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The Impact of Artificial Intelligence on the U.S. Workforce: Job Displacement, Adaptation, and Policy Solutions

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Abstract

This paper examines the positive and negative effects of the rise of Artificial Intelligence (AI) in the US workforce in recent years. Specifically, it explores how AI affects job displacement across various industries, and also discusses automation and its effect on wages and unemployment. It also considers what the future of the workforce may look like, looking at emerging roles enabled by AI in particular. High-skill jobs in technology industries, for example, will become more prominent, while low-skill jobs will likely be replaced. After analyzing these emerging roles, the paper explores the need for upskilling and adapting to the changes in the workforce. Proper adaptation will prevent negative consequences such as unemployment and exacerbated income inequality while maximizing the potential for benefits such as increased efficiency in businesses and added GDP to the economy. The paper concludes by providing policy recommendations to ensure American citizens are supported in this transition to an AI-facilitated workforce. For example, it discusses expanding training programs and strengthening social safety nets as policies to assist the workforce transition. To effectively prepare for the new age of work with AI, the true extent of risks and benefits that come with an AI-facilitated workforce must be understood.

Keywords: Artificial Intelligence (AI), Technology, Workforce, Job Displacement, Automation, Policy, Upskilling

Introduction

Artificial Intelligence (AI) has achieved widespread use across many job industries in recent years and is only growing in usage across businesses and in the workforce. AI, especially generative AI, is increasingly automating more and more tasks that were once completed by humans and therefore significantly reshaping the labor market [3]. As AI continues to proliferate in the job market, questions have increasingly arisen regarding its effect on job displacement and creation. Numerous studies have indicated that AI and generative AI have induced job displacement across various sectors in recent years [1, 2]. Research suggests that low-skill, routine jobs are most likely to be replaced by these new technologies. However, even some high-skill jobs are at risk of automation [3].

At the same time, AI also has the capability to significantly increase economic productivity and create new job opportunities [2]. Understanding the nuances of AI's effects in the labor market and overall economy is essential. Specifically, to reduce the risk of job loss and ensure society is well-prepared for this new era of an AI-driven workforce, workers will need to retrain and upskill to ensure that they can adapt to the effects of AI in the workforce. In addition, policymakers must craft regulations that will

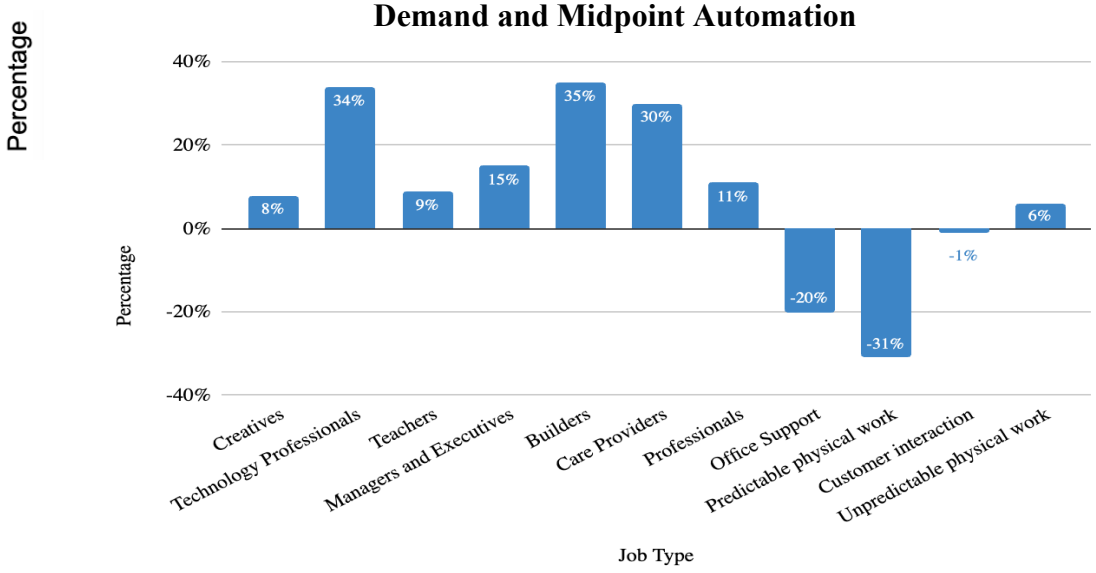
mitigate the negative effects of AI, such as job displacement and unemployment [4]. In recent years, job displacement from AI has become increasingly pervasive in many industries, underscoring the need to truly understand the extent of risks associated with AI automation.

