros

Job Creation and Transformation

Rather than simply displacing jobs, AI is creating new opportunities and transforming existing roles. According to the World Economic Forum, AI and automation are predicted to contribute 69 million new jobs worldwide by 2028.¹ These new roles often require skills in areas such as creative thinking, data analysis, machine learning, and AI development, highlighting the importance of upskilling and reskilling programs.

Increased Productivity and Efficiency

AI has the potential to significantly boost productivity and efficiency in the workplace. By automating routine and repetitive tasks, AI frees up human workers to focus on more complex, creative, and value-added activities.² A study by Nielsen reported a remarkable 66% increase in employee productivity through the adoption of generative AI tools.³

Economic Growth and Innovation

The increased productivity and innovation driven by AI have the potential to stimulate economic growth. McKinsey estimated that AI could contribute up to \$13 trillion to the global economy by 2030.⁴ This economic boost is expected to come from a combination of labor substitution, enhanced innovation in products and services, and the creation of new demand for AI-related jobs.⁵

Advanced Decision-Making and Resource Allocation

AI can process and analyze vast amounts of data much faster than humans can, leading to more informed and data-driven decision-making in various industries.⁶ This can result in improved outcomes in fields such as healthcare, finance, and manufacturing. AI also helps in optimizing resource allocation and workload distribution, ensuring the right resources are assigned to the right tasks.

¹ "See How the Future of Jobs Is Changing in the Age of AI," World Economic Forum, May 3, 2023, <https://www.weforum.org/stories/2023/05/future-of-jobs-in-the-age-of-ai-sustainability-and-deglobalization/>.

² Anna Morelock, "The Rise of AI: How Artificial Intelligence Is Impacting the Job Market," *Insight Global* (blog), August 2, 2023, <https://insightglobal.com/blog/how-ai-is-impacting-job-market/>.

³ "How Generative AI Increases Workplace Productivity," accessed January 5, 2025, <https://www.moveworks.com/us/en/resources/blog/how-does-generative-ai-increase-productivity>.

⁴ "MGI-Notes-from-the-AI-Frontier-Modeling-the-Impact-of-AI-on-the-World-Economy-September-2018.Pdf," n.d.

⁵ "How Generative AI Increases Workplace Productivity."

⁶ "The Impact of AI on the Labour Market," accessed January 5, 2025, <https://institute.global/insights/economic-prosperity/the-impact-of-ai-on-the-labour-market>.

Improving Job Quality and Workplace Experience

Proper use of AI has the potential to improve job quality by reducing mundane tasks, improving access to the workplace for different types of workers, and helping to improve workplace health and safety.⁷ This can lead to a more engaging, inclusive, and safer working environment.

Addressing Skill Gaps and Education

The rise of AI is driving demand for new skill sets, which is encouraging the development of upskilling and reskilling programs. AI-enabled education could raise educational attainment and productivity growth, preparing the workforce for the jobs of the future.

Complementing Human Skills

Rather than replacing humans, AI is often complementing and augmenting human capabilities. For example, in manufacturing, collaborative robots (cobots) work alongside human workers, enhancing productivity and efficiency.⁸

Cons

Job Displacement and Automation

One of the primary concerns surrounding AI's impact on the labor market is the potential for widespread job displacement and automation. A Goldman Sachs report estimated that approximately 300 million full-time jobs worldwide could be exposed to automation due to generative AI.⁹ This displacement creates significant challenges for affected individuals, potentially leading to unemployment and income insecurity.

The impact of AI on employment is not evenly distributed across industries or skill levels. A study by McKinsey Global Institute suggests that AI could automate up to 30% of hours currently worked across the U.S. economy by 2030.¹⁰ While some sectors may see minimal disruption or even job growth, others may experience significant job displacement.¹¹

⁷ "The Impact of AI on the Labour Market."

⁸ Sudeep Srivastava, "AI in Manufacturing: Use Cases and Examples," *Appinventiv* (blog), July 24, 2023, <https://appinventiv.com/blog/ai-in-manufacturing/>.

⁹ Beatrice Nolan, "AI Systems like ChatGPT Could Impact 300 Million Full-Time Jobs Worldwide, with Administrative and Legal Roles Some of the Most at Risk, Goldman Sachs Report Says," *Business Insider*, accessed January 5, 2025, <https://www.businessinsider.com/generative-ai-chatpvt-300-million-full-time-jobs-goldman-sachs-2023-3>.

¹⁰ "Generative AI and the Future of Work in America | McKinsey," accessed January 5, 2025, <https://www.mckinsey.com/mgi/our-research/generative-ai-and-the-future-of-work-in-america>.

