

## THE FUTURE OF WORK: NAVIGATING THE IMPACT OF AI AND AUTOMATION ON EMPLOYMENT

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**Abstract.** This article analyzes the progression of industries with respect to technology and how it has both displaced and created new job opportunities. Moreover, it explains how AI and automation would go on to shape the future of humanity. As history has shown us, with every technological revolution, there arise new opportunities. However, unemployment arises as an outcome of non-competitive, low-skilled labor segments being automated. With the aid of current procedures combined with historical practices, it aids in the understanding of technology-induced wage imbalances and inequality. There are geospatial gaps, as well. Advanced economies come across retraining gaps, whereas underdeveloped economies face slow tech adoption issues. This article is a reminder regarding the educational policies that need to be tackled alongside skill development while suggesting radical changes to the construction of educational frameworks and stratified training methodologies. It will foster skill development concerning the enhancing job market. Incorporating these measures will help lessen the impact of the technology gap and promote smooth skill development for all thus ensuring prosperity for all in the ever-agile work environment.

**Keywords:** artificial intelligence, automation, labor market, job displacement, skills gap, economic inequality, policy solutions.

## БУДУЩЕЕ РАБОТЫ: ИЗУЧЕНИЕ ВЛИЯНИЯ ИИ И АВТОМАТИЗАЦИИ НА ЗАНЯТОСТЬ

**Аннотация.** В этой статье анализируется развитие отраслей в отношении технологий и то, как они вытесняют и создают новые рабочие места. Более того, в ней объясняется, как ИИ и автоматизация будут формировать будущее человечества. Как показала нам история, с каждой технологической революцией возникают новые возможности. Однако безработица возникает в результате автоматизации неконкурентоспособных, низкоквалифицированных сегментов труда. С помощью текущих процедур в сочетании с исторической практикой это помогает понять дисбаланс и неравенство в заработной плате, вызванные технологиями.

*Существуют также геопространственные разрывы. Развитые экономики сталкиваются с пробелами в переподготовке, тогда как слаборазвитые экономики сталкиваются с проблемами медленного внедрения технологий. Эта статья является напоминанием об образовательной политике, которую необходимо решать наряду с развитием навыков, предлагая при этом радикальные изменения в построении образовательных структур и методологий стратифицированного обучения. Это будет способствовать развитию навыков, касающихся расширения рынка труда. Внедрение этих мер поможет уменьшить влияние технологического разрыва и будет способствовать плавному развитию навыков для всех работников, обеспечивая процветание для всех в постоянно гибкой рабочей среде.*

**Ключевые слова:** *искусственный интеллект, автоматизация, рынок труда, перемещение рабочих мест, разрыв в навыках, экономическое неравенство, политические решения.*

### **Introduction**

The world of work and its demands are now evolving more quickly than ever due to the development of new artificial intelligence (AI) and automation technologies. Machines performing cognitive and manual work which historically has been the domain of humans have, for a long time, been considered pure speculative fiction. Its reality, however, exists and growing economic might. It changes and creates new business opportunities and new tasks for the workforce, from robotic arms on assembly lines to algorithms that code, determine creditworthiness and much more.

AI is the technological emulation of human intelligence through the use of algorithms powered by data that change according to real-world outcomes. Automation covers both tangible systems like robotics and intangible processes like AI-powered analytics and chatbots. Together, these tools make it possible to limit human input in mundane, repetitive tasks and some moderately complex tasks.

The World Economic Forum's Future of Jobs Report states that by 2025, automation and artificial intelligence will eradicate approximately 92 million employment positions worldwide.

However, a net gain of 170 million jobs is estimated to be created as well [2]. This paradox means that some roles are being eliminated while new jobs are simultaneously being created as a direct result of the technology causing the disruption.

As noted in Brynjolfsson and McAfee's book, *The Second Machine Age*, these shifts reflect previous technological transformations, but the rapid intensity and breadth of change we are witnessing is unparalleled in history [1].

