

The Role Of Big Data In Modern Industries

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This paper explores the function, significance, and benefits of big data in modern industries. It highlights how data analysis could alter decision-making, operational effectiveness, and personalized services. More over, the introduction of Big Data's function in the modern world.

Big Data refers to extremely large and complex data that cannot be processed by traditional data processing tools. It is a combination of structured, semi-structured, and unstructured data that organizations collect and analyze. (*Hashemi-Pour et al., 2024*) In addition, Big data has been growing steadily in the modern era as recent technical advancements have significantly lowered the cost of compute and storage, making it easier and cheaper than ever to store more data.

Furthermore, big data is used in various industries, including healthcare, finance and banking, telecommunications, manufacturing, and education. Businesses and organizations often incorporate it into systems to improve customer service, develop personalized marketing campaigns, and take other actions that boost sales and profits. It is commonly used in machine learning, predictive modeling, and other advanced analytics to solve data that is too large for traditional data processing systems to handle and make informed decisions. (*Big data defined: Examples and benefits | google cloud 2024*)

In finance, big data is a revolutionary tool, as the exponential growth of data generation is fundamentally transforming the way financial industries and individual businesses operate. For instance, in stock markets, big data enables computer algorithms to help investors make the most optimal and accurate investment decisions to maximize profits and also makes fewer manual errors due to behavioral biases compared to human beings. Furthermore, big data significantly mitigates operational risks, drastically reduces fraud and scams, and diminishes information asymmetry problems. For that reason, most banks use big data to identify fraudulent activities and prevent actions like credit card frauds. (*corporatefinanceinstitute* 2024)

Simultaneously, in healthcare industries, big data collects, analyzes, and leverages data. Several advantages of the usage of big data in this specific industry have been shown, including establishing a full, 360-degree perspective of consumers, patients, and physicians; enhancing the effectiveness and personalization of care through detailed patient profiles; and maximizing hospital growth through enhanced care quality and efficiency. Moreover, three major changes in the healthcare industry: the great amount of data accessible, rising healthcare expenses, and the emphasis on consumerism further increased the significance of big data. (*WebMB Ignite*, 2023)

While browsing the internet, I also came across a lot of applications and websites that use big data to promote content for me. For example, when I watch videos on "tiktok," I always see more promotions for the videos I enjoy watching and less for the videos I don't. This type of algorithm boosted my desire to stay on the application and enhanced my experience. Hence, I think big data will play a huge role in the development of the internet in the future, due to its efficiency and accuracy.

Big Data has become the cornerstone of technological innovation across various industries by transforming the ways businesses operate, enhancing users' experiences, and

increasing efficiency. The role of it will most definitely expand further, addressing current challenges and creating new opportunities.

Citations

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