

Artificial Intelligence and Big Data using Techniques

Anju, Research Scholar (CSE), Monard University, Hapur (U.P.)

Abstract

Artificial Intelligence (AI) and Big Data have emerged as transformative technologies that are reshaping the way organizations collect, process, analyze, and utilize information. The integration of AI techniques with Big Data enables organizations to extract meaningful patterns, identify trends, automate complex tasks, and support effective decision-making. This study focuses on the various techniques used in Artificial Intelligence and Big Data analytics for managing large, complex, and rapidly generated datasets. Machine learning, deep learning, data mining, natural language processing, predictive analytics, and neural networks are among the major AI techniques used to analyze and interpret Big Data. These techniques can process large volumes of structured and unstructured information and provide valuable insights for different applications. Big Data technologies provide the infrastructure required for storing and processing massive datasets, while AI techniques enhance the ability to discover hidden relationships and generate intelligent predictions. The combined use of these technologies has applications in healthcare, finance, education, manufacturing, transportation, cybersecurity, and e-commerce. However, challenges such as data privacy, security, data quality, computational requirements, and algorithmic bias need to be addressed for effective implementation. Overall, the integration of AI and Big Data provides a powerful approach for improving analytical capabilities, automation, prediction, and decision-making. Continued advancements in these fields are expected to create new opportunities for intelligent and data-driven applications across various sectors.

Keywords: Artificial Intelligence, Big Data, Machine Learning, Deep Learning, Data Mining, Predictive Analytics, Neural Networks, Natural Language Processing, Data Analytics.

