

RNI No. RAJHIN/2007/26996
ISSN 0976-7452 Raaso
Refreed Journal

रासो

अन्तर्विषयी त्रैमासिक शोध पत्रिका

वर्ष-16, अंक-2, मार्च अप्रैल मई 2023





RNI No. RAJHIN/2007/26996
ISSN 0976-7452Raaso
Refreed Journal

रासो

इतिहास, संस्कृति, साहित्य एवं दर्शन की त्रैमासिक शोध पत्रिका

वर्ष-16

अंक - 2

मार्च-अप्रैल-मई-2023

सम्पादक

डॉ. दिनेश चन्द्र शर्मा

निदेशक

कॉम्पिटिशन प्लस संस्थान, ग्रुप ऑफ इन्स्टीट्यूशन्स, अजमेर (राजस्थान)

संरक्षक

* प्रो. जे. पी. शर्मा - पूर्व कुलपति, मोहनलाल सुखाड़िया विश्वविद्यालय, उदयपुर (राजस्थान)

सलाहकार मण्डल

- * प्रो. विभा उपाध्याय - प्रोफेसर, इतिहास एवं भारतीय संस्कृति विभाग, राजस्थान विश्वविद्यालय, जयपुर (राज.)
- * नर्मदा प्रसाद उपाध्याय - प्रसिद्ध साहित्यकार तथा संस्कृति चिंतक, इन्दौर (मध्य प्रदेश)
- * प्रो. टी.के. माथुर - पूर्व अध्यक्ष, इतिहास विभाग महर्षि दयानन्द सरस्वती विश्वविद्यालय, अजमेर (राज.)
- * डॉ. रमेश अग्रवाल - पूर्व स्थानीय सम्पादक, दैनिक भास्कर, अजमेर (राजस्थान)
- * डॉ. गौरव बिस्सा - सहआचार्य, विभागाध्यक्ष, प्रबंध अध्ययन विभाग, राजकीय अभियांत्रिकी महाविद्यालय, बीकानेर (राज.)
- * डॉ. बीना शर्मा - पूर्व विभागाध्यक्ष, हिन्दी विभाग, सावित्री कन्या महाविद्यालय, अजमेर
- * प्रो. शोभा आर. मिश्रा - आचार्य एवं विभागाध्यक्ष, दर्शनशास्त्र विभाग, माधव महाविद्यालय, उज्जैन
- * डॉ. वेद प्रकाश विद्यार्थी - पूर्व सहायक निदेशक, केन्द्रीय हिन्दी निदेशालय, नई दिल्ली।

☆ उप सम्पादक

डॉ. रीता पारीक

प्राचार्य

हुकुमचन्द नोबल इंस्टीट्यूट ऑफ साइंस एण्ड टेक्नोलॉजी, अजमेर

☆ प्रबन्ध सम्पादक

डॉ. मृत्युंजय शर्मा

सह-आचार्य

हुकुमचन्द नोबल इंस्टीट्यूट ऑफ साइंस एण्ड टेक्नोलॉजी, अजमेर

☆ सहायक सम्पादक

डॉ. निष्काम शर्मा

☆ शब्द संयोजन

मुकेश कुमार माहेश्वरी

☆ सम्पादकीय/सचिव

व्यवस्थापकीय कार्यालय

सृजन संस्थान,

आचमन, वेद विहार,

लोहाखान, अजमेर-06

दूरभाष : 0145-2426610

e-mail : rasoajmjournal@gmail.com

☆ प्रकाशक :

पुष्पा शर्मा

सृजन संस्थान,

द्वारा आचमन पब्लिकेशन्स,

अजमेर

☆ मुद्रक :

मैसर्स आर्य प्रिन्टर्स,

केसरगंज, अजमेर

☆ कम्प्यूटराइज्ड सेटिंग :

श्रीनिवास प्रिन्टोग्राफिक्स

132, पंचवटी कॉलोनी,

अजमेर दूरभाष : 0145-2442701

सहयोग दर

* वार्षिक सदस्यता - 500 रु. (चार अंक)

संस्थाओं हेतु - 600 रु. (चार अंक)

कृपया बैंक/ड्राफ्ट/मनीऑर्डर श्रीमती पुष्पा शर्मा, प्रकाशक, आचमन पब्लिकेशन्स,
अजमेर- 305006 के नाम भेजें।

प्रकाशक-श्रीमती पुष्पा शर्मा, 51/1509, वेद विहार, लोहाखान, अजमेर द्वारा मैसर्स सृजन संस्थान, अजमेर
की ओर से प्रकाशित एवं मुद्रक-श्रीमती उषा गर्ग द्वारा मैसर्स आर्य प्रिन्टर्स, केसरगंज, अजमेर से मुद्रित।

