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AI in Employment: Threats or Opportunity? An Analysis of Global Trends, Sectoral Impacts, and Policy Responses

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Abstract: ***Artificial intelligence is one of the most discussed topics today. It is changing the way people work. This paper examines whether AI is a threat to employment or an opportunity. It analyses which sectors are expanding, which industries are at the greatest risk, and how skill requirements are changing, using the global data of the past five years. The findings show a mixed picture. AI is likely to replace many routine jobs, especially in retail, administration, manufacturing, transportation, and warehousing. In India, job displacement in the IT sector is a growing concern. Companies such as Infosys and TCS have started to cut thousands of jobs during record profits.***

At the same time, AI is also creating new opportunities. Sectors like healthcare, education, and green energy are expected to generate millions of jobs. New roles are growing in AI ethics, data science, and geospatial technology. AI is creating more demand for creative, analytical, and technical roles. The outcomes depend on preparation and policy. The European Union requires companies to train their workers in AI literacy. India has no such policy. Workers will suffer without skills in AI. The paper identifies the key gaps and offers practical solutions to prepare the workforce for an AI-driven economy.

Keywords: Artificial intelligence, employment, job displacement, automation, India, IT sector, AI literacy, reskilling, future of work, policy, human-AI cooperation, workforce development.

I. INTRODUCTION

Artificial intelligence is being used in regular company operations rather than just in research labs. John McCarthy first used the word in the field in 1956 at the Dartmouth Workshop. Though they had few real-world applications, early systems showed promise. World chess champion Garry Kasparov was defeated by IBM's Deep Blue in 1997. Kasparov was dubbed the first knowledgeable worker whose job was plagued by an AI system by one researcher. In 2012, developments in deep learning sped up progress. The release of ChatGPT by OpenAI in 2022 marked a turning point in the pace. It rose to the fourth-most-visited website in the world within months.

It was used by millions to create programs and write emails. AI was directly responsible for over 3,900 layoffs by 2023. AI has both positive and negative effects on employment. Between 2013 and 2024, global investment in AI reached unprecedented levels. By 2024, the US had invested $290 billion. $110 billion was invested by China. $30 billion was invested by India. 803 businesses with 11.3 million employees in 45 economies were polled by the World Economic Forum.

By 2027, over 75% anticipate using AI (WEF, 2023, p. 5). By 2027, 23% of all jobs will be impacted by these changes (WEF, 2023, p. 6). Policy has not kept up with this disruption. India is experiencing a record level of governance failure. There is no AI employment protection legislation in the nation. There isn't a reskilling fund. AI displacement is not addressed by any safety net. There are still five significant policy holes.

This is significant because, by 2030, 1.8 to 2 million Indian IT employees will be in jeopardy. The IT sector directly employs 5.4 million people and provides support to an additional 15 million. An IT profession provides a means of escaping poverty for millions of families. There are risks as well as opportunities. Drone operations and GIS mapping are two areas where geospatial AI generates jobs in rural areas. AI skill development is encouraged by government programs like Digital India. You may better prepare for an AI-driven economy by being aware of these trends. This study looks at how AI affects employment globally, how it affects women and migrant workers differently, and what legal frameworks are in place, what skills make up AI literacy, and what tactics minimize harm while optimizing opportunity.

II. LITERATURE REVIEW

A. Threat Narrative

The number of jobs that AI might eliminate has been measured by researchers. By 2030, 800 million to 900 million jobs could be lost due to automation and artificial intelligence, according to McKinsey Global Institute. According to Goldman Sachs, 300 million full-time jobs could be replaced by AI by the end of 2025. 47 percent of jobs, according to Osborne. Less than 5% of jobs can be fully automated with present AI technologies. Rather, it is anticipated that AI will change roughly 60% of jobs byautomating certain processes while humans still collaborate with machines. Different industries will be impacted by automation; transportation, manufacturing, finance, and retail will be more affected than healthcare and education.

