

Impact Of AI and Automation on Workforce

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Abstract:

This paper aims to review former studies probing the impact of automation technologies, particularly Artificial Intelligence (AI), on mortal employment. As automation continues to evolve and reshape industriousness, there is growing concern about its implicit to displace mortal workers. still, there is also significant disquisition suggesting that AI and automation may not inevitably count jobs, but rather transform them. This study seeks to explore the various ways in which automation technologies impact the pool and how workers can adapt to these changes. This descriptive qualitative exploration outlined data pulled from vibrant scholarly documents and former studies that study the part of AI and robotization in the plant. The thing is to give an in- depth view of the complexity of responding challenges and openings presented by robotization, particularly around work patterns, job deportation and chops development in working life. The spiritual awake being body of exploration demonstrates the fact that whilst occupations, especially those involving repetitive work routines might be no doubt floated with the appearance of robotization technology, and other factors like may beget analogous loss. workers who upskill, especially those that compass automation technologies are less likely to face expatriation. rather of making humans spare, AI and robotization are likely to come tools to round mortal labor, performing in a more integrated mortal- machine pool. predicated on the observation, while the prospect of AI and automation may indeed be a challenge for humans in the pool as farther job chops come automated; also humans who adapt with change wo n't be replaced by machines but rather mortal- machine collaboration where AI and automation don't replace humans but come instruments for mortal labor rather.

Keywords — Technology, AI work power, automation, different factory, mortal vs automation in sedulity.

I. INTRODUCTION

The last two decades have brought dramatic technological changes to the global pool, stressed by advances in artificial intelligence(AI) and robotization. According to Tschang & Almirall(2021), Artificial Intelligence, or AI, is a set of attack or software that simulates intelligent mortal geste so that the system can autonomously perform tasks and make choices independent from humans. AI is moving out of its incipient stage, and will transfigure assiduity to new edge and productivity. nevertheless, for all the stated advantages there's real

concern amongst workers over the effect that robotization might have on their jobs and inflows.

Worrying that machines are going to take all the jobs is hardly a new fear. . Yet, this concern has escalated with the appearance of AI & robotic robotization in recent times. robotization in assiduity moment robotization is decreasingly being incorporated into manufacturing, healthcare, transportation and retail tasks. Changing the way, we work within assiduity that preliminarily sounded inconceivable.

On the one hand robotization can destroy jobs, it can produce new bones too still they're generally fully different types of work. Traditionally,

robotization has increased worker productivity by automating repetitious, dangerous or tedious tasks. For illustration, robots and artificial intelligence(AI) can conduct repetitious manufacturing processes while mortal workers engage in tasks that bear allowing creatively, capability to suppose critically or emotional. An increase in productivity lowers the costs and prices of goods and services to consumers, which also leads to new demand. When demand increases, businesses grow, and growth generally creates further jobs. eventually, robotization could also free up workers for further meaningful and big-picture work, which can lead to increased job satisfaction and career advancement openings.

still, the reality is that robotization can also lead to job expatriation, particularly for low- skill and routine tasks that are fluently automated. Workers whose places are directly replaced by machines constantly face significant challenges in chancing new employment. Those in sectors similar as pastoral work, data entry, or introductory manufacturing are especially vulnerable. also, while new jobs may be created, they constantly bear a different set of chops, similar as technological knowledge or advanced training in areas like AI development, machine knowledge, or robotics. Workers without access to training or education may struggle to transition into these new places, aggravating income inequality.

The impact of digital robotization since the 1980s has been particularly stark. numerous workers, especially in traditional manufacturing and pastoral positions, have seen their jobs dematerialize or their stipend stagnate as companies borrow further effective technologies. In distinction, assiduity that demand largely educated workers in fields like software engineering, data wisdom, and AI development have seen pay envelope growth and lower job creation. still, this peak has contributed to growing income inequality, as those with technical chops profit from robotization, while lower- pay envelope workers face job instability or pay envelope repression.