Impact of AI on it Jobs and Skills

Shriram Soni

*Asstt. Professor (Department of Science & Technology)
Hukumchand Noble Institute of Science & Technology, Ajmer*

Abstract :

The way information technology (IT) and artificial intelligence (AI) are integrated has completely changed the nature of work and the skills that are required. This study examines the dual effects of AI on IT, looking at how it might improve some tasks while perhaps automating others through a thorough exploration and analysis of the literature. Findings highlight the growing significance of flexible, critical thinking abilities by pointing to a spike in demand for specialized knowledge in data science, machine learning, and AI development. To manage this changing terrain, the research recommends ongoing skill development activities and smart workforce planning. This research intends to give insights for individuals, businesses, and governments to effectively adapt and succeed in the dynamic IT sector, with a focus on the symbiotic link between AI and human talents.

Keywords

Artificial Intelligence, IT Workforce, Job Automation, Skill Development, Reskilling, Data Science, Machine Learning, Soft Skills, Technological Change

1.0 Introduction

1.1 Background information and context for the research

The field of Information Technology (IT) professions and skills has seen a significant transformation with the integration of Artificial Intelligence (AI). AI technologies are having a significant and wide-ranging influence on the workforce as they develop (Acemoglu et al 2020). Routine activities have been simplified by automation and machine learning, which have changed the nature of conventional IT positions. This change has raised questions about possible job displacement, which has led to a reassessment of the skill sets that are required. On the one hand, AI has brought about a surge in employment prospects in domains such as machine learning, data science, and AI development. On the other hand, to support AI systems, there is an increasing focus on competencies including flexibility, sophisticated problem-solving, and human-centeredness. Organizations, governments, and people must comprehend the intricate correlation between AI integration and the IT job market to effectively navigate this dynamic technological environment (Fossen et al 2019).

शोध-पत्र में उल्लिखित सन्दर्भ एवं विचारों के लिए लेखक स्वयं उत्तरदायी है, सम्पादक नहीं।

This research examines how AI and IT employment interact dynamically, with a particular emphasis on how skill demands are changing and what the future holds for the IT workforce.

1.2 Statement of the problem or research question

How does the increasing integration of AI impact the demand for IT jobs and the required skill sets, and what strategies can mitigate potential workforce displacement while leveraging the potential of AI technology?

1.3 Aim and objectives of the research

Aim: This research aims to explore how Artificial Intelligence (AI) is changing the landscape of IT jobs and the necessary skill sets.

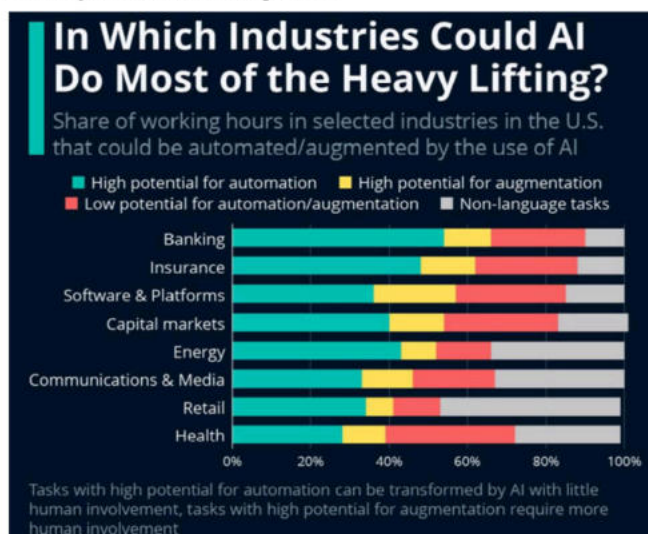
Objectives

- * To examine the current IT positions that are impacted by AI and determine whether functions are being enhanced or automated.
- * To identify the skill sets that are in demand and those that are in danger.
- * To formulate strategies and recommendations for individuals and organizations to adapt and mitigate job displacement

2.0 Literature Review

2.1 Examining the Impact of AI on Contemporary IT Positions: Enhancements and Automation Perspectives 250

According to Smith et al., 2019, AI is improving IT activities and how it may be used to improve cybersecurity, streamline system operations, and optimize data analysis. This viewpoint is consistent with the notion that AI is a tool that empowers IT workers in their duties rather than just being a disruptive force. On the other hand, researchers focus on automation, pinpointing certain IT jobs that AI may be able to replace.



