Chapter 10
Big Data Analytics in Cloud Platform

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ABSTRACT

Big data computing in clouds is a new paradigm for next-generation analytics development. It enables large-scale data organizations to share and explore large quantities of ever-increasing data types using cloud computing technology as a back-end. Knowledge exploration and decision-making from this rapidly increasing volume of data encourage data organization, access, and timely processing, an evolving trend known as big data computing. This modern paradigm incorporates large-scale computing, new data-intensive techniques, and mathematical models to create data analytics for intrinsic information extraction. Cloud computing emerged as a service-oriented computing model to deliver infrastructure, platform, and applications as services from the providers to the consumers meeting the QoS parameters by enabling the archival and processing of large volumes of rapidly growing data faster economy models.

1. INTRODUCTION

Nowadays, most researchers focus on implementing machine learning, statistical, and other significant data optimization approaches for knowledge extraction and data mining. Data mining is one of the increasing computing paradigms in every data-generating industry day by day. Data mining is used to mine user-required data patterns using various algorithms, methods, and techniques from a large volume of data. Furthermore, the data format, quantity, forms, and veracity are different, and the mining pro-

cess's efficiency is reduced. The data pattern is essential to study these parameters input data, discover information, and extract it. The Integration of Knowledge Discovery and Knowledge Extraction is the primary process in big data analytics. Knowledge provides the learned input data with physical and logical information. The information derived from the broad dataset helps to mine the query pattern accurately.

In various real-time applications, Big data analytics use to analyze the data to enhance mining accuracy. Big data management becomes a crucial job as the significant data behavior is continuously changing in terms of volume and variety, degrading the data mining process efficiency. Information extraction is used as a pre-processing function to generate knowledge from structured and unstructured data to deliver the data in a machine-comprehensible, readable, and interpretable format, thereby enhancing the data mining process.

Currently, people are sharing and communicating over the internet without face-to-face interactions. They post and share their knowledge, opinion, and experience on social media sites massively. Twitter, Facebook, WhatsApp, LinkedIn, and Instagram are the popular social networks through which users post their opinions, experiences, marketing, education, and business information. Different types of data have been shared on social websites over the past 15 years, including travel and tourism. People who travel worldwide share their experiences through comments, pictures, location, merits, demerits, etc. Using the site, distance, path, famousness, and others allows other people to travel better. It increases the travelers' happiness and makes them happy, which raises a country's money flow. Therefore, big data analytics is applied to the big data concept to provide useful new traveler information.

The work's main objectives are to design and implement a novel framework by integrating knowledge discovery, data analytics, knowledge extraction, and data mining for one of the world-connecting applications as Travel big data analytics. It is one of the socio-economic fields affecting the economic status of the Government. Therefore, by providing useful guidance to tourists abroad, all countries focus on improving the tourism industry. This study analyzes the data from the social network and offers better online advice over the internet. They use portable devices such as mobile devices, tabs, laptops, and other gadgets to reach and support travelers.

This section presents various earlier research methods and algorithms used for knowledge discovery, knowledge extraction, and big data analytics with pros and cons. It uses to obtain the research problem and arrive at an idea to design and implement the research methodology. For example,

1.1 BACKGROUND DETAILS

AmirGandomi and MurtazaHaider (2015) present detailed information about big data analytics, and it collects from various developers and industry practitioners. The main objective was to discuss big data analytics over structured and unstructured data. The discussion shows that the heterogeneity of data, extensive and noise, needs to be handled before data processing.

Artola et al. (2015) designed and experimented with a structured search engine to extract user-required patterns from big tourism data. Based on the user query input, the real-time data is collected and integrated for big data analytics.

Nguyen et al. (2016) Proposed using knowledge-based locations to acquire knowledge by searching and browsing extensive collections of general and cultural heritage databases using user interaction through SNS. Researchers have shown that given particular geolocation, current social media data

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