B. The Opportunity Narrative

Global job displacement will affect about 40% of jobs touched by AI. The creation of jobs will account for 60%. This has a favourable effect on employment overall. AI might provide 20–50 million new jobs globally by 2030, according to McKinsey. The World Economic Forum projects that over 97 million additional jobs might be produced by 2025. NITI Aayog estimates that throughout the next five years, up to 4 million new jobs could be produced in India. Approximately 2.3 million of them may work in artificial intelligence-related fields. Global job displacement will affect about 40% of jobs touched by AI. The creation of jobs will account for 60%. McKinsey estimates that by 2030, AI might produce 20–50 million new

C. Differential and Contingent Impacts

Research highlights significant gender disparities in how AI affects employment, with women more concentrated in clerical and administrative jobs that face high automation risk. Women remain underrepresented in growing fields like STEM and AI, making up only 22% of the global workforce in these sectors. Unpaid caregiving responsibilities limit women's ability to reskill and adapt to technological changes. A biased AI system may reinforce existing workplace inequalities if not properly designed. AI may also create opportunities through fairer recruitment tools and flexible work models. Migrant workers may face higher unemployment and wage gaps despite increased labour demand for skilled labour. Graduate unemployment is high globally, with 2.5% in Bangladesh and 43.3% in Nigeria. Skills mismatch, lack of experience, and employer demand for soft skills contribute to unemployment

D. AI Literacy as a Workforce Imperative

Understanding AI is becoming an essential requirement for participating in the workforce. The EU AI Act describes AI literacy as the competencies and knowledge that enable individuals to make informed choices regarding AI systems and comprehend their associated risks. Article 4 mandates that organizations ensure their employees possess adequate AI literacy. This is a legal requirement, rather than a suggestion. AI literacy encompasses various elements. Employees must grasp AI principles, data handling, ethical considerations, and algorithms. Additionally, they need to have critical thinking abilities, specialized knowledge, and effective communication skills. Without these, they are unable to assess AI outputs or recognizes possible biases in automated decisions. Employees advance through four phases of AI literacy. Avoidance is the deliberate decision to avoid using AI techniques. To be familiar, one must experiment with AI in the workplace. To be literate is to use AI in daily work with ease. Fluency is the ability to use AI in sophisticated ways that most people cannot use. In an AI-driven economy, those who lack AI literacy run the risk of falling behind. Investing in employee training gives businesses a competitive edge. Employees who acquire these skills guarantee their position in the evolving work market.

III.RESEARCH OBJECTIVES AND QUESTIONS

This study has eight objectives.

1) To analyze the dual impact of AI on employment.
2) To examine the impact of AI on global employment across sectors and regions.
3) To examine how job roles transform from routine tasks to skill-based roles.
4) To identify how AI affects women.
5) To evaluate the effectiveness of reskilling initiatives in reducing workforce polarization.
6) To study policy responses in the European Union and India.
7) To define AI literacy and its role in workforce preparation.
8) To recommend practical strategies for managing change.

These objectives lead to five research questions.

a) How does AI create and replace jobs across sectors?
b) Which routine tasks face the highest automation risk by the year 2030?
c) How does AI affect women?
d) What legal frameworks govern AI's impact on workers, and what gaps exist in India?
e) What strategies best prepare workers for an AI-driven economy?

