Big Data Analytics For Hospital

LITERATURE SURVEY

The main aim of this paper is to provide a deep analysis on the research field of healthcare data analytics. This paper is analyzing the previous studies and works in this research area, as well as highlighting some of guidelines and gaps. This study has used seven popular databases and selected most relevant papers, in order to conduct this paper. The paper has listed some data analytics tools and techniques that have been used to improve healthcare performance in many areas such as: medical operations, reports, decision making, and prediction and prevention system. Moreover, the systematic review has showed an interesting demographic of fields of publication, research approaches, as well as outlined some of the possible reasons and issues associated with healthcare data analytics, based on geographical distribution theme[1].

This part deals with the advanced analytical methods focused on healthcare. This includes the clinical prediction models, temporal data mining methods, and visual analytics. Integrating heterogeneous data such as clinical and genomic data is essential for improving the predictive power of the data that will also be discussed. Information retrieval techniques that can enhance the quality of biomedical search will be presented. Data privacy is an extremely important concern in healthcare. Privacy-preserving data publishing techniques will therefore be presented.[2].

One of the promises of the growing critical mass of clinical data accumulating in electronic health record (EHR) systems is secondary use (or re-use) of the data for other purposes, such as quality improvement and clinical research.1 The growth of such data has increased dramatically in recent years due to incentives for EHR adoption in the US funded by the Health Information Technology for Economic and Clinical Health (HITECH) Act.2-3 In the meantime, there has also seen substantial growth in other kinds of health-related data, most notably through efforts to sequence genomes and other biological structures and functions.4 The analysis of this data is usually called analytics (or data analytics). This chapter will define the terminology of this field, provide an overview of its promise, describe what work has been accomplished, and list the challenges and opportunities going forward[3].

Clinicians, healthcare providers-suppliers, policy makers and patients are experiencing exciting opportunities in light of new information deriving from the analysis of big data sets, a capability that has emerged in the last decades. Due to

the rapid increase of publications in the healthcare industry, we have conducted a structured review regarding healthcare big data analytics. With reference to the resource-based view theory we focus on how big data resources are utilised to create organization values/capabilities, and through content analysis of the selected publications we discuss: the classification of big data types related to healthcare, the associate analysis techniques, the created value for stakeholders, the platforms and tools for handling big health data and future aspects in the field. We present a number of pragmatic examples to show how the advances in healthcare were made possible. We believe that the findings of this review are stimulating and provide valuable information to practitioners, policy makers and researchers while presenting them with certain paths for future research[4].

In this modern techno-world, the term data is unavoidable and certainly, nothing is possible without its usage. The trends about how to analyse the data are the need of the hour. Data analytics is becoming a future escalating tool of all industries including medicine, robotics, etc. This article briefly explains how data analytics is used in healthcare systems. Health care is the process of maintaining and improving the health of an individual by preventing, diagnosing and treating the diseases, illness and other physical and mental imbalances in people. Data analytics is classified into four types and they are descriptive, diagnostic, predictive and prescriptive analysis. Health care makes use of prescriptive analysis to arrive at the best results and make better decisions. Big data plays a major role in data analytics. It helps the data analysts to collect data from the patients and store them efficiently. After the completion of this whole article, the reader will be able to get the collective idea about health care analytics.[5]

Reference:

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Charu C.Aggarwal(Watson Research Center)

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4) Panagiota Galetsia , Korina Katsaliakia , Sameer Kumarb,∗ a School of Economics, Business Administration & Legal Studies, International Hellenic University, 14th km Thessaloniki-N. Moudania, Thessaloniki, 57001, Greece b Opus College of Business, University of St. Thomas Minneapolis Campus, 1000 LaSalle Avenue, Schulze Hall 435, Minneapolis, MN 55403, USA

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