On the one hand, robotization has the implicit to drive profitable growth, lower prices, and produce new job openings. On the other hand, it can lead to expatriation and pay envelope recession for certain

corridor of Page 1 of 2 the pool, particularly those without the chops demanded to acclimatize to new technological demands. thus, understanding the goods of robotization is vital for policymakers, preceptors, and workers likewise. Investments in education and retraining programs can help workers acquire the necessary chops to thrive in an decreasingly automated frugality. By preparing for these changes, society can better harness the benefits of robotization while mollifying its negative consequences on the job request.

It's important to understand the impacts of robotization on the job request to make informed opinions about education, training, and career paths. In this exploration paper, we will club some of the positive and negative impacts of robotization on the Job request.

II. OBJECTIVE OF THE STUDY

- A. Identifying which jobs are most likely to be automated and in what sectors?*
- B. Exploring new job markets created by AI technologies, especially areas such as AI development, data analysis and cyber security.*
- C. New skills and competencies needed under the AI job market.*

III.HYPOTHESIS OF THE STUDY

- 1) AI & robotization are likely to affect in great job relegation, especially those of routine and repetitious nature.
- 2) AI'll fuel job generation in new diligence like AI development, data analytics, cyber security and services linked to AI.
- 3) Training these people chops will be a precedence once AI successes, because work is going to need it.
- 4) Objectification of AI into colorful diligence will most probably ameliorate productivity and effectiveness among others leading to profitable growth and changing dynamics in the pool.

IV.LITERATURE REVIEW

The exploration on how robotization and AI affect jobs is veritably complex because it looks at numerous different situations — like global,

public, assiduity, plant, and individual workers. Different studies use different ways to measure the impact, similar as how probably a job is to be automated or the overall effect on employment. Because of this, the results are frequently mixed and unclear. Only a many studies agree, and it's hard to say for sure what the full impact of robotization will be. Experimenters also point out that further work needs to be done in this area, and they suggest unborn directions for study.

Study Summaries in Simple Terms:

- A. **KAPIL KUMAR GUPTA, May 2023:** This study looks at how AI and robotization are affecting mortal jobs. It uses a descriptive system and gathers perceptivity from other exploration. It shows that AI is replacing numerous jobs, but mortal rates like mistrustfulness and empathy are still hard for AI to copy. The study says that humans need to make their chops to keep up. In the future, people and machines may work together, with AI helping humans rather than replacing them.
- B. **Fenglian Wang(B), Mingqing Hu, and Min Zhu:** This exploration focuses on lower metropolises and how people there view AI. They used checks and interviews to understand people's opinions. They set up that while AI might take down some jobs, it can also produce new bones . The authors give suggestions for how governments, businesses, and seminaries can help people deal with these changes.
- C. **Marguerita Lane and Anne Saint-Martin, Jan 2021:** This paper explains that while AI may beget job losses, it can also ameliorate job quality and productivity. It depends on the type of AI and how it's used. So far, AI has n't caused big drops in jobs or stipend, but it has changed the tasks people do at work. AI could make workplaces more effective, but if it's used just to cut costs, it could be parlous.
- D. **Janine Berg, Oct 2024:** Berg says people generally see AI as either a big trouble to jobs or a way to make workers more productive. She takes a balanced view, saying the future is n't set in gravestone. Society can decide how to use AI in a positive way. Some job loss is likely, and it could hurt people's unborn earnings, so we need to manage this precisely.
- E. **Kweilin Ellingrud, Saurabh Sanghvi, Gurneet Singh Dandona, Anu Madgavkar, Michael Chui, Olivia White, and Paige Hasebe, July 2023:** This report looks at how generative AI(like ChatGPT) might change jobs by 2030. It could take over over to 30 of working hours in the U.S. Jobs in client service and food service are most at threat, but AI may help people Page 1 of 2 in creative and specialized fields work more. The study says we should invest in training and education to help people acclimatize.
- F. **Lane, M. and A. Saint-Martin 2021:** Their review looked at how AI is affecting jobs and stipend, the types of chops we need now, and how work is changing. They point out that we still do n't have all the answers and need further exploration to guide unborn opinions.