The social dimension and policies as well as economics form another critical area to analyze the scope and factors of the labor reshuffle. With the continuous advancement of research in economics, along with real-life events, this piece tries to shed light on the impact automation and artificial intelligence have on the contemporary global workforce. Data-driven answers will be provided on what regions are most susceptible to risk, the modifying geography of job creation, the evolving nature of education policy, and how all of this is changing at dynamic rates.

The concern that arises out of machines advancing at a rate faster than humans being able to adapt is: How can equity, in relation to the current technological landscape, be achieved in a broader societal context?

### **Historical Context**

From the beginning of time, innovation has always had an impact on the economy and productivity, resulting in both positive and negative outcomes in regard to work. A great example would be the Industrial Revolution, which featured mechanization on a wide scale and suppressed agricultural work, leading to an abundance of factory-based employment. Agrarian employment had to adapt to the adopted practices of mechanization. Then, towards the end of the 20th century, computers made an appearance, automating an incredible number of menial tasks, services, and even manufacturing processes, which further advanced productivity.

The consequences of these past shifts have been profoundly impactful when considering how AI and automation are modifying work nowadays. These technologies have changed the frameworks of today's societies. The first wave of industrialization introduced steam as well as mechanized tools. The employment of these tools was shown to increase efficiency. However this progress spat in the face of traditional anthropocentric labor structures because a lot of manual work was displaced by machines, meaning, like in modern times, unskilled workers were suffering from everything being taken from them. There was a glimmer of hope though. These new, resistance industries, led to incredibly new jobs which changed the entire world [3].

In the early 20th century, changes in technological innovations deeply influenced work relations. The use of electric power as well as the introduction of mass production created a need for managers, machine operators, and maintenance workers.

All of this created further economic expansion and increased productivity. However, the need for reinvented labor was initiated. While they enabled repetitive tasks to be automated, which made life easier, there was a constant struggle between the elimination of low-skilled job positions and job opportunities available. The central conflict in work history is the permanent juxtaposition of technological advancement of work processes and employment opportunities, which can also be observed in the debate on the effects of AI today.

Focusing on the most recent advances in technology, at the end of the 20th century and the beginning of the next, the introduction of digital technologies and the internet further increased the possibilities of automation in the workplace. Computers and software technology were able to execute numerous functions in finance, logistics, and even customer support, which lowered the need for certain office staff. At the same time, whole new branches of the economy were created such as IT services, e-commerce, and data analysis. This “creative destruction” phenomenon was certainly characteristic in the tech-induced economies of the last century, where old branches of industry were replaced by new, progressive, and innovation-driven sectors [4]. This latest surge of AI and automation builds off these earlier revolutions with greater sophistication and potential disruption. This time, AI is different—it can learn and adapt, making it particularly suited to activities that require human-level reasoning and thinking skills. As has been the case historically in the technological evolution of progress leading to new displacement and creation of employment opportunities, now there is an amplification in such phenomena due to AI’s unparalleled ability to perform intricate tasks in mid-level and advanced positions within healthcare, finance, and transport.

Economic experts like Acemoglu and Restrepo argue that while automation has traditionally led to the loss of certain job functions, it has done so in order to create new work and industries. At the same time, they believe the current wave of AI-led automation could pose unique hardships, especially for low- to mid-tier skilled positions. For one, advanced AI technology increases the demand for human workers who can successfully pair their skills with properly programmed systems, demand for labor subsequently shifts to more specialized and skilled technical work [4].

To sum up, the past has shown us how technological revolutions disrupt the labor markets. However, it has shown us how these revolutions contribute to new industries and productivity growth.

Understanding these patterns exposes the transformation AI and automation have caused in the labor markets to shift, drawing both risks of innovation alongside new jobs, and job displacement.

### **Current Trends in AI and Automation**

The implementation of artificial intelligence (AI) and automation-driven technologies is transforming the contemporary industry landscape across the globe. Productivity, as well as new efficiencies and capabilities that were once thought of as impossible, are being achieved. Tasks such as natural language comprehension, image categorization, and decision-making that require the cognitive capabilities of a human are now being executed by AI systems. On the other end, automation continues to shine perpetually in repetitive, rule-bound tasks, enabling employees to concentrate on the strategic or creative aspects of their work.

