

# Impact of Ai on Different Sectors and Future of Work

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## ABSTRACT-

Artificial Intelligence is reshaping various sectors, including banking, healthcare, manufacturing, transportation, and education. The future of AI holds promising prospects, from AI-driven vehicles to personalized entertainment. AI's potential for societal benefit is evident, and it continues to evolve and impact multiple aspects of human life.

Received 15 Apr., 2024; Revised 25 Apr., 2024; Accepted 27 Apr., 2024 © The author(s) 2024.

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## I. Introduction-

Artificial Intelligence has captured the entire world in its shackles. As Techopedia states, Artificial Intelligence is a \$136.55 billion dollars industry already [1]. But to begin with we must know what Artificial Intelligence actually is [2]. Artificial Intelligence is the simulation of human intelligence processes by machines especially computer systems.

Despite the term Artificial Intelligence has been used for more than a millennium the actual AI was just introduced in the 1950's when finally, Alan Turing a British Polymath created AI. In today's world AI is ongoing and increasing exponentially with a rate of 12.9% increment every year. In the field of AI, Europe is the most advanced continent [3]. India is the 3<sup>rd</sup> largest country just behind the USA and China. Artificial intelligence is revolutionizing business by boosting productivity, enhancing workflow management, and identifying unusual patterns. It improves efficiency, reduces errors, and is expected to be used in self-driving cars, weather forecasting, and health diagnosis.



[4]

## Trends in AI -:

AI has affected many industries like Banking and Finance, Healthcare, Education etc. Some of these trends are discussed below [5]-

### 1) Banking and Finance

Banking and financial institutions use NLP applications for customer management and document search. For example, HDFC and ICICI bank utilizes NLP for robust customer engagement via chatbots. This helps the banking professionals to understand the client without them being physically present.

### 2) Healthcare

The healthcare sector can save time spent on clinical documentation, speech recognition, and interpreting clinical data with the help of NLP solutions. Computer-aided coding (CAC) is another area where NLP is significantly used in the healthcare industry. It comes in handy when certain patients need personalized health solutions. IBM Watson's NLP capabilities, IBM's AI engine, were used for healthcare management at the Memorial Sloan-Kettering Cancer Center.



[6]

### 3) Manufacturing

The manufacturing industry is embracing this technology by providing solutions like task automation, quality control (by scanning data to identify patterns), maintenance & repair (by analyzing sensor and equipment data), and predictive maintenance. For example, the European Union (EU) plans to incorporate NLP in studying building information to enhance the efficiency and productivity of the construction industry.

Other real-world examples of NLP in action include Chatbots. The chatbot market is estimated to reach from \$40.9 million in 2018 to \$454.8 million by 2027. Apart from chatbots, Alexa, Google Assistant, and Siri are the iconic names in the world of NLP.

### 4) Transportation

The transportation industry is embracing technological advancements, with computer vision taking the forefront. Pedestrian detection, self-driving cars, and road condition monitoring are the finest examples of their implementation. Autonomous driving technology heavily relies on this technology. Companies like Tesla, Toyota, etc., actively work on robust computer vision mechanisms that enable self-driving systems to function properly.



### 5) Education

AI has the potential to revolutionize education by providing innovative solutions to enhance teaching and learning experiences [7]. Current applications include intelligent tutoring systems, augmented reality and virtual reality, chatbots, and virtual assistants. AI algorithms analyze student data to provide personalized feedback, tailor content to individual needs, and support self-paced learning. AI can also automate administrative processes, freeing up time for teachers to focus on instruction and student support.

**Future of AI in different sectors:-**

Artificial intelligence (AI) is a significant technological advancement that is rapidly gaining applications across various industries [8]. Its main applications include transportation, healthcare, marketing, finance, and entertainment. Transportation uses AI solutions to improve efficiency, find shorter routes, minimize waiting times, and ensure fleet drivers are kept busy. By 2030, AI-driven cars, trucks, trains, and buses will become a normal thing, saving companies money and reducing human errors.

1) Healthcare uses AI to automate repetitive tasks, improve drug development, and optimize the supply chain. Wearables like Apple Watches and FitBit bands can also help improve disease prevention and diagnosis by generating insights from user data.

2) Marketing uses AI to track consumer habits, make predictions, and improve content creation. AI helps marketers understand customer preferences and shape their marketing efforts, including content creation, targeting, and ad strategy creation. AI-powered chatbots are changing customer support by providing better support and improving relationships affordably and efficiently.

3) Financial services use AI to make accurate predictions and make money by trading. AI-driven robotic advisers can help thousands of customers with one-time payments and predict future outcomes. AI-based trading allows financial experts to stay ahead of market patterns and anomalies, making data-based decisions useful for large investments and selling stocks.

4) Entertainment uses AI to make the industry feel more personalized and engaging. Online streaming services like YouTube and Netflix use AI to learn about users' preferences, suggesting similar content in the future. This has led to almost all entertainment channels leveraging AI to increase efficiency and sales.

5) In the digital era, education has evolved, allowing students to access research and learning quickly and efficiently. Young children aged 8-15 use smartphones and apps for educational projects, while digital resources like books, audiobooks, and videos provide in-depth knowledge. Collaboration tools like wikis, Google Docs, and AI tools enhance learning. Many schools in the USA have shifted from traditional methods to using technology, with AI tools like NLP and machine learning algorithms, ChatGPT, and AI Text Generation programs being used to enhance learning skills.



[9]

**II. Conclusion :-**

Thus, we have discussed about AI, its impact on different sectors and its future on the same sectors. We have discussed some of trends, its impacts etc. The ultimate goal of AI is to replace majority of the human workforce and work in their place. Surely, AI will develop rapidly and change the scenario of the complete world. Now it is the responsibility of the software engineers to develop this field for the benefit of the society.

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