Chapter 73
Big Data and IoT Applications in Real Life Environment

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ABSTRACT

Big data and the Internet of Things (IoT) are the recent innovations in this era of smart world. Both of these technologies are proving very beneficial for today's fast-moving lifestyle. Both technologies are connected to each other and used together in many real-world applications. Big data and IoT have their uses and applications in almost every area from homes to industries, from agriculture to manufacturing, from transportation to warehousing, from food industries to entertainment industry, even from our shoe to robotics. This chapter discusses various applications of big data and IoT in detail and also discusses how both the technologies are affecting our daily life and how it can make things better.

INTRODUCTION

Nowadays human life is very much affected by scientific advancement; internet of things has a great role in making human life more comfortable and has potentials to provide a smart environment around by establishing communication between man, machines & objects or machine to machine transmission/communication. IoT symbolizes a system which comprises things in the material world where sensors dedicated to these IoT things that are connected to the internet in a network structure whether wired or wireless. IoT sensors can be connected by using various technologies like GPRS, RFID, Wi-Fi, GSM, Bluetooth, ZigBee, 3G, and LTE. IoT-empowered devices will share the info about the situation of the surroundings with persons, systems & other machines. IoT makes the world smarter in each aspect; IoT will lead to smart cities, smart homes, smart healthcare, smart transportation smart buildings, smart

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energy management and smart waste management. Millions of dollars have been spending on research of IoT, worldwide.

In this era of digitization, the use of big data is not only to store massive amount of heterogeneous data but also it includes the analysis of the data which is commonly known as big data analytics. Big data can be beneficial for an organization in such a way that big data analytics uses different analytical and mining tool to extract useful information from the huge data which can be very useful for the progress of the organization (Mohsen et al, 2017; Kwon et al, 2014). In many domains big data has brought a tremendous change. The major goal of big data applications is to analyze the large data with the various tools and to help companies or organizations to predict what can happen in future and then take decisions according to the situations. Along with the private sectors public sectors are also benefited with big data. Big data applications store data by servers, internet click streams, social media mobile phone records, sensors, etc. Nowadays various domains are hiring big data analytics to analyze the big data to know the hidden pattern, risks, relations between data, customer choice or priority and much other business information.

IoT and big data are connected with each other. Even both the technologies have almost same applications. While we are using IoT devices and network everywhere in future world, the data that is produced by these sensors is heterogeneous big-data files required to be stored to process in future to predict potential solutions to modern world problems.

Government has also embraced the arena of "Big Data" and "Internet of Things" as a National Digital Mission to attain their aim to be a prominent country in the field of hyper connected domain with a promotional scheme of strengthening the affordability in software sensor devices; also providing training to produce specialists that will internalize security for IoT services and big data analytics so that data can be analyzed.

Some major applications of IoT and big data are explained in detail in this chapter that will help to learn the use of IoT and big data in real world.

Figure 1. Big Data applications