A considerable surge in the adoption of automation and AI technologies has been noted in businesses like manufacturing, health care, retail, and logistics in the past few years.

Autonomous delivery vehicles, for example, are already being used to cover last-mile logistics and eliminate the requirement of human drivers in some situations [5]. In retail, queries, and transactions can now be handled by powered customer service bots, enabling companies to service patrons at all times without human employees needing to be present. Medical diagnostics are also greatly aided by AI in the healthcare industry, greatly speeding up the disease detection process, and increasing accuracy for radiology scans and even genetics examinations [6].

The use of these technologies is enabled by the current developments in machine learning, data analytics, and the availability of powerful computing resources. These days, AI systems can analyze massive datasets in real-time, which means that most businesses can now make faster and more informed decisions. As an example, in the manufacturing industry, AI-based robots can now complete intricate assembly processes usually performed by human workers with even greater accuracy, which leads to a dramatic increase in productivity and a reduction in mistakes. This form of automation is also emerging in other industries such as agriculture, where AI is used in precision farming to improve yields while minimizing the use of resources [5].

As AI and automation technologies improve, they are beginning to expand further into areas previously thought to be too intricate for machines to handle. AI is being deployed in the creative parts of technical fields, such as music composing, art creation, and even journalism, where algorithms are capable of writing articles or creating media content using data based on

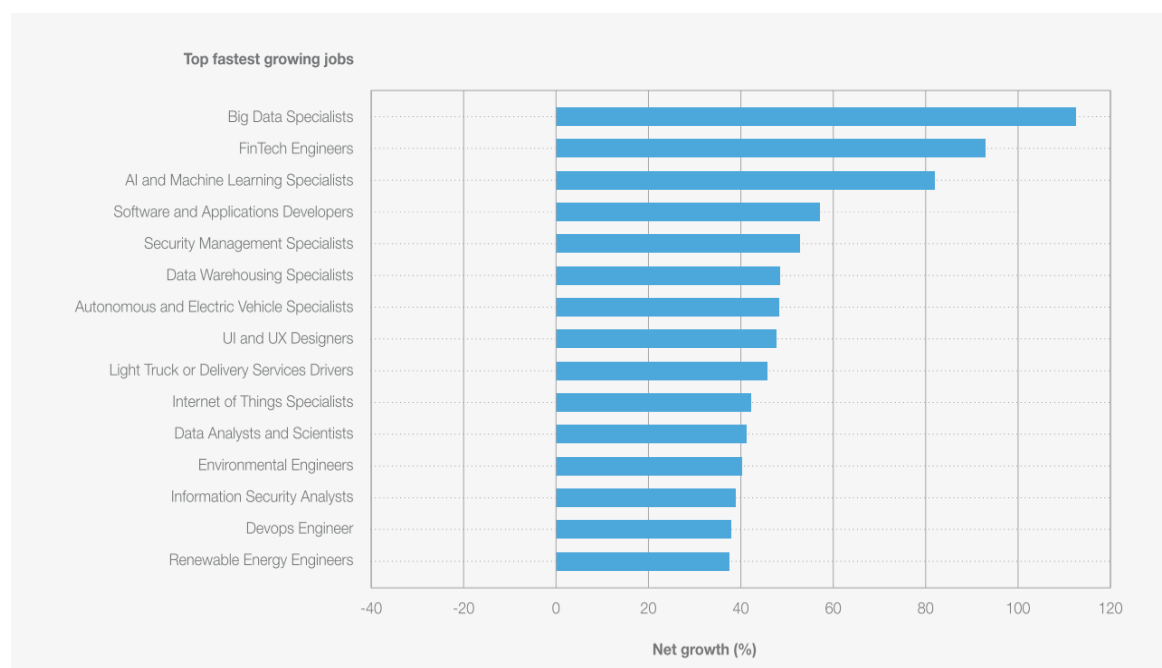
algorithms [6]. This has resulted in the development of “cobots” which are collaborative robots that assist humans in performing tasks in order to become more productive. A lot of industries are beginning to realize the possibility that humans and machines can now work together more effectively than previously thought.

