JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

EXPLORING THE FUTURE OF WORK: IMPACT OF AUTOMATION AND ARTIFICIAL INTELLIGENCE ON EMPLOYMENT

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Abstract: The presence of Artificial Intelligence (AI) and the robotization of work has brought a revolution in the world of work. But on the other hand, it can also hang mortal eventuality in the job. This study was conducted to see the influence wielded by AI and robotization on mortal employment. This exploration will be conducted using a descriptive qualitative approach. The data used in this study comes from colorful exploration results and former studies that still bandy the use of AI and robotization in the world of work. The exploration has set up that AI and robotization are presently replacing numerous jobs. still, there are still some bits of intelligence possessed by humans that are delicate to imitate by AI, similar as suspicion and empathy. Indeed though the actuality of AI and robotization can be a trouble to humans in the world of work, with the increase of mortal resource chops, also humans who acclimatize won't be replaced by machines, but there will be the integration of mortal- machine work, where AI and robotization don't replace humans but come tools for mortal labor.

IndexTerms - Artificial Intelligence, Automation, Work, Humans.

I. INTRODUCTION

Industry and labor changes: Artificial intelligence (AI) and automation have grown in their sophistication in the last two decades. AI systems aim to imitate human intelligence, where machines do tasks without human intervention (Tschang & Almirall, 2021). These innovations might seem to improve efficiency but most workers are afraid that they will lose their jobs, especially those who do monotonous work. However, some economists believe that AI will create new jobs, especially for skilled workers who will manage and maintain these systems (Kim et al., 2021). Automation is making inroads in routine tasks in different sectors such as health care, hospitality, and customer service including house chores, customer inquiries through chatbots, and even investment management (Rotatori et al., 2021; Wirtz et al., 2021). There are concerns that even skilled jobs like programming and data analysis could be automated (Willcocks, 2020). This study addresses the implications of automation and AI on employment with a focus on job loss and new jobs.

2. LITERATURE SURVEY

2.1 ARTIFICIAL INTELLIGENCE (AI)

AI (artificial intelligence) denotes the development of machines or systems that can perform tasks that require human-like intelligence. According to Jogiyanto, AI is devices, typically computers, that can perform tasks that require human intelligence. Kusumadewi highlights that AI is a branch of computer science that makes it possible for machines to perform tasks like those human beings. Suparman explains AI as a field that concentrates on making software and hardware that can mimic the function of the human brain. John McCarthy described AI as the science and techniques used in making intelligent machines and applications. The main objectives of AI include building expert systems that can learn, explain, and advise the users and mimicking human intelligence in machines so that they can think and act like human beings. AI is drawn from computer science, biology, psychology, and engineering. This includes logical thinking, learning, and problem-solving in the organization of information to help the user under different circumstances. It is not always perfect. AI aims to make systems that can think, learn, and solve problems like human beings.

2.2 AUTOMATION

Automation, also robotization or industrial automation is the use of control systems such as computers to control industrial machines and processes. It represents the step after mechanization where machines do what people did before in terms of physical work, which leads to a decreased need for labor and changes in work nature (Paśko et al., 2022). Automation is an integrative process that combines mechanics, electronics, and computer systems to enhance the efficiency of processes. The term was firstly used by Ford in Detroit when he was describing the production of continuous lines (Wang et al., 2022). According to Santoso, it is the automatic control of tools and systems with minimum human participation to make decisions quicker (Santoso et al., 2020). According to Ghifari, automation means replacing manual systems with automatic ones to make the processes easier and the results better (Mehmood et al., 2020). In the end, automation is a technical improvement that makes systems work quicker, with higher precision, and produce higher-quality results (Freddy et al., 2022).