V. RESEARCH METHODOLOGY

The study will begin by conducting an expansive literature review to gather applicable exploration and data on impact of AI on job request. This review will include a broad hunt of academic journals, assiduity reports, government publications, and other material sources to insure a well- rounded understanding of the content. By examining being exploration, the study will aim to identify current trends, challenges, and areas where AI is anticipated to have the most significant goods on employment. The thing is to make a strong theoretical foundation and uncover perceptivity on both the positive and negative aspects of AI's influence on labor requests.

First, quantitative data will allow for the identification of clear patterns and correlations between AI handover and job request trends. For illustration, the study could reveal whether AI handover is linked to an increase in job creation in some sectors, while causing job deportation in others. also, the large- scale collection of data will give a statistically robust base for assaying trends, making the findings more generalizable across industriousness. checks will also allow for a broad representation of demographic variables, analogous as age, education, and job type, enabling the disquisition to illuminate how different groups are affected by AI.

Quantitative data, while useful for relating trends, may not fully capture the complications of individual exploits with AI in the factory. For case, workers in certain places may face challenges that are delicate to quantify, analogous as emotional stress, changes in job satisfaction, or the need for ongoing skill adaptation. To palliate this, the study could combine quantitative data with qualitative styles, analogous as interviews or concentrate groups, to capture a farther nuanced view of workers' perspectives. This mixed-styles approach would allow for a deeper understanding of how AI is affecting the pool on both a broad and individual position.

Once the disquisition data is collected, it will be reused incontinently to decide the study's findings. Statistical analysis will be used to identify pivotal patterns and trends, analogous as shifts in job vacancy, pay envelope situations, or the demand for new skill sets. The findings will give precious perceptivity into whether AI is creating new job openings, enhancing worker productivity, or aggravating inequality. These results will also inform recommendations for policymakers, business leaders, and instructors, helping them make informed opinions about pool planning, training programs, and strategies to address the challenges and openings brought by AI.

Overall, the study will give a comprehensive analysis of AI's impact on the job request by combining quantitative data collection with thoughtful analysis of the broader trends. By considering both the benefits and challenges posed by AI, the study aims to offer balanced recommendations that can help palliate the risks of job deportation while staking on AI's eventuality to drive profitable growth and invention.

VI. DATA COLLECTION

The study adopted a desktop research approach, utilizing secondary data exclusively and avoiding any direct fieldwork. This method leverages pre-existing information, offering a more budget-friendly alternative to field-based research, with the main costs limited to staff time, telephone usage, and directory access. Consequently, the research drew upon a range of published materials, including studies, reports, and statistical data accessible via

online academic journals and digital libraries. All referenced materials are comprehensively listed in the bibliography of this paper.

VII. DATA ANALYSIS

Here are some key insights based on recent data and analyses:

Job Creation vs. Job Loss: Between 2023 and 2027, most companies around the world expect that technologies like big data and artificial intelligence (AI) will create more jobs than they eliminate. About 65% of businesses think these tools will open up new job opportunities, while only 7% believe they will lead to job cuts.

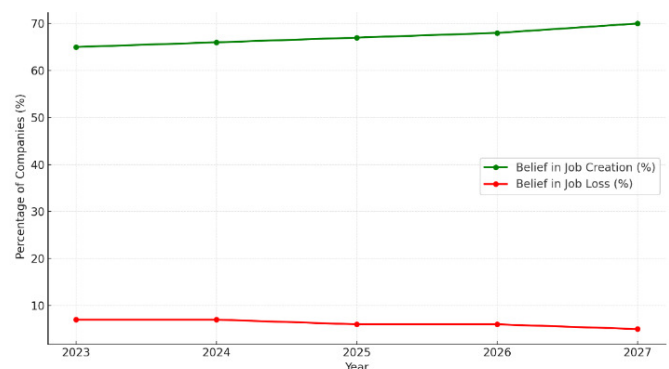


Fig. 1 Global View on AI and Big Data's Effect on Jobs (2023-2027)

Role identified as being in high demand or increasingly redundant within their organization, ordered by frequency

