THE FUTURE WITH ARTIFICIAL INTELLIGENCE: A LITERATURE REVIEW ON THE POTENTIAL AND CHALLENGES OF AUTOMATION

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Abstract
The development of Artificial Intelligence (AI) has created both hope and concern about the future. On the one hand, AI has the potential to increase productivity, efficiency, and innovation in various sectors. On the other hand, AI-induced automation can also threaten the existence of human jobs, especially for routine and structured jobs. This article presents a literature review on the potentials and challenges of a future with AI. The literature review shows that to optimise the potential of AI, a comprehensive and proactive strategy is required. These include investments in education and training for new skills, policies that support workforce transition, strong regulatory frameworks to maintain security and privacy, and efforts to address bias and discrimination in AI systems. Close collaboration between humans and machines is also essential to maximise the added value that can be generated. With the right approach, the potential of AI can be harnessed to advance human well-being and provide solutions to global challenges. However, awareness and collective action from various stakeholders are needed for a fair and sustainable future transformation with AI.
Keywords: Artificial Intelligence, Potential and Challenges of Automation

Introduction

The development of Artificial Intelligence (AI) technology in recent decades has significantly changed the landscape of human life. Artificial Intelligence (AI) is a branch of computer science that focuses on the development of computer systems capable of performing tasks that normally require human intelligence (Dimitriadou & Lanitis, 2023) . AI encompasses a variety of approaches, techniques, and technologies that enable machines to perceive the environment, learn, adapt, and solve problems autonomously. Through complex algorithms and advanced data processing capabilities, AI systems can mimic human cognitive processes, such as reasoning, learning, problem solving, and decision making. The ultimate goal of AI is to develop systems that can perform tasks efficiently and effectively, surpass human capabilities in various domains, and evolve to be able to adapt to an ever-changing environment (Tussyadiah ., 2020)

With that, that AI has penetrated various fields, from industry, healthcare, education, to daily life. Advances in machine learning, deep learning, and natural language processing have enabled AI systems to perform tasks that previously could only be done by humans (Ng et al., 2021) .

Potential Automation with Artificial Intelligence (AI) has many potential benefits for various sectors. One of the main benefits is increased efficiency and productivity. AI

systems can perform routine and repetitive tasks more quickly and accurately than humans, increasing throughput and optimising resources. In addition, AI can also assist in complex decision-making by analysing big data and recognising patterns that are invisible to humans. This can speed up the decision-making process, especially in situations that require a quick response (Siriwardhana et al., 2021) .

Another potential of automation with AI is its ability to drive new innovation and creativity. AI systems can create unique solutions, ideas, and designs by combining existing information and knowledge in ways that have never been done before. This can pave the way for new discoveries and the development of innovative products or services (Sarker, 2022) . In addition, AI can also help in performing tasks that are dangerous or impractical for humans, such as space exploration, molecular structure analysis, or environmental monitoring in remote areas. However, on the other hand, automation with AI also poses various challenges, including the threat of job loss, privacy and data security issues, biases in AI systems, and complex ethical and social implications (Himeur et al., 2023) .

Facing an increasingly AI-integrated future requires a comprehensive understanding of the potential and emerging challenges. An in-depth literature review can provide valuable insights to prepare society, stakeholders, and policy makers for the ongoing technological transformation.

Therefore, this research aims to conduct a literature review on the potential and challenges of automation with AI, as well as offer strategies to deal with a future increasingly dominated by AI technology.

Research Methods

The study in this research uses the literature method. Literature research method, also known as literature review or literature study, is a research approach that focuses on collecting, analysing, and synthesising information available in various written sources, such as books, journal articles, research reports, and related documents. In this method, researchers conduct systematic searches to identify, evaluate, and interpret relevant findings from various sources, with the aim of obtaining a comprehensive understanding of a topic or phenomenon (Alaslan ;, 2022) (Suyitno, 2021) . This method is useful for developing theoretical frameworks, identifying gaps in previous research, and building a foundation for further research. Through critical analysis and synthesis of information, the literature research method allows researchers to present a comprehensive review of the topic under study and generate new insights that can enrich knowledge in the field under study (Adlini et al., 2022) .

Results and Discussion

Potential for Automation with AI

Automation with Artificial Intelligence (AI) has huge potential in various sectors. One of the main potentials of AI is in improving efficiency and productivity. AI systems can perform routine and repetitive tasks more quickly and accurately than humans, thereby increasing throughput and optimising resource usage. This can have a significant impact on operational efficiency in various industries, such as manufacturing, logistics, financial services, and healthcare (Tatineni & Boppana, 2021) .