As AI technology progresses, the fears associated with it replacing jobs are growing. For instance, McKinsey in 2017 pointed out that automation greatly improves productivity.

However, it can also lead to changes in employment opportunities that will heavily affect low-skilled positions [5]. AI and automation will most likely threaten employment opportunities in sectors that require monotonous and physical work, which places workers from these industries at greater risk of losing their jobs. Contrary to the worrying outcomes, McKinsey continues to state that in general, the impact on employment depends on how businesses and governments act. These steps include re-skilling employees and creating more positions, which will help minimize the negative impacts [5]. In addition to those, new opportunities will arise.

Positions that are expected to be in high demand include specialists in artificial intelligence and machine learning, security analysts, software developers, and data analysts.

Many of the opportunities are a result of the rapid developments in artificial intelligence and digital transformation. The following graph illustrates the top fastest-growing jobs [7]:



### **Geographic Impacts**

The effect of AI and automation technologies is not consistent with the difference in development in individual countries. In economically advanced countries, with their sophisticated infrastructure and skilled personnel, the application of AI and automation technology integrated into industries is often more advanced. However, in developing countries, due to their low infrastructure, resources, and education systems, the pace of adoption for such technologies may be slower and result in different challenges and opportunities.

In developed nations, especially members of the Organisation for Economic Co-operation and Development (OECD), automation is enhancing industries that have historically depended on low-skill labor. For example, in the United States and Western Europe, automation is well adopted in the manufacturing, retail, and service industries, where activities like data entry, customer interaction, and simple assembling are increasingly performed by machines [8].

Despite the substantial gains in productivity, these nations also face increased unemployment in vulnerable low-skill jobs. The OECD further explains that the USA, Germany, and Japan are facing a labor market contraction in middle-skill jobs due to task automation.

These countries have struggled to retrain their workers, trying to cope with the gap in skills caused by the automation shift.

In the previous paragraph, we looked into how developed countries are responding to rapid technological advancement or increased globalization. In contrast, developing countries face a different kind of challenge. For instance, an increase in automation may spell doom for jobs in low-wage, labor-intensive sectors. However, it may also provide an opportunity for countries with lower labor costs to forego older, inefficient technologies. Take northern Africa and parts of Southeast Asia for STU, where automation could enhance productivity within agriculture and manufacturing, helping to improve living standards and reduce poverty. Of course, these possibilities depend on the ability of governments to invest in education and supportive infrastructure for changing technologies [9].

The geographic gaps caused by AI and automation differentiate even more when analyzing the areas with distinct economic development levels. As Automation enhances productivity, developing economies may benefit financially. These countries, however, stand to lose the most in internal labor displaced within manual agricultural work and the textile industry (World Bank, 2019). The International Labor Organization (ILO) has remarked that in gig and remote work formats, digital labor platforms are providing job opportunities in emerging

economies, making these jobs accessible because of their convenience. Less developed economies also suffer from low pay and job instability provided through these platforms [10].

The influence of AI and automation on employment opportunities parallels the economic disparities across regions. Expansion of automation technologies in affluent countries might result in increased productivity, but these benefits are rarely shared across all socioeconomic classes. On the other hand, developing countries stand to reduce the gap in labor productivity with the adoption of AI and automation, but only with significant investment in education, infrastructure, and supportive policies.

Without social safety nets, the automation threat is aggravated in developing countries. In wealthier countries, protective measures like unemployment compensation and retraining programs offset the impact on affected employees. On the other hand, many workers in developing countries lack these protections, which increases the risk of an economic no man's land due to automation. These unsupported individuals, as noted by the OECD, would aggravate automation-induced poverty and inequality due to the absence of gap-supporting mechanisms for social aid.

### **Skills Gap and Education**

The most difficult problem to resolve with the evolution of AI technology and automation is the growing imbalance between available job positions and displaced workers trying to fill them. There will still be many new jobs that need to be filled but more advanced automation and AI systems will need more skilled workers. This is a critical weakness in reaping the benefits of AI and automation.

