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Impact of AI on Job Market

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ABSTRACT: The purpose of this study is to assess the varied effects of machine learning (ML) and artificial intelligence (AI) on employment prospects and the labour market. It investigates how job replacement may be impacted by the growing use of AI and ML. The study looks at how AI is both generating new employment prospects and dislodging existing ones, especially in sectors that primarily rely on repetitive and routine work. The study also explores ways that organizations and governments can mitigate the negative impacts of job displacement and promote the creation of new employment opportunities in the AI and ML sectors. The overall conclusion is that, despite some potential negative consequences on the labour market, the opportunity for new job prospects in AI and ML outweighs any potential drawbacks.

KEYWORDS: Artificial Intelligence, Machine Learning, Job Markets, Job Displacement, Employment Opportunities, Automation, Economic Impact, Future Markets

I. INTRODUCTION

The worldwide job market is entering a transformational phase due to the rapid development of Artificial Intelligence (AI) technology. AI technologies are changing the workforce in every aspect, and their implications for employment are becoming increasingly evident. This study examines the multiple effects of AI on the labour market, including automation and augmentation, the emergence of new positions, and the ethical issues surrounding AI. Understanding these dynamics is crucial for preparing individuals, institutions, and communities for the AI-driven job environment.

A McKinsey Global Institute report suggests that integrating AI into the global economy has the potential to transform entire industries and alter the nature of employment. This study provides a comprehensive examination of AI's substantial effects on employment dynamics, emphasizing AI's potential for productivity, innovation, and economic growth, while also addressing the challenges it poses for individuals, businesses, and society.

II. LITERATURE REVIEW

In academic research, the effects of AI on labour markets have been extensively studied. This section summarizes key research and findings on the topic:

Displacement of workers by Automation

Numerous studies have investigated how automation and AI are transforming the labour sector. Frey and Osborne (2017) estimated that approximately 47% of all jobs in the United States are at risk of automation. Chui et al. (2016) introduced the concept of "job churn," where automation displaces workers but also creates new opportunities in other fields. Arntz et al. (2016) argued that the impact of automation might not be as extensive as once thought, emphasizing the importance of considering job-task-level automation rather than total job displacement.[1]

Augmentation and new opportunities

AI is seen as a source of new career opportunities rather than solely a cause of employment displacement. A 2019 study by Bessen highlighted how AI has enhanced certain job roles, leading to increased productivity and job growth. Beede et al. (2019) noted the rise of new AI-driven job categories, such as data scientists, machine learning engineers, and AI ethicists. These findings suggest that the impact of AI extends beyond displacement, creating a demand for expertise in AI-related fields.[2]

Work Transformation

The literature also explores how work is evolving in the AI era. The "gig sector" and remote employment have gained

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prominence. A study by Manyika et al. (2016) discussed the growth of gig labour and its implications for income stability and job security. Additionally, McKinsey & Company (2018) highlighted the opportunities AI offers for remote work, reshaping the global labour market.

Social and Ethical Aspects

The social and ethical dimensions of AI's impact on labour markets are critical. D'Onofrio's (2019) research examined the ethical issues of AI bias, privacy, and accountability in hiring practices. Brynjolfsson and McAfee (2014) explored how AI might affect access to employment opportunities and income inequality on a broader social scale.[3][4]

Literature's Gaps

Despite providing valuable insights, there are gaps in the literature. More longitudinal studies are needed to monitor the long-term impacts of AI on labour markets. Additionally, there is a lack of research on regional variations in how AI affects jobs and on policies to address the challenges AI presents.

III. METHODOLOGY OF PURPOSED SURVEY

This study uses secondary data gathered from various online journals, publications, and magazines.

Research Goals

Determine the degree of employment displacement caused by automation and AI across different sectors and geographical areas.

Identify new employment opportunities, particularly in developing sectors and AI- related fields. Project future AI adoption trends and their anticipated effects on labor markets. To investigate the important effects of AI on job prospects in India's different industries.

To recognize and comprehend the difficulties that AI presents for occupations in many industries that need varying degrees of competence, from low to high. To investigate the array of employment prospects arising from the implementation.

In order to provide a full analysis, this research integrates information from a variety of sources in a comprehensive manner. Scholarly research publications, industry reports, and reliable surveys are some examples of these sources. An all- encompassing grasp of AI's effects on employment in India can be attained by utilizing a diverse range of perspectives and facts. Due to the methodology's use of both qualitative and quantitative analytic tools, a thorough analysis is possible.

Following figure shows how India is adopting AI :



IV. RESULTS AND DISCUSSION

The examination of AI's potential effects on future labour markets has revealed complex processes likely to change the nature of work in the coming years. The key findings and their implications are discussed below:

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Labour Migration and Automation : Our research indicates that many sectors are automating repetitive and routine tasks, potentially eliminating numerous existing jobs, particularly manufacturing, customer service, and data processing. This aligns with estimates by Chui et al. (2016) and Frey and Osborne (2017) that nearly half of US jobs are at risk of automation. These findings underscore the need for worker retraining and upskilling programs.

Role Expansion and Development Rather than just displacing jobs, AI creates new employment opportunities, especially in data analysis, automated maintenance, and AI development. This dual impact aligns with the findings of Bessen (2019) and Beede et al. (2019), who highlighted how AI enhances human labour and promotes job growth. As AI technology advances, individuals with the necessary skills can capitalize on these new job opportunities.

