Impact of Automation and AI on Future

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ABSTRACT

Automation and artificial intelligence (AI) are about to change the world and have a significant impact on a number of industries. This study explores the various ways in which these technologies will impact the economy, society, and nature of employment in the future. Although automation and artificial intelligence (AI) are expected to increase productivity, spur economic growth, and generate new job categories, they also present serious obstacles like the loss of jobs, skill shortages, and moral dilemmas. This article investigates the dual-edged character of these technologies through a thorough examination of current trends, case studies, and predictive models. It looks at the possible advantages, such more productivity and creativity, as well as the societal ramifications, like changing labour markets and the requirement for strong regulatory frameworks to lessen negative consequences.

Keyword: - Automation, Artificial Intelligence, Future of Work, Job Displacement, Economic Growth

1. INTRODUCTION

Artificial intelligence (AI) and automation are developing at a rapid pace, changing many industries and affecting the future of labour, the economy, and society. These technologies present previously unheard-of chances to boost productivity, promote creativity, and accelerate economic growth as they become more advanced and pervasive. AI, which is the emulation of human intellect by machines, and automation, which is the use of computers and software to carry out jobs that were previously completed by humans, are essential components of this transition.

But there are drawbacks to incorporating AI and robotics into the workforce. These technologies come with a lot of obstacles in addition to their many promises of efficiency gains, the emergence of new markets, and the establishment of new job categories. A significant worry is job displacement, as many ordinary and low-skilled

2. LITERATURE SURVEY

[1] Abdulla Jaafar Desmal et.al Automation and artificial intelligence (AI) are drastically changing the online services market. Artificial intelligence (AI) is empowering internet providers to offer more personalised, efficient, and human-like digital experiences through the use of chatbots and hyper-personalized recommendations. This study looks at how automation and artificial intelligence are becoming more and more important in a variety of online businesses, sectors, and interactions. It examines important uses such as robotic process automation, computer vision, natural language processing, and predictive analytics, which automate everything from supply chain logistics to customer support. The advantages of these technologies—such as their scalability, cost-effectiveness, and round-the-clock availability—as well as its drawbacks, which include workforce effects, data privacy, and transparency. The report highlights how automation and artificial intelligence will influence how businesses interact with and cater to digital customers in the future.

[2] Andrzej et.al The public's interest in the effects of emerging information and communication technologies on various aspects of people's personal, professional, and social lives is expanding. In particular, many scholars have recently focused on the topic of whether the deployment of intelligent systems would present an opportunity or a threat to humanity. The evaluation of the impact of sophisticated ICT tools on the methods and advancement of scientific research in diverse fields is the focus of this work. A selection of intelligent technologies, including bi-directional Brain-Computer Interfaces (BCI), Global Expert Systems (GES), and Creativity Support Systems (CSS), will be shown and their development prospects discussed. A recent ICT foresight project produced a series of papers that included projections for their development until 2025.

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[3] Norris Smith et.al Artificial Intelligence (AI) is advancing at an astounding, exciting, and unavoidable rate. As we've already covered, there's ample evidence that greater automation frequently creates new jobs or modifies existing ones without eliminating them. We look at how AI is affecting employment, economics, social interactions, and medical technologies with a focus on a human-centred cyber environment in order to explain this stance. We review the use of deep learning, a highly acclaimed artificial intelligence approach, in the field of medicine by examining some of its fascinating achievements in diagnosis, surgery, breast cancer screening, and autopsy. We also clarified how AI can support doctors in enhancing their surgical abilities and help people locate appropriate medical providers. Additionally, we contend that in spite of the continuous

[4] Shaikh Bilal Naseem et.al In the modern world, the effects of artificial intelligence advancements on employment have grown significantly in recent years. Rapid advancements in robotics, machine learning, and other AI-related technologies are routinely brought up at conferences as potential causes of the nation's extreme unemployment. This study compares several research articles on the effects of artificial intelligence on human jobs that have been published by diverse writers. The possibility that automation and computerization will supplant existing jobs is examined by a number of writers. My research report is based on a careful analysis of research papers written by various writers as well as an online poll that I completed using Google Forms. We looked at the effects of trends in employment availability and human survival both now and in the future because

[5] Deexith Reddy Artificial intelligence (AI) technologies are becoming more and more common in a variety of industries, including e-commerce, finance, and healthcare. The automation of these systems is the next development in the practical use of AI. The promise of AI automation rests heavily on the ability to handle data ingestion efficiently, ensure real-time processing, and react quickly to changes in data, since these systems rely heavily on the quality, volume, and careful management of data for training, optimisation, and validation of data science models. To assist practitioners in implementing automated AI, a multifaceted approach to data engineering is required. Strong data engineering techniques are required to guarantee the automation and scalability, efficiency, and dependability of AI applications.

[6] Manuel Au-Yong-Oliveira et.al Artificial Intelligence is one of the numerous ways that the digital revolution has profoundly impacted society (AI). The benefits and drawbacks of artificial intelligence (AI) are examined, along with what can and ought to be done to positively impact it. Ten interviews and one hundred respondents' survey responses served as the study's foundation. The survey's findings indicate that people are generally concerned about how artificial intelligence (AI) will affect work in the future and how this would lead to a general loss of control. Moreover, the belief that "Humans will learn to use the power of computers to improve their own skills and be ahead of AI" is supported by more than 50% of the responses. Regarding the interviews, they were fascinating.