IV. ANALYSIS AND DISCUSSION

A. *Quantitative Dimension*

The pattern of investment shows where AI jobs will emerge, such as the United States, which invested about $290 billion, China invested $110 billion, and India invested $30 billion in 2024. In 2022 alone, 524 AI start-ups in the U.S. attracted $47 billion in funding. In China, 160 AI start-ups were added, which attracted an average funding of $71 million each. This shows that higher investment directly drives job creation, skill development, and future entrepreneurship. This concentration of capital creates regional inequality in access to AI jobs, favouring high-investment economies over emerging markets like India.The global job displacement-creation balance favors creation. This suggests that job creation outweighs displacement, but the transition remains uneven across sectors and skill levels. McKinsey projects 20 million to 50 million jobs in healthcare, green energy, and education globally by the year 2030. The World Economic Forum reports also stated that 23 percent of all jobs will change by 2027.Sectoral impacts vary widely. 80 percent of automation is in transportation and warehousing. This indicates that logistics and mobility sectors face the highest level of disruption. This change is the effect of self-driving vehicles and automated logistics. Manufacturing follows at 70 percent, reflecting the long-standing use of industrial automation in production systems. Industrial robots have worked on assembly lines for years. About 60 percent of automation is used in finance. Stock markets are dominated by algorithmic trading. Also, customer service has been handled by AI bots. Retail faces 50 percent automation. Cashiers are replaced by a self-checkout system, and stocks are automatically tracked by the inventory system. India shows faster disruption in service sectors, while global trends show more balanced job shifts across industries.As scientists spend more time on complex problem-solving, the STEM fields face about 35 percent automation. AI handles data analysis and diagnostic procedures, which helps professionals, hence healthcare faces about 30 percent automation. Human connection is required for teaching, so education faces the lowest rate at 20 percent, as AI cannot replicate human connection. By 2030, routine and repetitive tasks are expectedto face the highest level of automation, highlighting the urgency of skill transition. Now new roles have emerged that did not exist a decade ago. Those include AI system trainers, data annotators, AI policy specialists, digital transformation consultants, and human AI interaction designers. However, these roles require significantly higher skills, limiting accessibility for mid-level workers.

B. *Qualitative Dimension*

The typical displaced IT worker is a graduate engineer from a tier 2 or tier 3 college in India with 3 to 10 years of experience. Their work is usually repetitive, technical, and process-oriented. Routine tasks are declining, while there is an increase in demand for analytical, technical, and decision-making skills. Their income is between 4 and 12 lakh rupees per annum. They support their family with a home loan and children's education, and this is usually possible because of their stable IT jobs. For such a person, displacement is not only a financial crisis, but it also means there are no benefits, a severance package, a safety net, or a reskilling program. The survey reports show that there are high stress levels among IT professionals who are being displaced, indicating that they experience relationship stress, anxiety, and depression. This is particularly difficult for workers who have been in a mid-career position. They have to balance between professional retraining and family responsibility. Professional identity is also affected by job displacement. Occupation shapes an individual's sense of purpose and social status. AI literacy is becoming a basic requirement for workforce participation.

What options do displaced workers have?

A. Learning a skill in AI takes about 6 to 18 months, with uncertain outcomes. B. Government jobs require competitive exams. C. Lower pay is offered in tier 2 city jobs. 4. Gig work is precarious with income volatility and no benefits. These pathways provide no satisfactory replacement for many mid-level displaced workers. High-skilled workers benefit from new opportunities, while mid-level and low-skilled workers face higher displacement risk. People start resisting change when technology threatens their livelihood. The Stanford AI index documented a 67 percent increase in data poisoning incidents in 2024. One such case study is of a former DevOps engineer who inserted logic bombs into an AI deployment pipeline. This caused trading AI to produce erroneous signals for 14 hours straight, which led to losses exceeding 4.2 million pounds.

Displacement also creates unintended risks beyond employment. This shows how technically skilled displaced workers represent a real security threat. This transforms job displacement from an economic issue into a systemic risk affecting technological infrastructure and market stability.

C. The Gender Lens

In the AI economy, women are particularly vulnerable. They are concentrated in industries that are at high risk of automation, especially administrative and clerical jobs that require repetitive work that AI can readily complete. However, women are still underrepresented in the domains where AI opens up new possibilities.

The figures paint a striking picture. Over 70% of healthcare professionals worldwide are women. However, their share drastically declines in other industries. Less than 30% of STEM jobs are held by them. Just 22% of professionals in the AI sector are women. The disparity grows even more at the leadership level. Less than 10% of CEO positions are held by women.

AI offers opportunities in spite of these difficulties. By anonymizing candidate data and assessing candidates based on skills rather than personal traits, AI-powered recruitment tools might lessen hiring prejudice. Women can obtain individualized training on their own schedule through AI-driven learning platforms. Flexible work arrangements, such as job sharing and remote work, assist women in juggling their caregiving and professional obligations.