Healthcare, manufacturing, and IT sectors face the most acute skills gap as a result of these new technologies. For example, in the manufacturing sector, with the assistance of machines and robots, repetitive tasks are becoming increasingly automated, while the demand for workers capable of designing, operating, and maintaining systems is rising. Also, AI diagnostic tools and robotic surgeries require practitioners who specialize in training AI units, machine learning, and data science [11]. To maneuver technologically advanced work processes, employees in these domains need comprehensive domain and upper-level technical qualifications.

The skills gap is a critical concern to help displaced workers adjust to new roles. It can be addressed with an integrated strategy for education and training, which in turn can be broken down into specific approaches.

First, any new initiatives targeted toward reskilling aid workers in transitioning toward new job openings. In the World Economic Forum's report, it was noted that programs emphasizing both hard and soft skills, including problem-solving, digital literacy, and communication, are optimally beneficial in enabling workers to perform future roles [12]. For instance, individuals losing low-skilled positions in the manufacturing sector can be retrained to enter more technically skilled fields such as data analysis, software development, or even digital marketing.

The shift in technology has made lifelong learning crucial in this era. As AI and automation develop, employees need to improve their skills on a regular basis to maintain their standing in the job market. The OECD's Skills for Jobs database highlights the importance of fostering a culture of lifelong learning where workers can access training throughout their careers [11]. This approach enables employees to be flexible and robust in dealing with job displacement while still meeting the demands of an evolving economy.

A still underappreciated aspect of educational institutions is that they are meant to 'raise' a new brand of employees capable of dealing with the challenges posed by AI. It is important that students acquire digital literacy, as well as technological competencies, at the primary, secondary, and tertiary levels of education. UNESCO advocates for the education of learners for digital transformation, meaning the ability to work with AI and such technologies should be a part of the education framework [13]. Educational institutions can tackle the skills shortage by reinforcing STEM education and teaching AI-related subjects at earlier stages, thus ensuring ample provisioning for the labor market.

Lastly, one cannot simply ignore the impact of businesses on the solutions of the skills gap challenge. Businesses are taking on more and more responsibility to ensure that their employees undergo continuous professional development. Companies can enable ai-ready workers through cooperation with educational institutions and the provision of in-company training courses tailored to the participant's needs. The success of initiatives like SkillsFuture in Singapore shows how employers, governments, and educational institutions can be brought together to develop good strategies for skills provision. [14]

### **Economic and Social Implications**

The introduction of AI and automation bears extensive economic and social impacts that are already evident throughout the world's labor markets. Some of these effects are greater wage polarization, increasing inequality, expansion of gig work, and the effects on mental health and

job security. Automation, along with the AI revolution, is transforming industries at an unprecedented pace. However, these advancements come at a cost, as their benefits are not equally accessible to everyone, resulting in profound socio-economic difficulties.

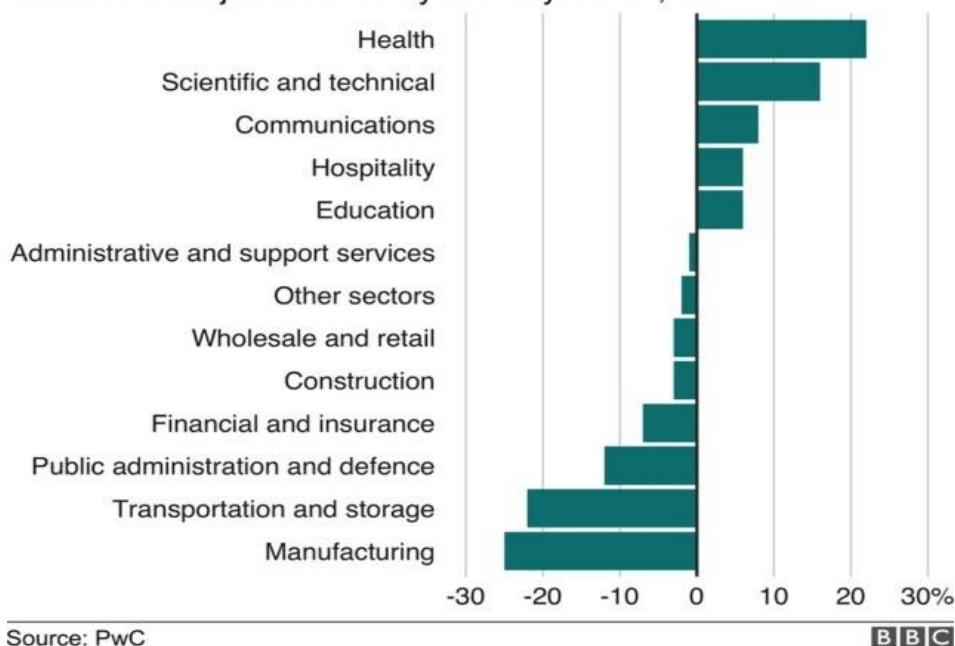
One of the most prominent economic effects of AI and automation is wage polarization. With the automation of low-skill roles, like those in manufacturing and retail, workers in these industries are either displaced or pushed down into low-wage gig economy jobs. At the same time, highly skilled professionals, especially those in data science, software engineering, and AI research, have greater demand placed on their skills and therefore receive higher wages [15].