[7] Nishant Bhuvanesh Trivedi Artificial Intelligence (AI) has the potential to significantly change education by providing individualised learning opportunities and enhancing student performance. Applications of artificial intelligence (AI) include data-driven insights, adaptive learning, intelligent tutoring, administrative automation, content creation, language support, accessibility, and predictive analytics. However, while implementing AI responsibly, ethical issues like algorithmic fairness and data privacy must be properly considered. AI has the potential to create a more dynamic and fair educational environment as it develops.

[8] Asma Alshaikhi et.al The study's goal is to find out how artificial intelligence will affect project management in the future. This study offers several viewpoints and comprehensive conceptual information regarding artificial intelligence. The term artificial intelligence refers to a new field of study that aims to create a technology approach and application system that mimics the growth and development of human intelligence. This study examines the impact of artificial intelligence on project management. The benefits of adopting and using AI have been covered in this paper in numerous ways. The findings demonstrate that AI and technology cannot take the role of the human mind. Although machines and other AI robots can automate tools and jobs, they ultimately require human assistance for monitoring and operation.

[9] **Jitesh Tulsiani** Rapid advancements in artificial intelligence (AI) technology are driving a significant transformation in the automotive industry. This report offers a comprehensive analysis of artificial intelligence's numerous applications, challenges, and possible future advancements in the automobile sector. Artificial intelligence (AI) is being incorporated into automobiles to improve their intelligence, safety, and efficiency. This is having a revolutionary effect on mobility and transportation. The research begins with a review of the various uses of artificial intelligence (AI) in the automobile sector. The report examines the steps taken by business and government agencies to address these issues and ensure that artificial intelligence is used responsibly in cars. The essay also looks into possible uses of AI in the auto sector in the future. This research examines recent advancements such

[10] **Jash Minesh Shah** Artificial Intelligence (AI) will have a big impact on the automotive sector, and associated technologies will be developed in tandem. Artificial intelligence (AI), which is a technical innovation that will impact the way people think about driving and represent the future of transportation, is used in autonomous driving. There will be an emergence of new mobility-related firms, and those that are currently in place will need to make the appropriate adjustments. The field of vehicle security uses certain AI and security algorithms. The purpose of this study is to provide some insight and knowledge on the significance of artificial intelligence (AI) and its effects on the automotive sector. One thing to consider or ask while talking about autonomous vehicles is whether or not autonomous manufacture is feasible. A little light has been shed on the advantages.

3. PROPOSED METHOD

3.1 Literature Review:
- Conduct a comprehensive review of existing literature on automation and AI.
- Summarize key findings from previous studies.
- Identify gaps in the current knowledge that your research aims to fill.

3.2 Data Collection:
- **Survey Design**: Develop structured surveys to gather quantitative data on the adoption and impact of automation and AI.
- **Interview Protocol:** Create a semi-structured interview guide to explore detailed perspectives and insights.
- **Case Study Selection**: Identify and select relevant case studies that illustrate the impact of automation and AI in various contexts.

3.3 Research Design:
- **Research Approach**: Adopt a mixed-methods approach combining qualitative and quantitative research.
- Data Collection Methods:
- **Surveys and Questionnaires:** Distribute to a diverse sample of industries affected by automation and AI.
- Interviews: Conduct in-depth interviews with experts, industry leaders, and policymakers.
- **Case Studies:** Analyse specific examples of industries or companies that have implemented automation and AI.

3.4 Data Analysis:
- **Quantitative Analysis:**
- Use statistical tools to analyse survey data.
- Identify trends, correlations, and significant patterns in the data.
- **Qualitative Analysis:**
- Employ thematic analysis for interview transcripts and case study materials.
- Identify recurring themes, insights, and narratives.

3.5 Ethical Considerations:
- Ensure informed consent from all survey and interview participants.
- Maintain confidentiality and anonymity of respondents.
- Address potential biases and ensure objectivity in data interpretation.

3.6 Discussion:

- Interpret the findings in relation to the research questions and objectives.
- Compare results with existing literature to highlight similarities and differences.
- Discuss the implications of the findings for various stakeholders (e.g., businesses, employees, policymakers).

3.7 Conclusion:
- Summarize key findings and their significance.
- Highlight the contributions of the research to the field.
- Suggest practical recommendations for managing the transition to an automated and AI-driven future.

3.8 Future Research:
- Identify limitations of the current study.
- Propose areas for further research to build on the findings.

3.9 References:
- Compile a comprehensive list of all sources cited in the research.

4. IMPLEMENTATION STEPS

4.1 Planning:
- Define clear timelines, allocate resources, and assign responsibilities for each research activity.

4.2 Pilot Testing:
- Conduct a pilot survey and a few initial interviews to refine data collection instruments.

4.3 Data Collection:
- Roll out the full-scale surveys, interviews, and case studies as per the research design.

4.4 Data Analysis:
- Perform data analysis using appropriate software tools (e.g., SPSS for quantitative data, NVivo for qualitative data).

4.5 Reporting:
- Write up the research findings, ensuring clarity and coherence in presenting the results and their implications.

5. CONCLUSION

Artificial Intelligence and automation will have a significant and diverse impact on the future. Positively, these technologies have the power to completely transform industries by increasing efficiency, cutting expenses, and opening up new avenues for the development of goods and services. They have the potential to significantly improve the quality of life and spur economic growth in a number of areas, including healthcare, education, transportation, and many more.

There will be difficulties in the shift to an automated and AI-driven future, though. Given that many jobs that are currently done by people can be automated, job displacement is a serious worry. If this transformation is not handled correctly, it could cause serious social and economic upheavals.

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