Analytics for Hospitals' Health-Care Data

Introduction

The era of big data has opened the door in the healthcare industry as a response to the digitization of healthcare data. Over the past decade, the exponential growth in data has introduced a new domain called big data within the field of information technology and data science.Data analytics in clinicals works which helps to reduce patient wait times through improved scheduling and staffing, give patients more options when scheduling appointments and receiving treatment, and reduce readmission rates by using population health data to predict which patients are at greatest risk. We can collect all the data we want, but it doesn't do any good if we don't know what to do with that information. We need a centralized, systematic way of collecting, storing and analyzing data so we can use it to our advantage.

Literature survey

The healthcare sector is widely considered as one of the most important industries in information technology (Wager 2005).More and more, information technology has been considered as a practice that facilitates healthcare performance through using data and information efficiently within the healthcare sectors.Therefore, Wager et al (2005) said that in order to understand the relation between information technologies and healthcare,we first need to understand what are the technologies used in healthcare.Information technology functions have developed over the last few years not only as a technology services provider, but also as a strategic provider that develops and integrates industries' infrastructures to facilitate and ensure quality of service (LeRouge et al 2007)

Objective

The main aim of this paper is to provide a deep analysis on the research field of healthcare data analytics., as well as highlighting some of guidelines and gaps in previous studies. This study has focused on searching relevant papers about healthcare analytics by searching in seven popular databases such as google scholar and springer using specific keywords, in order to understand the healthcare topic and conduct our literature review. 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

Reference

[1] Shmueli, G., & Koppius, O. (2011), 'Predictive analytics in information systems research', MIS Quarterly, vol. 35, no. 3, pp. 553-572.

[2] Walker, M., Fonda, SJ., Salkind, S. & Vigersky, R. 2012, 'Advantages and disadvantages of real-time continues glucose monitoring in people with type 2 diabetes', Blood glucose monitoring, vol. 8, no. 1, p. 25.

[3] Murphy, K. 2013, 'What about healthcare must change for analytics to flourish?', Ehrintelligence, 29 August, https://ehrintelligence.com/2013/08/29/what-about-healthcare-must-change-for-analytics-to-flourish/ Retrieved 09 August, 2015.

[4] Nori, S. 2014. "5 ways hadoop can help healthcare organizations and you" http://www.smartdatacollective.com/sameernori/282021/5-ways-hadoop-can-help-healthcare-organizations-and-you Retrieved 09 August, 2015

[5] Hortonworks. 2015. "Apache mahout." http://hortonworks.com/hadoop/mahout/ Retrieved 09 August, 2015

[6] Philips. 2015. "Open a world of cloud-based collaborative care." http://www.usa.philips.com/healthcare-innovation/about-health-suite Retrieved 09 August, 2015.

[7] Al-Azzawi, H. 2014. "Caradigm healthcare analytics." http://www.caradigm.com/media/68911/Caradigm-WP-Healthcare-Analytics-

[8]Jan-2014-US-EN.PDF Retrieved 09 August, 2015. Bakshi, K. 2014, 'Considerations for big data: architecture and approaches', Aerospace conference, IEEE, pp. 1-7.

[9] Gabe, T. 2015. "Poverty in the United States: 2013." https://www.fas.org/sgp/crs/misc/RL33069.pdf Retrieved 09 August, 2015.