¹¹ Elijah Clark, "Unveiling The Dark Side Of Artificial Intelligence In The Job Market," *Forbes*, accessed January 5, 2025, <https://www.forbes.com/sites/elijahclark/2023/08/18/unveiling-the-dark-side-of-artificial-intelligence-in-the-job-market/>.

Skill Polarization and Inequality

The rise of AI in the job market has resulted in demand for new skill sets, leading to job polarization. While jobs requiring advanced technological and analytical skills are growing, low-skilled positions face the risk of obsolescence. This polarization of jobs exacerbates income inequality and presents challenges for individuals without access to education and training opportunities.¹²

Interestingly, a study published by the Brookings Institution suggests that educated, well-paid workers may be affected even more by the spread of AI than previously thought. Workers with a bachelor's degree, for example, could be exposed to AI over five times more than those with only a high school degree.¹³ This finding challenges the traditional notion that AI primarily affects blue-collar jobs and highlights the potential for significant disruption across various skill levels.

Disproportionate Impact on Vulnerable Groups

Research indicates that AI's impact on the labor market may disproportionately affect certain demographic groups, potentially exacerbating existing inequalities. According to a McKinsey analysis, Black workers are overrepresented in positions at high risk of automation, with 24% working in such roles compared to 20% of white workers.¹⁴ This disparity underscores the potential for AI to have a more severe impact on minority communities, potentially widening racial inequities in the job market.

Similarly, the effect of AI on employment markets is not gender neutral. A study by the International Labor Organization (ILO) predicts that 7.8% of women's occupations in high-income countries could be automated, totaling around 21 million jobs. In comparison, only 2.9% of jobs held by men in high-income countries, or about 9 million positions, have the potential to be automated.¹⁵

Ethical Concerns and Biases

AI systems are not immune to biases inherent in the data they are trained on. Concerns about bias and discrimination in AI algorithms have been raised, as these systems can inadvertently perpetuate existing societal biases. This has significant implications for hiring practices, where AI-powered resume screening algorithms may inadvertently discriminate against certain

¹² Administrator, "4 Ways AI Impacts the Job Market & Employment Trends," University of San Diego Online Degrees, February 21, 2024, <https://onlinedegrees.sandiego.edu/ai-impact-on-job-market/>.

¹³ "What Jobs Are Affected by AI? Better-Paid, Better-Educated Workers Face the Most Exposure," Brookings, accessed January 19, 2025, <https://www.brookings.edu/articles/what-jobs-are-affected-by-ai-better-paid-better-educated-workers-face-the-most-exposure/>.

¹⁴ "The Impact of Generative AI on Black Communities | McKinsey," accessed January 5, 2025, <https://www.mckinsey.com/bem/our-insights/the-impact-of-generative-ai-on-black-communities>.

¹⁵ "Generative AI and Jobs: A Global Analysis of Potential Effects on Job Quantity and Quality | International Labour Organization," August 21, 2023, <https://www.ilo.org/publications/generative-ai-and-jobs-global-analysis-potential-effects-job-quantity-and>.

groups.¹⁶ Ensuring ethical and unbiased AI systems requires careful testing, evaluation, and ongoing monitoring to prevent the perpetuation of social inequalities in the job market.

Psychological Impact on Workers

The introduction of AI in the workplace can have profound psychological effects on workers. Fear of job loss, uncertainty about the future, and diminished human interaction can lead to increased stress and anxiety. Moreover, the devaluation of certain job roles and the emphasis on AI automation can erode workers' sense of purpose and job satisfaction. The psychological well-being of workers affected by AI implementation must be a priority for businesses and policymakers.

Discussion

The impact of AI on the labor market is complex and multifaceted. While there are legitimate concerns about job displacement, skill polarization, and potential exacerbation of inequalities, AI also offers significant opportunities for job creation, increased productivity, and economic growth. The key to harnessing the benefits of AI while mitigating its negative impacts lies in proactive policy measures, investment in education and training, and commitment to ethical AI development and implementation. To transform potential drawbacks into positive outcomes, several strategies can be implemented:

Reskilling and Upskilling Programs

By providing workers with the skills needed in an AI-driven economy, we can turn potential job losses into opportunities for career growth and adaptation.¹⁷

- **Government-led initiatives:** Policymakers should invest in large-scale training initiatives that focus on AI-related skills, data analysis, and digital literacy across society.¹⁸
- **Corporate responsibility:** Companies implementing AI technologies should take an active role in building resilient workforces by prioritizing upskilling initiatives. This not only helps retain valuable employees but also ensures a smooth transition to AI-enhanced operations.¹⁹

¹⁶ Clark, "Unveiling The Dark Side Of Artificial Intelligence In The Job Market."