This shift contributes to the increasing imbalance in the wage gap between high-skill and low-skill workers and adds to the rising income inequality.

With AI steadily transforming the landscape of employment opportunities, it is imperative to analyze how some industries will offset job creation against job losses. The following graph depicts projections on the shifts in employment opportunities from 2017 to 2037 for different sectors [16].

### How AI could change the job market

Estimated net job creation by industry sector, 2017-2037



Autor (2019) claims that the “hollowing out” of the middle class—a phenomenon where manual and cognitive work is increasingly automated—polarizes the economy. The middle-skill employment strata bear the largest brunt of this trend because their work can be automated and demand for their skills is not increasing.

Workers that fall into the lower and middle-skill category face wage stagnation or devaluation while those in the upper-skill category continue to have their wages increase, resulting in greater wage disparity.

Not only has wage polarization changed as a result of AI, but so has the expansion of the gig economy. Companies are now able to automate and depend on freelance, part-time, and contract workers instead of full-time employees to take care of repetitive business functions previously handled by full-time staff. Primarily, this shift can be observed in some industries including transportation (ride-hailing), logistics, and digital services. While this flexibility may be appealing to some workers, it comes with a new set of problems such as lack of job stability, minimal benefits, and erratic income streams. As noted by the International Labor Organization, the gig economy is increasingly on the rise in both developed and developing economies and tends to create weak employment standards for those who largely lack the security associated with conventional employment contracts [10].

Apart from the economic factors, AI and automation rethink the reality of social issues, including mental health concerns and job security. Workers' perceptions of the future validity of their positions are accompanied by anxiety regarding the possibility of redundancy or displacement, which is becoming more common. Sustained anxiety around the possibility of automation replacing roles, particularly in low-skill jobs, can significantly erode one's socio-psychological self-esteem and social identity. The consequences of losing a job, especially one that has served as the mainstay of a household or community, can greatly impact a person's mental health [15]. The social identity theory stigmatizing involuntary idleness or underemployment leads to withdrawal, loneliness, and depression, further complicating the plight of displaced workers. Furthermore, the increasing speed of technological advancements adds another layer of complexity in terms of how society adapts to these changes. While some groups may adapt to newer technologies almost instantly, older workers and those with less educational access tend to lag behind. This lack of access to newer technology and additional opportunities can create socio-economic divides. Those who are left behind will eventually suffer from reduced social status and an overall lower quality of life.

As policies attempt to catch up with the needs of society, policymakers have to manage these poignant issues by addressing the fragmentation of opportunities and ensuring equitable development across regions to foster social cohesion.

Some of these policies may be oriented towards securing a living wage and minimal employment protections in addition to access to social safety nets for gig economy workers.

