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Analysis of The Influence of Artificial Intelligence (Ai) Technology on Modern Life

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Abstract

This study examines the impact of artificial intelligence (AI) technology on modern life using a literature review approach. Data were obtained through a search on Google Scholar of relevant literature published between 2020-2025, using descriptive qualitative methods and content analysis techniques. The results show that AI has had a transformative impact on various sectors: the healthcare sector through Electronic Health Record (EHR) systems and improved patient safety; the education sector through personalized learning and virtual classes; as well as the business sector through chatbots, recommendation engines, and e-commerce logistics systems. While AI offers significant benefits in productivity and efficiency, it also poses challenges, including potential unemployment due to automation and data security risks. AI implementation requires careful regulatory considerations, with the industry needing to optimize the use of AI to increase competitiveness while addressing security and workforce impacts.

Keywords: *Digital Business; AI Intelligence; Modern Life; Digital Education; Health sector*

1. Introduction

Artificial Intelligence (AI) is one of the technological advancements that has significantly changed the commercial landscape. As we enter this new era, artificial intelligence (AI) technology will allow computers to actively participate in human decision-making and even make the best choices independently[1][2].

One way to keep the wheel of life spinning is to apply artificial intelligence (AI) to every aspect of life. In other words, artificial intelligence technology imitates human intelligence in carrying out activities or work and has the potential to replace humans in performing certain tasks. AI has emerged as an essential component of contemporary life and has brought disruptive developments that have changed the global competitive landscape [3] [4]. In the context of smart cities and mobility, artificial intelligence can be used to provide intelligent traffic control solutions to ensure citizens can travel between locations in a safe and effective manner.

Artificial Intelligence (AI) must be integrated into all sectors of society to ensure technological advancement and sustainable social development. AI technology can mimic human intelligence and has the potential to replace humans in certain tasks. Google Search is an example of advanced AI technology that continues to evolve and improve over time.

In the field of AI business, Indonesian e-commerce platforms, including Tokopedia, Shopee, and Lazada, have successfully implemented AI technology. The implementation of AI technology by Tokopedia has improved its operational intelligence and service quality. The platform's response to customer inquiries has improved significantly, making order fulfillment faster and more accurate. This improvement has a positive impact on businesses operating on the platform by improving customer satisfaction and operational efficiency.

In the healthcare sector, Artificial Intelligence has the potential to significantly increase the success rate of medical treatment. AI can substantially improve surgical procedures through the integration of robotic technology. Surgical robots allow for more precise surgical techniques, thereby reducing patient trauma and improving surgical outcomes. These technological advancements can lead to better treatment outcomes, faster patient recovery, and a lower risk of complications. The combination of AI and robotics represents a promising approach to improving overall medical treatment outcomes and the quality of patient care.

The main objective of this study was to investigate the impact of artificial intelligence (AI) technology on modern life using a literature review approach, taking into account the current context. The research focuses on the overall impact of AI and how AI can transform the

modern era while also identifying the various challenges that may arise by examining material published between 2020 and 2025. It is hoped that the conclusions of this study will provide valuable recommendations on how various industries can make the best use of AI to improve competitiveness and growth in the digital age.

2. Literature Review

According to [5][6], artificial intelligence (AI) is a field of computer science that aims to enable machines to perform activities with human-like abilities and skills. [7] [8] define artificial intelligence as the ability of machines to mimic complex human cognitive abilities. Computers are expected to be able to perform functions previously performed by humans, beyond simple calculations to more complex tasks[9].

Artificial intelligence involves learning from historical data, drawing conclusions based on accumulated experience, and adapting to changes in the environment. AI systems can automatically adjust and modify internal parameters, demonstrating operational independence [9]. Artificial intelligence has strong logical reasoning and problem-solving capabilities, using logical processes similar to human thought. However, it cannot fully mimic human cognitive abilities.

While AI offers many advantages, it faces significant limitations, including the limited application of logical reasoning and problem-solving capabilities to specific domains, reliance on natural language processing capabilities, and inherent developmental limitations [10]. These limitations highlight the ongoing challenges of achieving truly comprehensive artificial intelligence systems.

Artificial intelligence (AI) has developed rapidly and is one of the key technologies driving the transformation of various aspects of modern life. Machine learning, deep learning, and explainable AI are key areas driving AI advancements today. AI breakthroughs also include generative AI technology, which is capable of creating new content such as text, images, and music. Generative AI has become an essential tool in the creative industries, design, product simulation, and pharmaceutical research.

In addition, the development of multimodal AI, which can process different types of inputs (text, images, and audio) simultaneously, increases the flexibility and accuracy of AI applications in the fields of health, social media, and rehabilitation therapy [11][12].

The development of artificial intelligence (AI) technology has brought significant changes to various aspects of modern life. AI, as a branch of computer science that focuses on developing intelligent machines capable of mimicking human capabilities, is now widely used in fields such as health, education, the workplace, and social interaction.

AI has an important role in the healthcare field because it helps improve the quality of medical services. By analyzing data quickly and accurately, AI helps medical personnel diagnose diseases more effectively and design treatments tailored to each patient's unique condition. In addition, AI technology facilitates telemedicine and the use of robotics in surgery, thereby improving access to healthcare and efficiency.

AI in education facilitates adaptive and individually tailored learning systems. By adapting learning materials according to the needs and abilities of each student, AI makes the learning process more effective and engaging. Additionally, administrative tasks automated by AI allow teachers to focus more on student interaction and development [13].