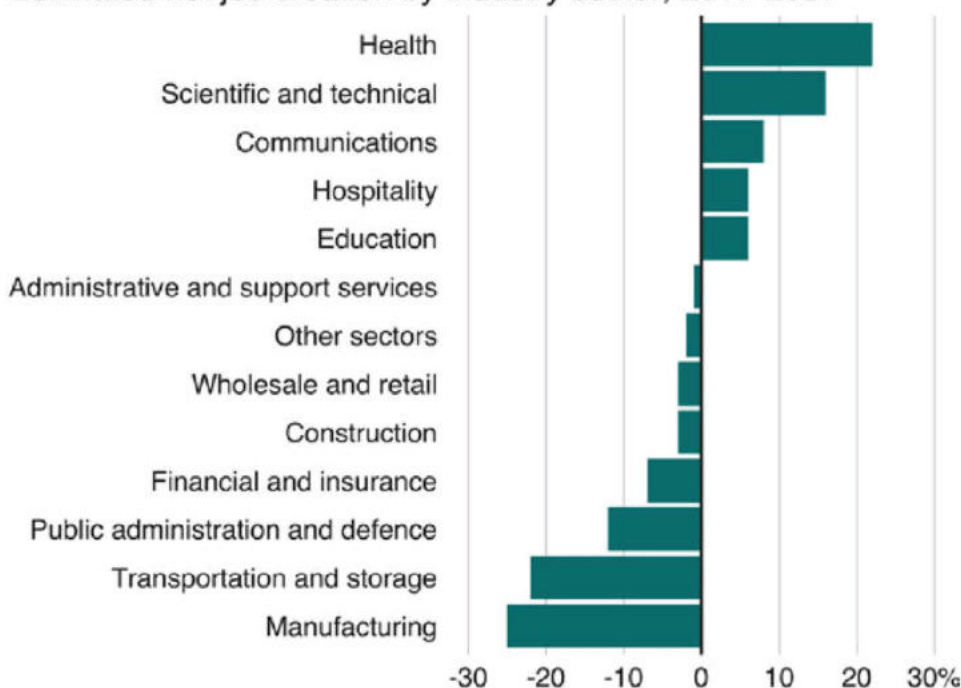
The areas where automation could result in a change in work duties are emphasized as routine maintenance, basic troubleshooting, and data input. Analyzing skill sets highlights how much demand there is for people with experience in data science, machine learning, and AI development (Smith et al., 2019). It is becoming more widely acknowledged that soft skills like flexibility and critical thinking are vital for surviving in the rapidly changing IT industry.

2.2 Navigating the IT Skills Landscape: In-Demand Proficiencies and Skills at Risk in the Era of AI

Piette et al., 2022, expressed concern about some abilities perhaps becoming obsolete. It has been determined that repetitive activities, rudimentary coding, and manual data input are at-risk skills that might become less relevant as artificial intelligence becomes more integrated. The literature emphasizes the necessity of strategic workforce planning, ongoing skill development initiatives, and ethical concerns in response to these difficulties.

How AI could change the job market

Estimated net job creation by industry sector, 2017-2037



The main emphasis of the recommendations is on cooperative strategies where AI enhances human talents rather than replaces them (Piette et al., 2022). This thorough literature analysis helps people and organizations develop flexible

strategies to succeed in the changing IT environment by offering sophisticated knowledge of the complex effects of AI on IT roles.

2.3 Literature Gap

Significant gaps remain in the literature despite the wealth of studies on the effects of AI on IT roles and skill sets. Very few research papers explore the complex relationship that developing soft skills which are essential for IT professionals have with new AI technology. Furthermore, little research has been done on how regional differences in the need for AI-related skills affect demand, which makes it difficult to provide a complete picture of worldwide trends. Furthermore, there is still a dearth of research on ethical issues surrounding the incorporation of AI into IT jobs. Filling up these gaps might offer a more comprehensive view, helping people and companies alike navigate the changing AI landscape in the IT industry.

3.0 Methodology

3.1 Research Design

This research uses a descriptive methodology to provide a thorough overview of how AI is affecting IT jobs and competencies. It attempts to depict the present state of the IT workforce through in-depth research and characterization, examining the changes brought about by AI integration. This method will provide a more nuanced understanding of the changes in the demand for skills and job roles within the IT sector by giving a comprehensive picture of the changing employment market (Hunter et al.,2019).

3.2 Research Approach

The influence of AI on IT jobs and skills will be examined and synthesized in this research using the deductive approach, which will draw on studies, literature, and publicly available data to provide a thorough review of the body of knowledge currently available in this field (Hall et al.,2022).

3.3 Explanation of data collection procedures

The data is collected through existing information from reputable sources such as academic publications, and industry reports to find out the patterns to analyze the impact of AI on current IT job roles and required skills.

