

Chapter 72

Recent Development in Big Data Analytics: Research Perspective

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ABSTRACT

This chapter describes how big data consist of an extreme volume of data, velocity, and more complex variable data that demands current technology changes in capturing, storage, distribution, management, analysis data. Business facing more struggles in identifying the pragmatic approach in capturing the data about customer, products, and services. Usage of big data mainly with the analytical method, but it specifically compares with features of an analytical method based on unstructured data contributed around 95% of big data. The analytical approach depends on heterogeneous data and unstructured data's like text, audio, video format. It demands new effective tool for predictive analysis for big data with the unstructured format. This chapter describes explanation of big data and characteristics of big data compress of Volume, Velocity, Variety, Variability, and Value. Recent trends in the development of big data that applies in real time application perspectives like health care agriculture, education etc.

INTRODUCTION

Big data is a current trend and future research area in today's scenario. Savitz and Gartner (2012) point out some ten strategic technologies and in 2013 describe the next five years of critical technologies in big data. Big data is revolutionary in most domains like Businesses, specific research, Public, and Management. The standard definition of big data compresses from 3Vs to 4Vs. Doug Laney, (2001) describes only 3Vs such as Volume, Velocity, and Variety it provides some dynamic characteristics of big data. The term Volume refers to more datasets, Velocity specific in and out about speed of data, and

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Variety relates to types of data sources. Zikopoulos & Eaton (2011) enhance the characteristics of big data with 4vs: Value, Variability and Virtual. More Commonly, big Data refers to large datasets with various types, which are difficult to process in a traditional data processing infrastructure. Garter et al. (2012) acquired and analyzed the data in more detail, explaining that big data has these characteristics: large volume, high velocity, and wide variety.

Common datasets are called big data when it can perform in capturing, curation, and visualization with current technologies. Modern use of intelligent data analysis techniques combined with existing domains, such as Artificial intelligence (AI) and Machine Learning (ML), offer the capability to process a significant amount of unstructured data that is generated day by day to extract valuable, actionable knowledge. It also provides more opportunity for many researchers to make use of this data for improving their valuable expertise and insights (Hilbert 2013). As such, big data development is essential in accessing and gaining data related to the user; it provides more exclusive data from the government in the form of a document. Moreover, there has been new growth in something called open access or open data, which consists of both public and private data. In public data, shared data from different public entries need to be converted to a machine-readable format or structure to further big data development. As stated in Chatterjee & Finger's (2014) current report analysis by Mckinsey Global Institute, open data calculates up to \$3 trillion. The Report analysis is an essential part of public data with several specific fields: education, health, consumer product, transportation, electricity, oil, gas, and consumer finance.

The primary goal of this chapter is to answers the necessary questions: what is the use of big data technology in the emerging, developing world? Specifically, analysis of the application of big data techniques helps to improve and point out even the most delicate improvement areas that offer the advantage of using big data technologies. Doshi et al. (2013), Mayer-Schönberger, & Cukier (2013) mostly depend on consistency given the tremendous influence of big data with some other facts in current society. Big data is the sizeable essential domain of human improvement. We ask some questions like: A) How can we use complete data that can explain and allow most companies and organizations to improve? B) What are the specific fields that can benefit from big data? C) What are some well-known techniques used in big data analytics that can further develop and improve big data?

BIG DATA DEVELOPMENT AREAS

This section describes the primary development field to which big data applies. We describe the role of big data for development and explored with natural disasters and political crises. Additionally, humanitarians show how big data is used in fields like agriculture, healthcare, education, etc. We also examine the tabulation for determining big data projects with various development areas.

Humanitarian Emergencies

In this section, we use a case study to present the potential role of big data concerning emergencies and natural disasters. We also describe various issues with the acquisition, storage, and sharing of the essential data for emergency situations.

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