EMERGING	
1.	Data Analysts and Scientists
2.	Big Data Specialists
3.	AI and Machine Learning Specialists
4.	Process Automation Specialists
5.	Food Processing and Related Trades Workers
6.	Organizational Development Specialists
7.	Management and Organisation Analysts
8.	Database and Network Professionals
9.	Business Development Professionals
10.	Assembly and Factory Workers
REDUNDANT	
1.	Data Entry Clerks
2.	Administrative and Executive Secretaries
3.	Accounting, Bookkeeping and Payroll Clerks
4.	Accountants and Auditors
5.	Mechanics and Machinery Repairers
6.	Sales Representatives, Wholesale and Manufacturing, Technic...
7.	Material-Recording and Stock-Keeping Clerks
8.	Door-To-Door Sales Workers, News and Street Vendors, and R...
9.	Client Information and Customer Service Workers
10.	Assembly and Factory Workers

Fig. 2 Emerging and Redundant Job Roles

Skill Gaps and Job Trends: There's a growing gap between high-skill and low-skill jobs. High-skill jobs are in greater demand, while low skill jobs are at higher risk of being replaced by machines. Knowing how to use digital tools and technology is becoming more important, especially for getting jobs in tech-related fields.

What History and Economics Tell Us: Looking back, we see that new technologies often change how people work. For example, during the Industrial Revolution, many jobs were lost at first, but new industries and careers were created over time. Economists explain that technology usually helps people with advanced skills, while it tends to replace simpler, repetitive jobs.

Automation and Work: AI and robots can help businesses work faster and more efficiently, which is good for economic growth. However, they also raise concerns about job security, wages, and how work itself is changing. Many tasks people do today could eventually be done by machines, which may change the kinds of jobs available.

Policy and Worker Support: Leaders in government and business need to plan for these changes. Good solutions include improving education and training programs to help workers learn new skills. There should also be support for people who lose their jobs, helping them move into new roles that are being created by technology.

Share of companies surveyed



Fig. 3 Expected Impact on Workforce

VIII. FINDINGS AND SUGGESTIONS

AI and automation are expected to displace jobs, particularly in routine, low-skilled, and medium-skilled roles. Sectors like manufacturing, retail, and customer service are already experiencing this shift. **Job Creation:** New job opportunities are emerging in fields like data science, cybersecurity, and AI ethics. These roles often require advanced skills and training. **Economic Impact:** AI can significantly boost productivity by automating complex tasks and improving efficiency. This can lead to economic growth and increased competitiveness. **Income Inequality:** There's a concern that AI could exacerbate income inequality. High-paying roles may become concentrated among those with access to AI skills and resources, while others may face stagnant wages or job losses.

Governments and organizations should invest in education and training programs to help workers acquire new skills and adapt to the changing job landscape. **Promote Reskilling and Upskilling:** Encourage continuous learning and development to ensure workers can transition to new roles created by AI and automation. **Implement Fair Labor Practices:** Develop policies that support fair labor practices, including fair wages and job security, to mitigate the negative effects of job displacement. **Support Innovation and Entrepreneurship:** Foster an environment that encourages innovation and entrepreneurship to create new job opportunities and drive economic growth. **Enhance Social Safety Nets:** Strengthen social safety nets to provide financial support and assistance to workers affected by job displacement.

IX. CONCLUSION

For the job market, artificial intelligence (AI) is both a blessing and a curse. For example, AI-driven automation will likely disrupt significant portions of routine and repetitive work like manufacturing, customer service, and data entry. If not handled correctly, many could face unemployment due to this displacement. In the other sense, the introduction of AI will open new jobs as well, since it will need also an increasing

number of specialists in technology areas (from development and data analysis to cybersecurity) to maintain and develop beneficial systems. These new jobs tend to be more skill-intensive, creating larger demands for upskilling and reskilling the workforce.

What Comes NextThe Job Market and the Future of WorkAI will put an upward pressure on job creation, implicitly because everything done by humans could be potentially done by AI. Consequently, pro-active steps such as investment in education and training, policy support, responsible development of AI will be essential to minimize the negative aspects and to maximise the positive potential of AI. Policymakers, businesses and academia should work together to implement every condition conducive to distributing the fruits of AI as widely as possible —and alleviating the risk of economic inequality.

In conclusion, AI is going to change up how jobs are done, but also brings a massive opportunity for growth and innovation as well.

The challenge is to manage these dynamics, in order to shape a future where AI and its human work colleagues coexist and prosper.

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