Chapter 71
Big Data Classification and Internet of Things in Healthcare

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ABSTRACT

Every single day, a massive amount of data is generated by different medical data sources. Processing this wealth of data is indeed a daunting task, and it forces us to adopt smart and scalable computational strategies, including machine intelligence, big data analytics, and data classification. The authors can use the Big Data analysis for effective decision making in healthcare domain using the existing machine learning algorithms with some modification to it. The fundamental purpose of this article is to summarize the role of Big Data analysis in healthcare, and to provide a comprehensive analysis of the various techniques involved in mining big data. This article provides an overview of Big Data, applicability of it in healthcare, some of the work in progress and a future works. Therefore, in this article, the use of machine learning techniques is proposed for real-time diabetic patient data analysis from IoT devices and gateways.

## 1. INTRODUCTION

The Internet of Things (IoT) is a computing concept that describes a future where every day physical objects will be connected to the Internet and be able to identify themselves to other devices. This paper presents a review of literature on the subject of the IoT technologies and their applications domains and the futuristic research areas. Several research studies have addressed and developed this topic with detailed studies synthesis about the fields of application of internet of things, and general visions (Gubbi, Buyya, Marusic, & Palaniswami, 2013). Other papers summarize the applications of IoT in the healthcare industry and identify the intelligentization trend and directions of future research in this field (Yin, 2016).

Over the last two decades, we have seen an enormous amount of growth in data. The data has been doubling every two years since 2011. As a result of this technological revolution, big data is becoming an important issue in the sciences, governments, and enterprises increasingly. Big Data is a data set, which is difficult to capture, store, filter, share, analyze and visualize on it with current technologies (Young, Min, Wenixa, & Depeng, 2015).

By understanding, processing and utilizing the knowledge and information hidden in Big Data concerning health issues and disease trends in certain population, we can find solutions, with which, we can live longer and healthier (Lloret, Parra, Taha, & Tomás, 2017, 2017). Big data analytics improve health care insights in many aspects shown in Figure 1.

Figure 1. Benefits in healthcare
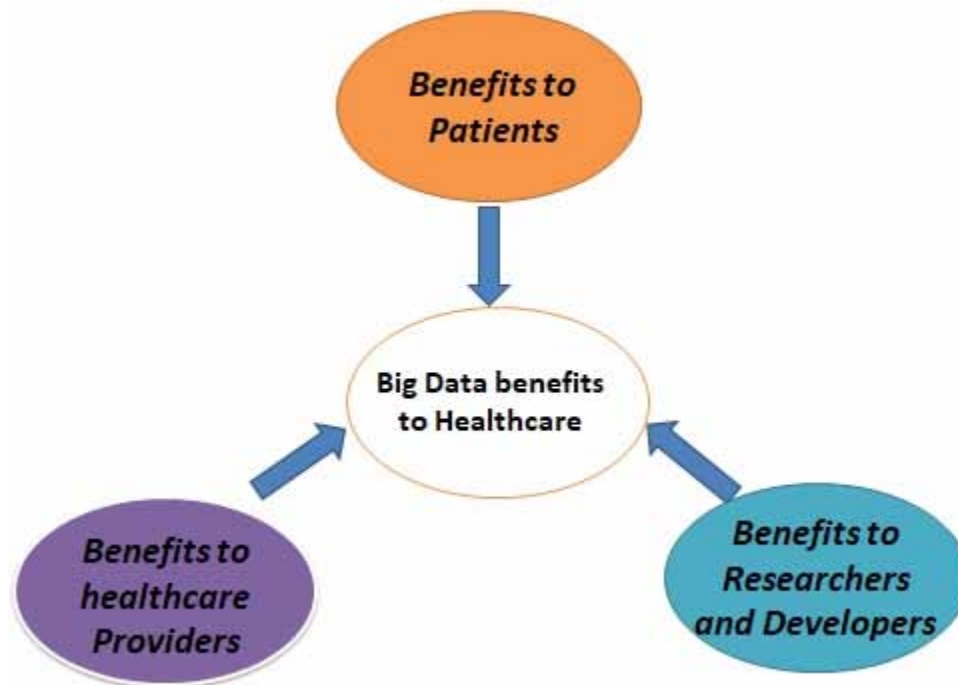
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