Furthermore, such policies should address labor market dynamics by facilitating employment-based training and reskilling programs necessary to meet the evolving job market demands. The following table summarizes important metrics on the effects of AI on employment trends across different industries and the continued focus worrying many in society's sectors [17]. The following table summarizes important metrics on the effects of AI on employment trends across different industries and the continued focus worrying many in society's sectors. It illuminates the twofold effect of AI and automation regarding the loss of existing jobs as well as the creation of new opportunities. Important metrics include the AI-related job opening growth rate, the percentage of workers worrying about job loss, and the industries exposed to the greatest potential disruption. This information highlights the need for policies and reskilling efforts to tackle issues arising from technological progress shifts in the employment landscape. In addition, these trends are critical for constructing appropriate training programs to equip prospective employees with the required skills in growing fields. With strengthened partnerships among industries, governmental bodies, and educators, society will be better positioned to face the challenges of this shift.

| No. | Current Statistic                                                                                     | Impact on Employment               |
|-----|-------------------------------------------------------------------------------------------------------|------------------------------------|
| 1   | 14% of workers claim to have already lost a job to 'robots'.                                          | Ongoing Job Displacement           |
| 2   | In May 2023, 3,900 US job losses were linked directly to AI.                                          | Immediate AI Job Impact            |
| 3   | British Telecom aims to replace 10,000 staff with AI within 7 years.                                  | Corporate AI Workforce Plan        |
| 4   | Early AI and automation have already driven down wages by up to 70% since 1980.                       | Historical Wage Impact             |
| 5   | Now it's Educated, white-collar workers that will be impacted by automation.                          | Evolving White-Collar Job Impact   |
| 6   | 81% of office workers think AI improves their job performance.                                        | AI's Positive Workplace Influence  |
| 7   | 30% of workers fear their job will soon be replaced by technology.                                    | Worker Job Displacement Concerns   |
| 8   | More than half of 18 to 24-year-olds are concerned about AI taking jobs.                              | Generational Employment Worries    |
| 9   | 81.6% of digital marketers believe content writers will lose jobs because of AI.                      | Content Creation Industry Concerns |
| 10  | CEOs of AI firms like OpenAI have signed an open letter warning about the risk of extinction from AI. | AI's Broader Societal Impact       |

Summarizing the above, the most salient points are that though AI and automation have the potential to increase the productivity of a workforce economically, the accompanying challenges should AI come without risk. These include the displacement of workers. A greater focus on policies that promote support as well as social safety nets dedicated to addressing the increase in inequality and the growth of the gig economy is crucial. Mental health challenges associated with the shift also require essential attention, as does the need for policies to reconcile the gaps in support and training alignment.

### **Policy Responses**

The introduction of AI coupled with automation is a prominent issue country all across the globe are facing when it comes to labor markets, and policymaking can greatly reduce the complications brought on by such technologies while simultaneously enhancing their advantages. Policies such as Universal Basic Income (UBI), robot taxes, job guarantees, and educational reforms aimed at preparing the workforce for an automated world are being proposed or even implemented in countries all over the world. Steps are being taken by Singapore, Germany, and Nordics to tackle the socio-economic burden imposed by technological disruption.

One of the most widely discussed policy solutions is Universal Basic Income (UBI). The reasoning behind UBI is to extend a basic form of income to every citizen and provide a healthy standard of living sustained even if there is no employment in the era of automation where jobs are being removed on a large scale. Supporters of UBI say that it can act as a form of financial protection for all, enabling workers to afford to pause work while they transition or reskill to take on less automatable jobs. Although UBI has not been fully adopted on a large scale, trials conducted in Finland and other countries tend to support UBI on the grounds of employee contentment, overall well-being, and after negative health impacts of the pandemic even if the macroeconomic consequences are uncertain [14].

An additional recommended policy centers around the implementation of a robot tax, which seeks to impose a levy on companies that substitute human employees with robots or automated processes. As a result, funds that would come from this tax could be used to pay for social programs, retraining programs, and even aid for the economically displaced. Even though no country has implemented a robot tax, its concept is highly debated everywhere automation and its economic impact are discussed.

The European Commission has suggested the development of AI ethical guidelines proposing the use of taxation, among other measures, as social automation impact management tools [19]. On the other hand, it is argued that implementing a robot tax could hamper the technological advancements that most benefit society.