Section 1: AI and Job Displacement

With the new age of AI, 300 million jobs worldwide and two-thirds of U.S. jobs are at risk of partial automation [2]. By 2030, up to 30% of hours worked by humans could be automated with generative AI, with those in low-skill jobs with repetitive tasks most at risk of job displacement. Specifically, occupations in office support, customer service, and food services are projected to face the most substantial job displacement (Figure 1). By 2030, projections estimate a 1.6 million job decrease in demand for clerks, as well as losses of 830,000 jobs for retail salespersons, 710,000 for administrative assistants, and 630,000 for cashiers. On the other hand, high-skill jobs and those that involve social interactions and personnel management are least at risk of automation. These include occupations in management, advanced technology, and art [1]. Technological skills are predicted to grow more rapidly in demand by employers than any other skill in the next 5 years (Figure 1). Due to the nature of this displacement, those in low-wage jobs are most susceptible to job displacement and automation, while those in high-wage jobs are less at risk [5].

Workers in the two lowest-wage quintiles (those earning $38,200 or below a year) are up to 14 times more likely to need to change occupations by the end of this decade than the highest earners. This poses a significant challenge to many because changing occupations is typically accompanied by the need to learn new skills. On the other hand, jobs in the highest wage quintile could grow sharply by up to 3.8 million [5]. Thus, income inequality may be exacerbated by AI if low-wage workers are unable to upskill and find new employment. Proper policy action must therefore ensure that the transition to an AI-automated workforce does not worsen inequalities [6]. The reasoning behind this effect is that AI automation disproportionately benefits high-skill individuals over low-skill individuals by resulting in an increased demand for high-skill workers. This possible wage inequality once again reinforces the need for upskilling in the age of AI [7].

Figure 1: Employment Growth and Decline by Occupation in the US Based on % Change Labor Demand and Midpoint Automation



Note: These estimates of job changes are based on potential scenarios through 2030, considering both jobs lost to automation and new roles created by global trends. The figures are based on a moderate level of automation adoption and assume that governments and businesses actively work to create jobs over the next 15 years.
Source: McKinsey Global Institute analysis [1]

Section 2: The Future of Work

While significant job displacement is projected, the rate of displacement depends on the rate of AI adoption. Current forecasts indicate that quicker adoption may lead to more displacement while slower adoption may lead to less displacement. Depending on the rate of AI adoption, 16-54 million workers in the US may need to switch occupational categories by 2030 [1]. Even though there will likely be heavy job displacement due to automation, AI will also generate new job opportunities and complement rather than replace many jobs. AI is projected to displace 92 million jobs worldwide, but also create 170 million new jobs by 2030. Similar to previous historical trends, the adoption of new technologies always generates new pathways of opportunities despite eliminating some occupations. This trend, for example, was seen with the introduction of the Internet to the workforce as well [8].

