


Chapter 14


Revolutionary Impact of Artificial Intelligence on Society and Its Challenges and Opportunities

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ABSTRACT

AI has impacted countless aspects of our life by providing inventive remedies to solve global problems like personal healthcare and climate change. With the assistance of this powerful tool we can process data, evaluate information, and make better decisions with the use of analyzed information. Variety of commercial sectors, such as education, medical care, financial services, entertainment, communication and transportation benefit immensely from its growing popularity, but it also brings up major ethical and social concerns such as loss of jobs, data hacking, unfair computational techniques, data hacking, and privacy and security threats. This chapter examines how artificial intelligence (AI) is affecting society as a whole, highlighting both its exciting possibilities and its significant drawbacks.

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INTRODUCTION

Artificial Intelligence (AI), which used to be mostly the topic of university research and science fiction, has now become a standard part of our daily lives and is instrumental in numerous crucial systems across the globe. The term Artificial Intelligence was coined by John McCarthy ” at the Dartmouth Conference in 1956, and it is widely regarded as the starting point of AI as a serious area of research. AI has since experienced times of great optimism, significant investment, and periods of slow growth and declining interest. It has become an influential technology with broad applications in many areas. The rapid increase in computing capabilities and the massive increase in data available have assisted Artificial Intelligence in developing dramatically from a limited set of tasks to a broad set of applications (Kaur & Kour, 2025).

Machine learning (ML), natural language processing (NLP), deep learning, robotics, and computer vision are some of the technologies that allow the machine to learn from experience, adjust to new and evolving conditions, and make choices independently. The capabilities, like comprehending speech or identifying faces in photographs, make AI distinctive. It can potentially revolutionize social structures, human behavior, and economic systems. Artificial Intelligence assists in finding solutions to global issues, such as climate change prediction and personalized healthcare. It assists individuals in making informed decisions based on facts by processing large volumes of data, identifying patterns, and predicting outcomes (Kaur & Kour, 2025).

AI has become one of humanity's most groundbreaking and influential innovations ever developed. Over the past few decades, it has expanded from a theoretical concept into a powerful force influencing society by actively shaping industries. Its influence is widespread in many areas, such as healthcare, education, finance, transportation, governance, and communication. It changes how businesses function and the fundamentals of daily human life (Brynjolfsson & McAfee, 2014). The idea of artificial Intelligence has existed since ancient times, when mechanical creatures with reason or consciousness were the subject of mythology and stories (Russell & Norvig, 2021). However, in the 20th century, the formal foundations of AI as a scientific discipline were established. British mathematician and logician Alan Turing posed the crucial question, “Can machines think?” in his seminal 1950 paper *Computing Machinery and Intelligence*. In the same paper, Turing also introduced the Turing Test, which evaluates a machine's ability to exhibit intelligent behavior indistinguishable from a human's (Turing, 1950). The Dartmouth Conference in 1956, which is frequently seen as the beginning of artificial Intelligence as a recognized field of study, came next. The conference was organized to examine how machines could resemble some characteristics of human intellect (McCarthy et al., 2006).

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