Shift in Place of Employment

AI is also changing the nature of work and workplaces. The rise in remote work and gig employment, facilitated by AI technologies, is transforming where and how people work. Manyika et al. (2016) emphasized the impact of gig work on job security and income stability, while McKinsey & Company (2018) highlighted the potential for AI-enabled remote work to reshape the global job landscape.

Social and Ethical Considerations

The ethical implications of AI's impact on the labour market cannot be ignored. D'Onofrio (2019) and Brynjolfsson and McAfee (2014) identified issues such as bias, privacy, and accountability as critical concerns. Ensuring fair, transparent, and responsible AI implementation is essential to maintaining public trust and mitigating negative social impacts.

Positive Impact

Enhanced Productivity: AI handles repetitive tasks, allowing workers to focus on complex tasks requiring human skills like creativity and problem-solving.

Enhanced Safety: AI systems can identify and mitigate potential safety risks, reducing workplace accidents and injuries.

Improved Decision-Making: AI's data processing capabilities enable more accurate and informed decisions.

Increased Output: AI can help workers complete tasks more efficiently and accurately, boosting overall productivity. **Personalized Customer Service**: AI can analyze customer data to offer personalized guidance and support, enhancing the customer experience.



Negative Impact

Job Displacement: AI's automation of previously human-performed tasks could lead to significant job losses and increased unemployment in some industries.

Skill Obsolescence: Workers may need to acquire new skills as AI technologies advance, potentially making current skills outdated and inadequate for future job requirements.

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Privacy Concerns: AI systems often collect and analyze personal data, raising significant privacy and data security issues.

Social Disruption: The rise of AI could lead to social upheaval and exacerbate economic inequality by displacing workers, especially those with lower skill levels.

New Sectors driven by AI

Artificial intelligence (AI) has been the revolutionized company operations and driven innovation across a wide range of industries.

AI has completely changed the healthcare industry by improving patient care, tailored medicine, and diagnostics. In order to help with early disease detection and treatment planning, machine learning algorithms can examine medical data, including pictures and patient information. Chatbots and virtual assistants driven by AI also enhance patient assistance and engagement.

Finance: AI has revolutionized the finance sector by automating procedures, detecting fraud, and enhancing risk management. Large-scale financial data is analysed by machine learning algorithms in order to spot trends and forecast investment strategies. Chatbots with AI capabilities are also utilized for financial advice and customersupport

Manufacturing: By streamlining workflows, improving quality assurance, and cutting down on downtime, artificial intelligence has made smart manufacturing possible. Robots and automation systems driven by AI efficiently and precisely carry out difficult jobs. Artificial intelligence (AI) algorithms are used in predictive maintenance to reduce production disruptions and avoid equipment failures.

Retail: AI has improved consumer experience, inventory management, and tailored marketing in the retail sector. AIpowered recommendation systems offer users customized product recommendations. Chatbots and virtual assistants driven by AI provide customer service and answer questions.

Transportation: The use of AI in autonomous vehicles and intelligent traffic management systems has completely changed the way people travel. Artificial intelligence (AI) algorithms- driven self- driving automobiles and trucks have the potential to increase traffic efficiency and safety. AI also contributes to better logistics operations, less traffic, and optimized route planning.

V. FUTURE WORK AND CONCLUSION

Automation of Jobs: As AI technology develops, worries are raised about the possibility of employment automation across a range of industries. AI technology can automate a lot of repetitive and routine operations, which could cause some jobs to become obsolete. To make sure that people have the skills required for the professions of the future, it will be crucial to concentrate on reskilling and upskilling the workforce.

Cooperation between AI and Humans: AI has the ability to enhance human capabilities rather than totally replace them. Humans and AI systems will likely work together more frequently in the future as AI helps people make decisions, solve problems, and complete activities more quickly. Increased creativity and productivity may result from this cooperation.

AI in Healthcare and Medicine: AI has the power to completely transform these fields of study. It can help with medication development, patient care, tailored treatment, and medical diagnosis. Systems driven by artificial intelligence (AI) are able to evaluate enormous volumes of medical data, spot trends, and offer insights to help medical practitioners make precise diagnosis and treatment choices.





In conclusion, AI is transforming the nature of employment, and it is crucial for individuals, businesses, and policymakers to understand this. Preparing for the AI- driven job market involves equipping individuals with the skills needed to succeed in this changing environment and developing policies that balance the benefits and drawbacks of AI, with a particular focus on addressing ethical issues. The AI revolution is not a distant future scenario but a present reality. Our ability to navigate the complexities of the AI-powered future labour market will depend on how we embrace it, leverage it for the greater good, and ensure its benefits are equitably distributed.

REFERENCES

- 1. Frey, C. B., & Osborne, M. A. (2017). The future of employment: How susceptible are jobs to computerization? Technological Forecasting and Social Change, 114, 254-280.
- 2. Bessen, J. E. (2019). AI and Jobs: The Role of Demand. NBER Working Paper No. 24235, National Bureau of Economic Research.
- 3. D'Onofrio, M. (2019). AI Ethics in Predictive Policing: From Models of Bias to a Regime of Rights. Stanford Technology Law Review, 22(2), 322-356.
- 4. Brynjolfsson, E., & McAfee, A. (2014). The second machine age: Work, progress, and prosperity in a time of brilliant technologies. W. W. Norton & Company.
- 5. Allen, G. C. (2019). Understanding China's AI strategy: Clues to Chinese strategic thinking on artificial intelligence and national security. Center for a New American Security, Washington, DC.
- 6. IH Witten, E Frank, MA Hall, CJ Pal Data Mining: Practical Machine Learning Tools and Techniques (Morgan Kaufmann, Burlington, MA, 2016.





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