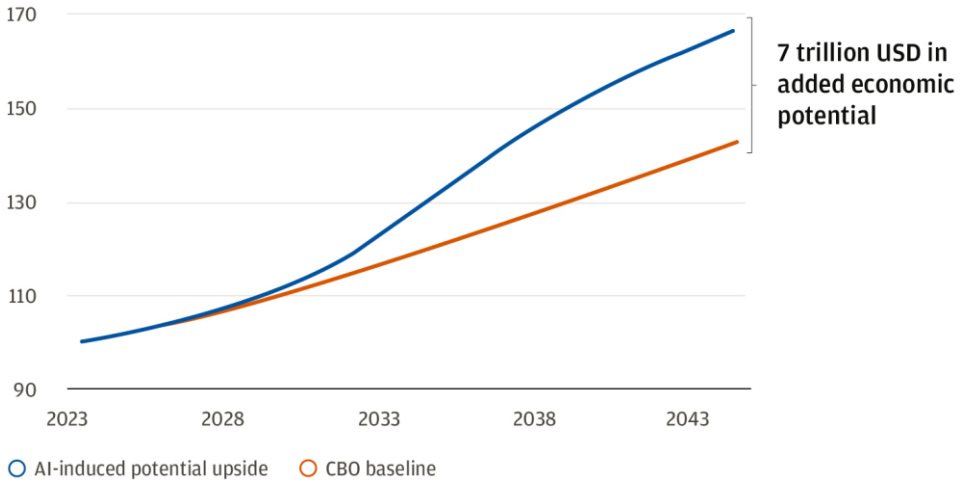
The biggest area for future job gains is projected to be in healthcare, particularly an increase in demand for 3.5 million more jobs for health aides, health technicians, and wellness workers. In addition, healthcare professionals such as doctors, registered nurses, nurse practitioners, and nurse anesthetists, will likely see an increase in demand by 2 million jobs. Another area that will likely see an increase in demand is the STEM (Science, Technology, Engineering, and Math) sector. Though there may be many layoffs occurring in recent years, by 2030 tech talent will be very in demand by companies due to the digitization of the economy [5].

Rather than replacing humans completely, a scenario that has become widely feared, AI instead will likely complement humans in their work. In fact, generative AI can help people be more creative in the workplace and help workers save time on menial and repetitive tasks [9]. This can potentially push people to focus more on problem-solving and collaboration in the workforce rather than administrative tasks, making many jobs more interesting and enjoyable [5]. This automation can especially enhance jobs in the healthcare, electricity, finance, and information sectors. For example, in healthcare, AI can reduce administrative tasks such as scheduling appointments or transcribing notes. In electricity, predictive analytics and satellite imaging can be used to optimize power grid management, and thus prevent outages. Banking and investment jobs can be assisted by AI-powered risk management and algorithmic trading. Additionally, in information technology, AI can assist with customer service or software development [10].

Looking at the economy as a whole, AI has the potential to significantly boost economic productivity because of its automation capabilities. As AI gets more integrated into the economy, it could drive a 7% increase in productivity globally, which translates to an increase in $7 trillion in GDP over a 10 year period [2]. In the US specifically, generative AI has the ability to increase labor productivity by 0.5 to 0.9 percentage points annually through 2030 by easing labor shortages and contributing to economic growth (under a midpoint adoption scenario). By 2043, in the US alone there could be an additional $7 trillion of economic growth [11] (Figure 2). If AI is used in combination with other automation technologies, that can even further enhance economic growth, possibly up to 3-4% (once again under a midpoint adoption scenario) [5].

The key to realizing this potential in economic growth, however, lies in the action of workers, policymakers, and business owners. Policymakers and business owners will need to provide support to workers for retraining and reskilling in order to take advantage of the benefits of AI to enhance productivity. Workers will need to make active efforts to reskill and adapt to automation. As long as the transition of workers is well-managed, generative AI can significantly boost economic growth in the US and globally [5]. The next section elaborates on several of these important policy considerations.