¹⁷ Ali Zarifhonarvar, "Economics of ChatGPT: A Labor Market View on the Occupational Impact of Artificial Intelligence," *Journal of Electronic Business & Digital Economics* 3, no. 2 (December 5, 2023): 100–116, <https://doi.org/10.1108/JEBDE-10-2023-0021>.

¹⁸ "The Presidio Recommendations on Responsible Generative AI," World Economic Forum, accessed January 26, 2025, <https://www.weforum.org/publications/the-presidio-recommendations-on-responsible-generative-ai/>.

¹⁹ "Over 97 Million Jobs Set to Be Created by AI," Edison & Black, December 21, 2023, <https://edisonandblack.com/pages/over-97-million-jobs-set-to-be-created-by-ai.html>.

Fostering AI–Human Collaboration

Rather than viewing AI as a replacement for human workers, emphasis should be placed on developing AI systems that augment human capabilities:

- **Collaborative AI systems:** Encourage the development of AI tools that work alongside humans, enhancing productivity and decision-making rather than replacing workers entirely.²⁰
- **Human-centered AI design:** Prioritize the creation of AI systems that complement human skills, focusing on areas where human creativity, emotional intelligence, and complex problem-solving are essential.²¹

Promoting Innovation and Entrepreneurship

Encouraging innovation and entrepreneurship can help create new job opportunities in the AI era:

- **AI startup incubators:** Establish government-supported incubators and accelerators focused on AI startups, fostering job creation in emerging tech sectors.
- **Cross-industry AI applications:** Promote the application of AI in diverse industries, creating new business models and job roles that leverage AI capabilities.

Addressing Inequality and Bias

To mitigate the potential for AI to exacerbate existing inequalities, proactive measures are necessary:

- **Inclusive AI development:** Ensure diverse representation in AI development teams to reduce algorithmic biases and create more equitable AI systems.²²
- **Targeted support for vulnerable groups:** Implement specialized training and support programs for demographics most at risk of job displacement, such as minorities and women in certain sectors.

Ethical AI Frameworks and Regulation

Establishing robust ethical guidelines and regulatory frameworks for AI implementation in the workplace is crucial:

- **Transparency and accountability:** Develop clear guidelines for the use of AI in hiring, performance evaluation, and decision-making processes to prevent discrimination.

²⁰ “We Always Hear That AI Will Take Our Jobs. But What Jobs Will It Create?,” World Economic Forum, September 18, 2023, <https://www.weforum.org/stories/2023/09/jobs-ai-will-create/>.

²¹ “A New Look at the Economics of AI | MIT Sloan,” January 15, 2025, <https://mitsloan.mit.edu/ideas-made-to-matter/a-new-look-economics-ai>.

²² “The Presidio Recommendations on Responsible Generative AI.”

- **Worker protection policies:** Implement policies that safeguard workers' rights by regulating the use of the technology, including data privacy protections and fair compensation for AI-augmented productivity gains.²³

Psychological Support and Change Management

Addressing the psychological impact of AI on workers is essential for a smooth transition:

- **Mental health support:** Provide counseling and support services for workers affected by AI-driven changes in the workplace.
- **Change management programs:** Implement comprehensive change management strategies to help workers adapt to new AI-enhanced work environments and roles.

By implementing these strategies, we can work towards transforming the potential negative impacts of AI on the labor market into opportunities for growth, innovation, and improved working conditions. The key lies in proactive planning, collaborative efforts between stakeholders, and a commitment to ethical and inclusive AI development and implementation.

Conclusion

Much like past technological revolutions—such as the Industrial Revolution or the advent of computing—the rise of AI presents both challenges and opportunities for the labor market. History has shown that while these shifts often lead to initial disruption, they ultimately create new industries, redefine job roles, and boost economic growth. Similarly, AI has the potential to drive unprecedented innovation and productivity.

By drawing lessons from past transitions, such as the importance of investing in education, fostering adaptability, and implementing inclusive policies, we can ensure that the benefits of AI are widely shared.

Companies that proactively integrate AI while investing in human capital development will be better positioned for long-term competitiveness in the evolving labor market.

²³ “A.I. Is Going to Disrupt the Labor Market. It Doesn’t Have to Destroy It,” The University of Chicago Booth School of Business, accessed January 26, 2025, <https://www.chicagobooth.edu/review/ai-is-going-disrupt-labor-market-it-doesnt-have-destroy-it>.