In addition, AI can also help in complex decision-making. With its ability to analyse big data and recognise patterns that are invisible to humans, AI systems can provide insights and recommendations that can speed up the decision-making process, especially in situations that require a quick response. It can improve accuracy and speed in strategic, operational, and tactical decision-making (Moradi & Dass, 2022) .

Another potential of automation with AI is its ability to drive new innovation and creativity. AI systems can create unique solutions, ideas, and designs by combining existing information and knowledge in ways that have never been done before. This can pave the way for new inventions and the development of innovative products or services that can increase competitiveness and value for customers (Alam, 2021) .

In addition, AI can also help in performing tasks that are dangerous or impractical for humans. For example, AI systems can be used for space exploration, molecular structure analysis, or environmental monitoring in remote areas, where humans cannot operate effectively. This can improve security and reach areas that were previously difficult to reach (Dlamini et al., 2020) .

Overall, automation with AI has enormous potential to improve efficiency, productivity, decision-making, innovation, and reach in various sectors. However, its implementation must be carefully managed to maximise the benefits and minimise the associated risks. With proper planning and responsible development, automation with AI can be a catalyst for future economic and social progress.

Challenges of Automation with AI

One of the major challenges in automation with AI is the issue of job loss. The more routine tasks that can be taken over by AI systems, the more jobs are in danger of being replaced. This can have significant impact on society, especially on groups of workers with limited skills or less flexibility. The transition to a more automated economy requires careful planning and support to ensure that the movement of labour can be done safely and fairly (Stige et al., 2024) .

In addition, there are concerns regarding security and privacy in the use of AI. AI systems that are integrated with personal data and user activities can be vulnerable to data leakage, hacking, or manipulation that can jeopardise the security and privacy of individuals. This requires a strong regulatory framework to protect user rights and

ensure high security standards in the development and use of AI systems (Hasan, 2021)
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Another challenge is the problem of bias and discrimination that can arise in AI systems. If the data used to train an AI system contains bias, it may make unfair or discriminatory decisions or recommendations. This can negatively impact vulnerable groups and exacerbate inequalities. Responsible AI development requires efforts to address bias and ensure fairness in the system (Dwivedi et al., 2021) .

In addition, the limitations in AI capabilities are also a challenge. Although AI has developed rapidly, it still has limitations in understanding context, performing complex reasoning, and adapting to unexpected changes in situations. This may cause AI to make inappropriate decisions or actions in certain situations, thus requiring adequate human supervision (Haefner et al., 2021) .

Overall, automation with AI has great potential for progress, but it must be implemented with adequate planning and oversight. With proper management, AI can be a catalyst for better economic and social development in the future.

Future-Facing Strategies with AI

Facing the challenges posed by automation with AI requires a comprehensive and proactive strategy. One of the key strategies is to make significant investments in education and skills training. This is essential to prepare the labour force to adapt to the changes brought about by the development of AI technologies. The government, private sector and educational institutions should work together to design curricula and training programmes that match the needs of the future labour market (Sharma et al., 2020) .

In addition, there is a need for policies and programmes that support the transition of the workforce from jobs in danger of being replaced by AI to new, more innovative and impactful fields. This could include retraining schemes, financial assistance, and transfer facilities. Thus, economic transformation due to automation can be more equitable and sustainable (Kilic, 2020) .

To address concerns related to security and privacy, the development of a strong and comprehensive regulatory framework is important. Regulators need to set clear standards and guidelines regarding the collection, processing, and protection of personal data in AI systems. In addition, oversight and accountability mechanisms must be established to ensure compliance with these rules (Raisch & Krakowski, 2021) .

Addressing bias and discrimination in AI systems also requires a systematic approach. AI developers should actively test and eliminate biases in training data and apply principles of fairness and non-discrimination in algorithm design. In addition, engagement and feedback from affected groups is also important to ensure equity (Chilunjika et al., 2022) .

Finally, to overcome the limitations of AI capabilities, close collaboration between humans and machines is required. AI systems should be designed to work complementarily with human capabilities, so that they can complement and overcome each other's weaknesses. Thus, the use of AI can provide optimal added value to organisations and society.

Conclusion

The development of Artificial Intelligence (AI) opens up both opportunities and challenges for the future. On one hand, AI has the potential to increase productivity, efficiency, and innovation in various sectors. But on the other hand, AI-induced automation can also threaten the existence of human jobs, especially for routine and structured jobs.

To face the future with AI, a comprehensive and proactive strategy is needed. This includes investment in education and training for new skills, policies that support workforce transition, strong regulatory frameworks to maintain security and privacy, and efforts to address bias and discrimination in AI systems. Close collaboration between humans and machines is also essential to maximise the added value that can be generated.

With the right approach, AI's potential can be optimised to advance human well-being and provide solutions to global challenges. However, it takes awareness and collective action from various stakeholders for the future transformation with AI to be equitable and sustainable.

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