Figure 2: US labor Productivity over 20 Years, Indexed at 100 for 2023



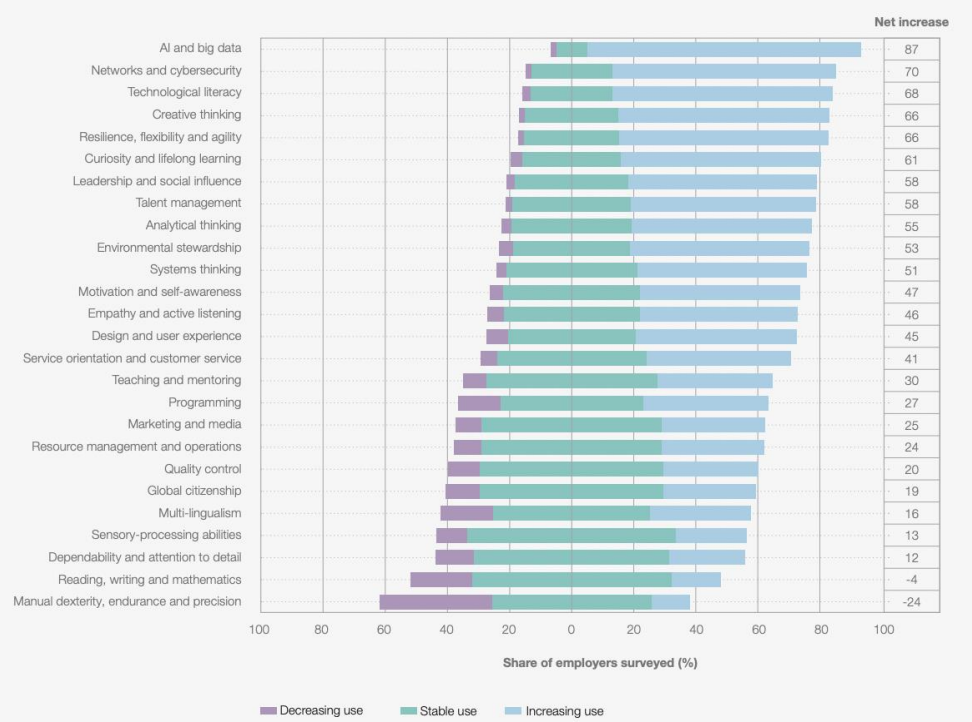
Note: Data as of January 31, 2024
Source: IMF, J.P. Morgan Private Bank [11]

Section 3: Upskilling and Workforce Adaptation

Due to the nature of implementing AI to automate certain roles and increase demand for some jobs while simultaneously decreasing demand for others, it will be necessary for employees to upskill or reskill to avoid risk of unemployment. Employers expect that 39% of key skills required in the job market will change by 2030 [12]. Many people are beginning to feel these changes now: nearly two-thirds of professionals report feeling overwhelmed by how quickly their jobs are changing [13]. In addition, to fully realize the productivity benefits of an AI-driven world, workers must be capable of either moving into the new jobs created by AI or completing different tasks with the freed up time from automation [5].

The skills that are going to be most important in the coming years are digital literacy skills, technology skills, and soft skills. While Gen AI can write, edit, and analyze data, there are numerous other skills that it does not have. Digital literacy, and particularly AI literacy, will be more important than ever to ensure that workers are able to utilize technologies effectively in their work, especially as more and more businesses adopt AI [13] (Figure 3). Additionally, with jobs in tech being projected to rapidly grow from AI, network, big data, cybersecurity, and technological literacy skills will all be in-demand. Soft skills such as leadership, creative thinking, resilience, flexibility, and teamwork will be important for employers looking to hire [12, 13].

Figure 3: Skills on the Rise for 2025-2030



Source: World Economic Forum, Future of Jobs Survey 2024 [17]

Policymakers and businesses in turn, must prioritize reskilling and upskilling programs and initiatives to ensure they are not only able to minimize job loss but also take advantage of the possible productivity gains in the economy [14]. Individuals will need to learn new skills, in particular AI literacy skills, to ensure that their talent set remains in demand by businesses [13].