AI has a significant impact on the workplace and the economy. AI-powered automation enables businesses to increase productivity by minimizing routine and repetitive tasks. However, this poses challenges in the form of changes in the structure of the workforce and the need for individuals to develop new skills. In addition, AI's ability to analyze large datasets accelerates and improves the accuracy of business decisions, thereby increasing innovation and competitiveness of companies.

In social and personal life, AI comes in the form of virtual assistants and recommendation systems that help with everyday tasks such as scheduling, information retrieval, and personalized entertainment. Social media and digital entertainment companies are leveraging AI to serve relevant content to users while automatically managing content moderation[14][15].

3. Research Method

The method used in this study is qualitative descriptive research that focuses on literature studies with the aim of providing a detailed picture of the observed phenomenon based on the available data. Literature studies allow researchers to gather broad insights from a variety of pre-existing sources, including scientific journals, books, articles, and other publications. Researchers collect data by recording information through what researchers observe according to [16]. The source of this research data was obtained through a Google Scholar search for literature that is relevant to the problem being researched. Research with this method will be carried out clearly and in a plan to find a way to solve the problem in this research. This study uses several stages, namely the stage of the researcher recording important parts related to the focus of the study. Data Provision by Analyzing Data Using Content Analysis.

4. Results and Discussion

Artificial intelligence (AI) has become a major topic of discussion due to its potential to transform human lives in a variety of ways. The field of computer science known as artificial intelligence aims to develop computers and systems capable of performing tasks that would normally require human intelligence. In scientific terms, artificial intelligence refers to intelligence embedded in technological systems, which allows machines to perform functions that are normally performed by humans. AI seeks to create autonomous devices that can learn and adapt using predefined algorithms. The term 'artificial intelligence' was coined by John McCarthy, a professor at the Massachusetts Institute of Technology, during the Dartmouth AI Researchers Conference in 1956.

Although AI has its advantages and disadvantages, research by Teng et al. shows that medical students generally accept its application. Despite concerns about the potential negative impact on their future careers, medical students are willing to support the integration of AI and advocate for discussions about AI technology to be included in their curriculum, provided that the primary goal remains to provide more effective and efficient patient care [17]. The importance of AI in Electronic Health Records (EHRs) is then explained, although the text does not explain in detail. Information systems, especially EHRs, can benefit from the acquisition of this technology, but security precautions must also be taken to prevent data leaks.

AI can be used as a tool to improve patient safety procedures. There is a significant opportunity to use AI and new data sources to reduce the frequency of injuries. The development of more accurate patient safety systems is expected to reduce the likelihood of adverse events and even identify potential hazards before they occur, thus allowing for the implementation of appropriate precautions. Practitioners must keep up with rapid technological developments to stay informed [18][19]. There are three perspectives in the field of education: students or learners who face learning challenges, teachers or instructors who face teaching challenges, and managers and administrators at all levels who face system-level challenges. One of the key benefits of integrating AI into Indonesian education is its potential to offer a customized learning experience. AI also has the potential to change student evaluations in Indonesian classrooms. The development of virtual classrooms is another area where AI can make a great contribution to Indonesian education. Through AI-powered virtual classrooms, teachers and students can communicate directly even though they are physically separated, as the system uses artificial intelligence to mimic the atmosphere of a real classroom. Furthermore, AI has the potential to have a significant impact on curriculum development in Indonesia.

Economic sectors can also be affected by AI because the core of the contemporary economy involves complex decision-making under conditions of uncertainty. We all face complex and interconnected problems simultaneously and constantly. Artificial intelligence systems can learn through numerical models or apply symbolic rules, while also adjusting their behavior by analyzing how their previous actions affected its environment. Artificial intelligence is changing the economic cycle, and Stiglitz argues that the replacement of human workers by efficiency-seeking capital owners is the cause of rising unemployment and reduced innovation.

The features of chatbots, recommendation engines, and logistics systems in the e-commerce sector show how Artificial Intelligence (AI) is applied in the business and economic fields. The availability of AI makes it easy for online shoppers to choose products that suit their needs and preferences. Similarly, e-commerce companies can leverage AI technology to improve their offerings, ultimately increasing customer satisfaction levels. However, artificial intelligence (AI) has the potential to produce results that can be detrimental to companies. In some cases, the financial industry has experienced problems due to the lack of human emotional intelligence and cognitive flexibility in automation, as well as non-compliant activities (such as non-compliant securities orders). The manufacturing sector can also experience inflexibility in the scale of assembly operations in the automotive industry and in interactions with customers (such as rejecting customer advice and purchasing decisions based on data analysis at the expense of product quality or compliance). Despite this, AI has become a crucial component in the corporate sector and is now integrated into all business operations.

5. Conclusion

According to this study, artificial intelligence (AI) has had a significant and transformative impact on various aspects of contemporary society, including the health, education, and business sectors. In healthcare, AI improves patient safety through predictive systems and Electronic Health Records (EHRs). In the field of education, AI facilitates the creation of virtual classrooms, enables personalized instruction, and improves curriculum management and evaluation processes. Meanwhile, the business and economic sectors have leveraged AI to increase productivity and consumer satisfaction through chatbots, recommendation engines, and logistics systems. However, AI implementation also presents significant challenges, including potential unemployment caused by automation, data security risks, and inflexibility of systems that are purely machine-based. As a result, the application of AI must be supported by comprehensive regulations and ethical frameworks that take into account human values and societal needs. Therefore, when AI is developed and implemented responsibly and sustainably, it can be optimally used to improve the industry's competitiveness, operational efficiency, and overall quality of life.

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