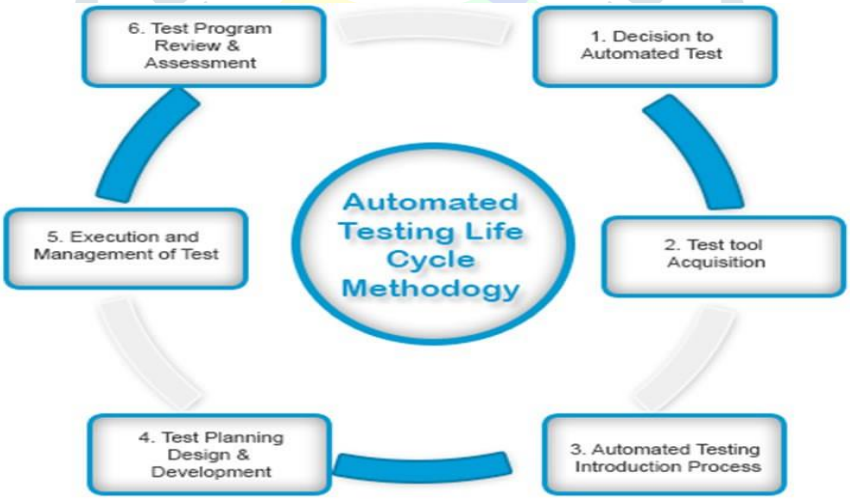
2.3 EMPLOYMENT

Classical theory puts an emphasis on the importance of human resources for the country's success. According to Adam Smith, the effective use of human resources leads to economic growth and requires capital formation (Javanmardi et al., 2023). In contrast, Thomas Malthus pointed out that the growth of the population would outstrip the growth of agriculture and proposed limiting the population (Blanco, 2020; Zhou et al., 2021).

The classical model is based on the postulate of full employment of labor. It is assumed that labor is used to the full, that unemployment does not exist because people can work for a lower wage. However, John Maynard Keynes did not agree with this opinion. He believed that there is no automatic mechanism that guarantees full employment. In his opinion, if wages fall, consumption will decrease, which will lead to a drop in prices. And with a drop in prices, the real wage of workers will increase, and unemployment will decrease. This means that wages can fall, but labor productivity can fall even more, which is why the number of unemployed people will grow (Dimand, 2020; Chen et al., 2022).

3. PROPOSED METHODOLOGY

This research will be using a qualitative approach. Descriptive methods are going to be used in the analysis of research data. Data to be used in this research will come from mixed results of the past research and from the study that are still relevant to the content of this research. After the research data has been collected, these data are going to be processed immediately so that the results of this research can be found (Sari et al., 2022).