Additionally, new interdisciplinary fields are developing. Diverse viewpoints are necessary for AI ethics, governance, and human-AI cooperation. In many fields, women can take the lead and contribute perspectives that homogeneous teams frequently overlook. However, in the absence of focused intervention, AI might exacerbate rather than lessen current gender disparities. To guarantee that women have equal access to the opportunities AI offers, policy and organizational action are crucial.

D. Legal and Policy Framework

The European Union has passed the world's first comprehensive AI law. The EU AI Act defines AI literacy as the skill and knowledge that allows people to make informed decisions about AI systems and understand their risks. Article 4 states that companies are to ensure that their staff have sufficient AI literacy. This establishes AI literacy as a legal obligation rather than a voluntary measure.

AI literacy has nine components. Workers need to have continuous learning. They need to understand concepts, data, ethics, and algorithms. They also require critical thinking, domain knowledge, and communication skills. Workers go through four stages: avoidance, familiarity, literacy, and fluency.

The EU AI Act classifies AI use in employment as high-risk, which increases regulatory obligation for companies. Recruitment, promotion, task allocation, and worker monitoring all trigger additional requirements. Companies need to conduct risk management, maintain data governance, provide human oversight, and ensure transparency.

India has no comprehensive policy for AI displacement. There exist five critical gaps.

1) No mandatory AI employment impact assessments.
2) No displacement-linked unemployment benefits.
3) No mandatory reskilling levy on companies that reduce headcount through AI.
4) No sector-specific labour standards for AI-displaced IT workers.
5) NASSCOM represents companies, not workers

This regulatory absence places the burden of adaptation entirely on workers, increasing vulnerability to displacement.

India has made ambitious AI plans.

a) The National AI Strategy was launched in 2018.
b) The IndiaAI Mission launched in 2024 with a ₹10,371 crore allocation.
c) The government funds AI development but does not support displaced workers.

This reflects a major policy failure in addressing AI-driven workforce disruption. 5.4 million direct IT jobs are at stake, and 15 million indirect jobs. 250 billion dollars in annual export revenue.

The European Union focuses on regulation and training, while India lacks structured implementation and enforcement.

E. Strategies and Solutions

One researcher proposes a three-tier framework for India. Tier 1 covers the first 12 months. It creates a National AI Employment Monitoring System and requires companies with over 1,000 employees that reduce headcount by more than 5 percent to publish transition plans. It also establishes an Emergency Reskilling Fund of ₹5,000 crore.

Tier 2 covers years 1 to 3. It passes an AI Employment Protection Act mandating severance and extending health coverage, and develops a National AI Reskilling Curriculum. It also proposes creating Digital Employment Zones in Tier-2 and Tier-3 cities.
Tier 3 covers years 3 to 10. It aims to reform engineering education, guarantee one subsidized reskilling program per adult per decade, and establish a permanent national AI ethics and labour standards board. In addition to policy reforms, institutional and educational interventions are essential.
A separate study identifies six strategies for higher education-
1. Strengthen academic program design and align curricula with market demands.
2. Enhance employability pathways through mentorship and work-integrated learning.
3. Foster holistic student development.
4. Build institutional support through digitalized career services.
5. Forge employer partnerships.
6. Prepare graduates for technological change.

Five gender-responsive policies have been proposed.
1. To ensure diversity in AI development.
2. To expand gender-responsive training.
3. Support women in growth sectors.
4. Promote work-life balance.
5. Monitor AI's impact with gender-specific assessments.
15 GeoAI recommendations have been given across urban planning, agriculture, disaster management, workforce development, and governance. These create pathways for rural employment in drone operations, remote sensing, and GIS mapping.

V. CONCLUSIONS

After looking at all the evidence, AI is both a threat and an opportunity. It will displace millions of workers. But at the same time, it will also create millions of new jobs. The impact depends on sector, skills, and access to training.
The numbers are clear. Data shows job creation will exceed job loss. The transition will not be smooth. In India, the impact is already visible in the IT sector. Many workers will face uncertainty without proper support. Job loss also affects mental health and identity.
Women face a different kind of risk. Many work in roles with routine tasks. Their presence in the AI-related field remains low. At the same time, AI creates new opportunities through flexible work and new career paths.
Policy decides outcomes. The EU has taken steps to train workers and regulate AI. India lacks a complete framework. Five major gaps remain. There are no impact assessments, displacement benefits, reskilling requirements, or workers' protections. Without targeted intervention and large-scale reskilling, the benefits of AI will remain uneven and deepen existing inequalities.