Having job guarantees is one solution that has been brought up to mitigate the negative impacts of automation. A job guarantee will ensure every individual who is willing and able to work has a meaningful job, even if they are automated out of a certain position. This policy could mean providing jobs directly through the government, such as in infrastructure and care work because those areas are less likely to be automated. This idea has received support from many different economists, especially those who support a “green new deal,” which seeks to address unemployment while protecting the environment. Although a job guarantee yields full employment, it would entail large expenditures and require a concrete plan to be useful [18].

Alongside these policies, other countries are working on educational reforms to align with labor market needs. An example of such an adaptive education policy is Singapore’s SkillsFuture initiative. This program promises to assist the citizen’s skill development throughout their careers by accreting training grants, offering online courses, and conducting various skill development workshops. This initiative has been successful in creating a more adaptable workforce and has become increasingly important in the context of rapid technology shifts [14]. In the same way, Nordic countries have also adopted comprehensive policies for social security and active retraining for displaced workers.

In addition to retraining programs, governments need to enhance digital competencies at all educational levels. As UNESCO (2021) shows, skills such as basic coding, data analysis, and AI application are requisite in the current epoch and need to be taught in schools. Through the provision of instructional frameworks and embedding them in the syllabus, governments can better equip the later generations to deal with skills of the future, thereby minimizing the possible widening skills gap [13].

To recapitulate, the challenges posed by AI and automation are considerable, but adopting certain policies could help alleviate some of the risks. Universal Basic Income, robot taxation, job guarantees, and reforming the educational system are some approaches that can enhance worker protection and preparedness for the changing work environment. The effectiveness of these policies will rest on the ability of the governments to cope with strong technological shifts and spend on the future of their people.

A combination of economic guarantees, proactive education, and work policies would provide a balanced strategy to ensure that AI and automation can be advantageous to all.

### **Conclusion**

There are powerful opportunities for AI and automation alike in the productivity and innovation realms. We must also remember, however, that there are significant risks. Workers may lose their jobs, and pay inequality among low-skill and high-skill workers will sharpen.

Other consequences of these technologies include greater inequality, the expansion of gig jobs, and mental health issues associated with job instability.

These problems will not fix themselves, and reactive policies addressing the worst effects of automation will bring about the hoped-for change. Mitigating policies will help, but the lack of inclusive growth balanced with proactive measures makes comprehensive change impossible.

To address the underlying issues, proactive policies anticipating future workforce needs must be adopted to place the changes in motion. Focused and pragmatic policy must stress restructuring education to incorporate digital skills, coding, and critical thinking at every multidisciplinary level of school in every region. These measures will allow students and future citizens to be prepared to adapt to a digitized and automated world.

Moreover, the global teaching policy frameworks need to be accelerated, especially for those vulnerable to disruption like low-skilled workers in retail and manufacturing. Businesses and governments must partner to establish an 'evergreen' learning system that provides continuous training and promotes professional growth during active employment. Some training programs such as those from Singapore SkillsFuture provide an actionable model on how to build a responsive workforce and should be adopted and adapted for global implementation.

Aside from some training and education policies, we need to think outside the box and consider policy innovations like Universal Basic Income (UBI). UBI is controversial but has the potential to guarantee citizens access to a basic quality of life in the future when automation will restrict employment opportunities. It would effectively enable manual workers to invest in their education and retraining military opportunities without having to worry about jobs.

In addition, the impact of advancement in AI and automation on productivity measurement calls for rethinking in the 21st century. Society must shift its focus to human attributes, such as creativity, emotional intelligence, and social roles because those areas are difficult for machines to take over. New forms of employment arising from the care economy, as well as the creative industries, should be stimulated and subsidized.

In addition to providing significant opportunities for workers, those sectors also meet fundamental societal needs, which are expected to grow in the next few decades.

To conclude, the impact of AI on the future of work is not something set in stone. We may influence the transformation through appropriate policies, investments in education, and innovative approaches. We need to remove the divides between different sectors of society and different age groups by encouraging innovation, promoting learning at any stage, and adopting unconventional measures such as universal basic income (UBI) to ensure that the advancement of technology benefits all workers.

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