4. RESULTS AND DISCUSSION

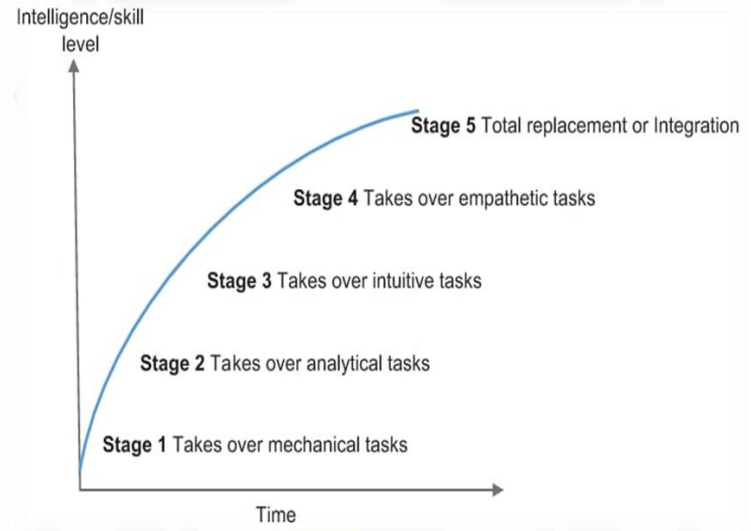
4.1 HUMAN INTELLIGENCE IN AI

Among the four categories of human intelligence - mechanical, analytical, intuitive, and empathic - all have repercussions on the workforce in an AI-dominated environment. Mechanical intelligence refers to the performance of routine tasks with little reasoning, like the call center agent, or service robot - and while maintaining consistency is beneficial, it is a hindrance in terms of adaptability. Analytical intelligence, which means problem-solving with the help of logic and math, is prevalent in data-driven jobs such as the data scientist, whose work AI tools like data analytics, and machine learning have begun to take over, even if they lack the deep understanding that a human has. Intuitive intelligence, on the other hand, is the ability to creatively respond to new situations and is used in marketing and consulting; however, while the assistance of AI is welcome, true creativity is difficult to replicate. Lastly, empathic intelligence is the ability to perceive and respond to other people's emotions and is important in careers like therapist, and negotiator - but while AI

like Sophia can simulate it, authentic emotional intelligence is something that is only found in human beings. AI's progress is likely to replace jobs that require mechanical, or analytical intelligence but will evolve in the case of intuitive, and empathic intelligence, which calls for attention to be shifted to human beings.

4.2 Stages of Job Replacement by Artificial Intelligence

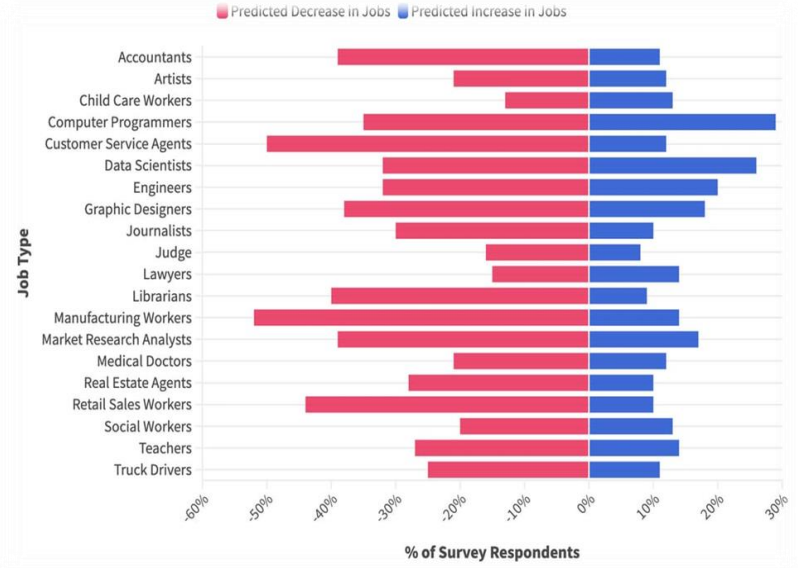
Five stages through which implementation of AI in the workforce could evolve defined by the increasing replacement of human intelligence: First stage-mechanical AI takes over standard and repetitive service jobs. It is cost-effective and constant, but it allows still-skilled workers to keep their positions, thereby promoting the requirement for workers to make their skills better to move forward. AI advancement second stage consists of the AI proliferation that substitutes both mechanical tasks and analytical tasks that are responsible for everyday operations and aiding in decision-making. The third stage involves the AI proliferation that replaces the mechanical tasks, analytical tasks, and intuitive tasks by assimilating users' interactions and the wisdom from the human intuition that is not frequently recorded in big data; it learns multiple languages and phrases to perfectly comprehend the customer needs. The fourth stage consists of the AI proliferation that has the empathic abilities where it reads human emotions to enhance the user experience. An example of such a technology is the Affectiva that allows the business to respond to the customer's emotion accurately. Finally, in the fifth stage, AI will have the AI proliferation that fully mirrors the human intelligence and will have the capability to assume all tasks that a human would not want to do, therefore increasing the quality of life.