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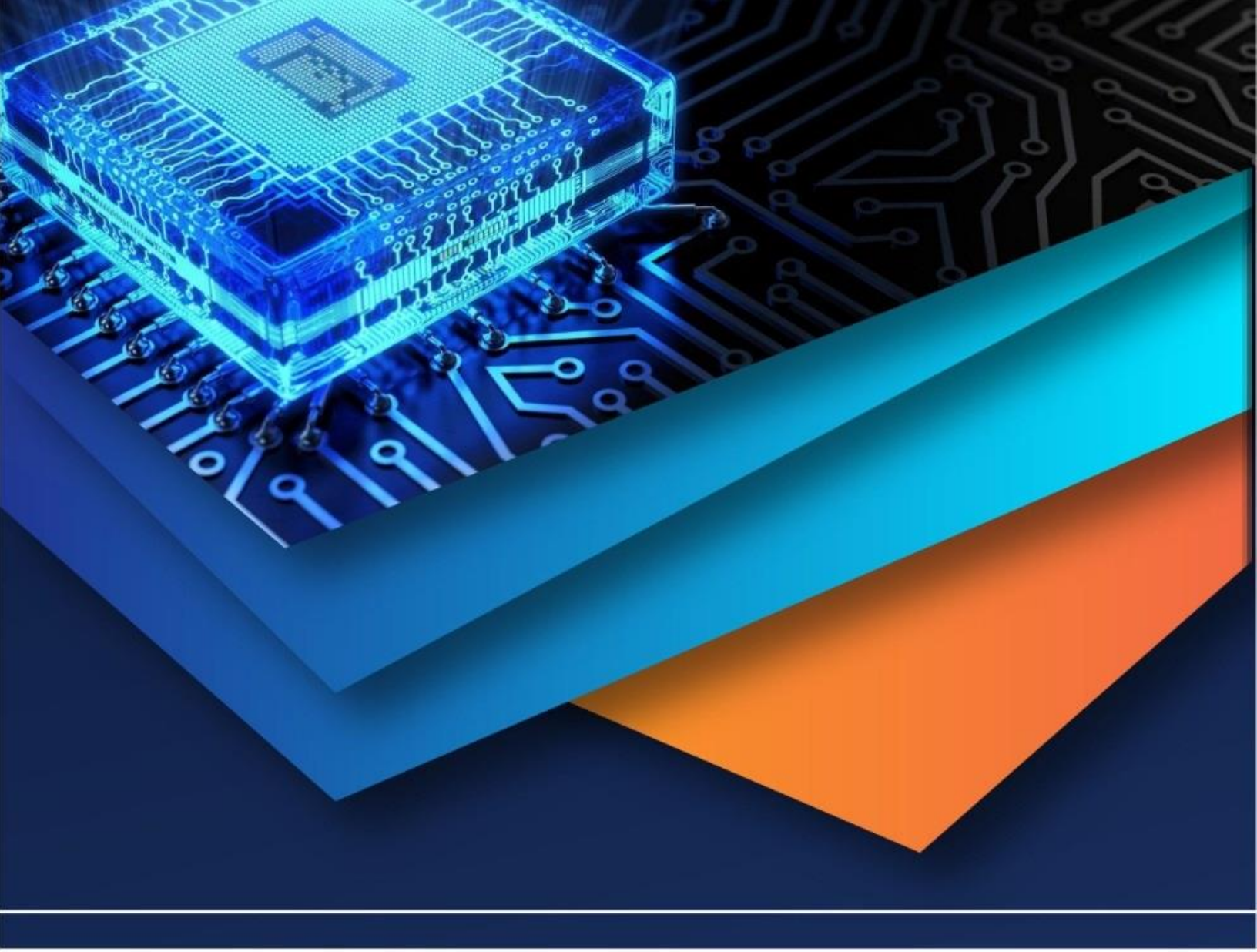

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