Businesses can provide retraining programs to maximize efficiency, fill gaps in talent, and prevent severe job displacement. To ensure successful retraining, there also must be broader partnerships with industry groups, educational providers, and nonprofits [5]. Company and nonprofit collaborations help expand access to talent and employment opportunities. For example, US organizations such as OneTen, which helps Black workers, and Year Up, which helps disadvantaged youths, have helped tens of thousands of young people find corporate jobs by providing them with a valuable network and support in reskilling. In recent years, many companies have already taken steps towards reskilling their employees. For example, Infosys, an Indian multinational technology company, has retrained over 2,000 cybersecurity experts across different skill levels and fields. Amazon is another company that has spearheaded reskilling initiatives. Through its Machine Learning University, Amazon has turned thousands of employees who initially had little experience in machine learning into experts in the field [14]). Amazon has even further committed itself to retraining its employees through its Upskilling 2025 initiative, where the company has pledged to to spend $1.2 billion to provide free skills training to about 300,000 employees. This initiative includes an apprenticeship program for running and fixing robots at company warehouses, with the purpose of future career advancement for participants. Initiatives such as those taken by Infosys and Amazon will help create a resilient workforce that can adapt to the challenges and changes which automation brings, and other companies should model after these initiatives to maximize chances of success in the changing business world [15, 16].

Along with businesses themselves, governments can also take key roles to prevent severe negative impacts of job displacement. First, governments can invest in retraining and talent programmes to help workers reach their potential [13]. This can help spread the costs that would be faced by individual companies, making them less hesitant to commit to expensive retraining initiatives [5]. Second, governments can also provide transition support to workers via income support and unemployment safety nets. Public assistance in finding jobs will also be beneficial to preventing mass unemployment due to automation. Another possible concern with the workforce transition is the depression of wages, a trend that has been historically observed. To combat this trend and best protect people's wellbeing, policymakers can create more comprehensive minimum-wage policies [1].

One particularly concerning aspect of the AI transition is the possibility of exacerbating inequalities and hindering mobility of marginalized communities. For example, during the COVID-19 pandemic, women left the workforce in larger numbers than men and took longer to fully recover from the effects of the pandemic. In the case of reskilling, many low-income women may be restricted from going back to school or making career transitions due to familial obligations. Childcare costs remain a primary barrier for upskilling, and to address it, both private companies and governments can take a crucial role. Private-sector employers can aid women by providing childcare benefits, while governments can provide tax credits, subsidies, or direct funding [5].

Conclusion

The rise of AI is bringing significant changes to the American workforce, presenting both challenges and opportunities for workers. As AI, particularly generative AI, is increasing in use in businesses, an increasing range of tasks are being automated. This automation, consequently, is leading to significant job displacement depending on how quickly AI is adopted in businesses. Specifically, jobs that are low-skill and involve routine, repetitive work are at the highest risk of AI displacement: a harmful trend that will lead to widening wealth inequalities as the lower quintiles struggle to remain employed. Greater opportunity, however, is also on the horizon. Greater economic gains and job creation have the potential to come with the dawn of AI as well, particularly in sectors such as healthcare and STEM. The ultimate impact of AI will depend on the responses of businesses, workers, and policymakers. Workers must prioritize upskilling and reskilling to best take advantage of new jobs created by AI, and ensure that they do not get left behind in the transition. At the same time, businesses must focus on helping workers adapt to these changes by investing in retraining programs, ensuring that economic gains from AI can be maximized. Policymakers can also contribute to retraining programs as well as strengthen social safety nets to minimize negative effects of AI. These actions ensure that marginalized groups, such as women or low-income individuals, are not unfairly disadvantaged in this AI transition. Ultimately, the future of work in the age of AI will be shaped by the collective actions of society, and with the proper adaptation, the US can not only successfully overcome the challenges of AI, but also emerge economically more resilient and strong.

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