4.3 Job Replacement AI In Employment

The level of AI technology today is job replacement at level 3, capable of substituting mechanical, analytical and intuitive tasks. For instance, mechanical tasks are automated using voice recognition and robots like Pepper, who assists in customer service in hotels and airports. AI may replace analytical jobs, but it can be averted if the workers develop intuitive skills, like the back-end developers who do more complex jobs. Empathic intelligence in AI is still nascent and requires further development to understand consumer's internal states effectively. Innovations as face-mapping that can study consumer reactions for better advertising are very useful. Also, we know about experimental technologies, that make a connection between paralyzed individuals' brains and devices. The only way to make companies effective in AI implementation is to make task-level replacements rather than job-level. The process of it depends on task nature, type of service, and strategic goals.

The changes to the workflow also require changes in the workspace. This type of transformation requires an open culture, private data and customers. An improvement in human connections and collective intelligence will be a big advantage for the organization.



4.4 Adaptation of Work Skills in the Age of Artificial Intelligence

Workers must develop skills aligned with industry needs and understand the types of intelligence required for job replacement AI. Studies recommend that service companies provide business analytics training to enhance decision-making capabilities, focusing on analytical skills optimized through AI-based machine learning, while also emphasizing creative thinking, intuition, and empathy in data interpretation.

There are two dynamic frameworks that research supports in employee development: dynamic capability, which measures how organizations and employees adapt to change, and career dynamism, which fosters adaptive qualities amid career uncertainties. Service companies should cultivate adaptive skills to effectively integrate competencies in rapidly changing environments, promoting career resilience and essential human skills such as creativity and relationship-building. this also includes partnering with universities to offer specialized training in emotional intelligence, creativity, and communication within the context of STEM education to equip graduates to cope with the pressures of automation.

5. CHALLENGES AND FUTURE WORK

Automation, AI will result in problems, such as job displacement, particularly in tasks that require a lot of repetitive work. When the demand for AI and automation skills is growing, it may make the gap even worse for workers, as it is difficult for them to adapt to such new requirements. In addition, these technologies might not benefit all sections of the economy, thus further increasing income inequality. Other ethical issues are biased decision-making algorithms and the potential for job discrimination. This will further include the lack of clear regulatory frameworks for AI and automation, thereby hindering its adoption and making workers uncertain.

Future Work:

There are a number of measures that need to be taken to address the challenges of automation and AI. The first is to invest in upskilling and reskilling programs for workers to prepare them for the AI driven economy. Second, it is essential to establish or strengthen social safety nets to support workers displaced by these technologies. In the long term, experts suggest that basic income guarantees may be needed to ensure a minimum standard of living for all. Third, researchers and developers should focus on human-centered AI design to ensure that these technologies promote human well-being and are transparent and accountable. Finally, the global nature of employment impacts due to automation and AI require international cooperation and agreement on standards, regulations, and best practices.

6. CONCLUSION

The landscape of employment characterized by predominantly human labor is undergoing significant transformation as machines and robots increasingly assume these roles—especially evident in sectors like telecommunications, banking, and healthcare. Yet, it's crucial to note that not all tasks within the service sector can be supplanted by artificial intelligence (AI) and automation. The intuitive and empathetic qualities inherent in human intelligence are yet to be fully replicated by AI technologies. This deep intuitive and empathetic intelligence is largely shaped by the remarkable capacity of humans to adapt to their surroundings. The theory surrounding AI-driven job replacement is designed to illuminate the pathways through which AI might take over tasks that demand a diverse range of cognitive capabilities. It further explores how AI should be harnessed for service-oriented activities, as well as how workers must evolve their skills to foster the collaborative synergy of human and machine efforts. The evolution of innovative human-machine service delivery is bolstered by advancements in all four components of intelligence. While the technical feasibility of automation is undoubtedly important, it is not the only factor at play when

considering the speed and extent of its implementation. Other significant influences include the financial implications of designing and deploying automation tailored to specific work environments, the dynamics of the labor market—encompassing both the quality and quantity of the workforce as well as related wages—organizational culture, and the preparedness of the workforce.

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