3.4 Data analysis

This research involves combining research from scholarly publications, and industry publications, to determine patterns and trends that shed light on how AI is affecting IT job positions and the skills that are required.

3.5 Ethical Consideration

This research aims to present information truthfully and responsibly,

minimizing biases and ensuring the welfare of the subjects mentioned in the literature.

4.0 Results

4.1 Introduction

The analysis of various viewpoints on AI's influence on the IT industry is the main focus of this results section. Diverse research insights clarify the subtle shifts in work responsibilities and the changing skill requirements, emphasizing how crucial it is to adjust to the mutually beneficial interaction between AI and human skills in the IT landscape.

4.2 Presentation of the Findings from the Literature

Theme 1

According to the analysis, AI has two effects on IT positions. This is consistent with the first theme. It highlights how AI may improve cybersecurity, make data analysis more efficient, and simplify system operations. Potential automation is being highlighted at the same time, especially in data entry, simple troubleshooting, and periodic maintenance.

Theme 2

Regarding the second theme, research shows that there is a growing need for people with expertise in data science, machine learning, and AI development and that soft skills like adaptability and critical thinking are becoming more and more important. The results draw attention to the possible obsolescence of manual data entry, simple coding, and repetitive operations, underscoring the need for ongoing skill development programs and strategic personnel planning to adjust to the shifting environment.

4.3 Summary

The results section sheds light on AI's dual ability to improve IT operations and automate certain activities. It emphasizes how the necessity for specialized talents and adaptable techniques is always changing.

5.0 Discussion

5.1 Interpretation and analysis of the results

AI is enhancing many IT roles like cybersecurity, data analysis, and system operations by automating routine tasks. However, some jobs involving basic troubleshooting, maintenance, and data entry are more prone to automation. There is an increasing demand for skills in areas like data science, machine learning, and AI development to support new AI systems. Technical skills alone are no longer sufficient. Soft skills like flexibility, critical thinking, lifelong learning, and adaptability are becoming critical for IT professionals to keep pace with

technological changes.

5.2 Addressing limitations and potential future research directions

Routine and repetitive technical skills are at higher risk of becoming obsolete. Strategic workforce planning and reskilling initiatives are needed to manage disruption. The relationship between AI and IT jobs is complex. A balanced and collaborative approach is needed where AI augments but doesn't replace human capabilities.

6.0 Conclusion

6.1 Summary of the key points of the research

This research examined how AI is enhancing many IT jobs while automating routine tasks. It explored in-demand skills in areas like data science and ML. The importance of soft skills for adaptation was also highlighted.

6.2 Linking with Objectives

The objectives of identifying impacted jobs and skills, and strategies to adapt, were met through literature analysis. The research provides insights into functions enhanced by AI and those at risk of automation.

6.3 Final remarks on the significance of the research and its contribution to the field

This research adds value by synthesizing diverse perspectives on AI's impact in one place. It helps professionals and companies understand changing requirements to leverage AI collaboratively rather than fear disruption. Ongoing such assessments are crucial for successfully navigating technological progress.

6.4 Recommendation

* IT professionals should focus on developing in-demand technical skills related to AI as well as soft skills to work with technologies.

* Companies need to reskill/cross-train workers at risk and hire new skills to support AI systems through strategic workforce planning.

* Governments and educational institutions should support lifelong learning initiatives to facilitate skills transition in a changing job market.

* More research is required on regional job trends, ethics of AI integration, and skills most vital for human-AI collaboration.

* Overall, with proactive strategies, AI can be leveraged to enhance jobs rather than replace them if the right mix of human and technical capabilities is achieved. (Alekseeva et al.,2021)



References

1. Acemoglu, D., & Restrepo, P. (2020). Artificial intelligence and jobs. *Journal of Economic Perspectives*, USA.
 2. Fossen, F. M., & Sorgner, A. (2019). Digitalization of work and entry into entrepreneurship. *Journal of Business Research*, Netherlands.
 3. Smith, J., Brown, L., & Taylor, K. (2019). AI-driven automation in IT operations. *IEEE Computer Society*, USA.
 4. Piette, M., Lefebvre, P., & Keller, R. (2022). Skills transformation in the age of artificial intelligence. *International Journal of Information Management*, UK.
 5. Hunter, S., McCarthy, J., & King, R. (2019). *Descriptive research methods in technology studies*. Sage Publications, London, UK.
 6. Hall, R., Smith, P., & Jones, M. (2022). Deductive approaches in information systems research. *Information Systems Journal*, UK.
 7. Alekseeva, L., Gine, M., Samila, S., & Taska, B. (2021). The demand for AI skills in the labor market. *Journal of Labor Economics*, USA.
-