LITERATURE SURVEY

1.Big Data Analytics in Healthcare Systems

Big Data analytics can improve patient outcomes, advance and personalize care, improve provider relationships with patients, and reduce medical spending. This paper introduces healthcare data, big data in healthcare systems, and applications and advantages of Big Data analytics in healthcare. We also present the technological progress of big data in healthcare, such as cloud computing and stream processing. Challenges of Big Data analytics in healthcare systems are also discussed.

Keywords- Big data, Big Data analytics, Healthcare, Personalized medicine, Precision medicine, Cloud computing,
Stream processing.

AUTHOR : **Mohammad Alkhatib, Amir Talaei-Khoei, Amir Ghapanchi**

Big data in healthcare: management, analysis and future prospects

The term "*big data*" has become extremely popular across the globe in recent years. Almost every sector of research, whether it relates to industry or academics, is generating and analyzing *big data* for various purposes. The most challenging task regarding this huge heap of data that can be organized and unorganized, is its management. Given the fact that big data is unmanageable using the traditional software, we need technically advanced applications and software that can utilize fast and cost-efficient high-end computational power for such tasks. Implementation of artificial intelligence (AI) algorithms and novel fusion algorithms would be necessary to make sense from this large amount of data. Indeed, it would be a great feat to achieve automated decision-making by the implementation of machine learning (ML) methods like neural networks and other AI techniques. However, in absence of appropriate software and hardware support, big data can be quite hazy. We need to develop better techniques to handle this 'endless sea' of data and smart web applications for efficient analysis to gain workable insights. With proper storage and analytical tools in hand, the information and insights derived from big data can make the critical social infrastructure components and services (like healthcare, safety or transportation) more aware, interactive and efficient [3]. In addition, visualization of big data in a user-friendly manner will be a critical factor for societal development.

AUTHOR : Sabyasachi Dash, Sushil Kumar Shakyawar, Mohit Sharma & Sandeep Kaushik

3. Exploring big data analytics in health care

Health care Industries are facing lot of challenges in maintaining patient information across various databases due to storage issues. In order to extract patient information, preprocessing techniques can be applied in the process of data mining across databases. But as the data is growing enormously with rapid speed, data mining techniques are becoming obsolete due to issues such as Storage, Speed. So, cost optimization has become one of the major requirements in health industry as there is huge burden in maintaining large volumes of patient's information using traditional databases. Here Big Data plays a vital role in storing huge volumes of patient information using storage mechanisms such as HDFS, HBase. Many issues in health care are discussed in this paper such as prediction of diseases, getting patients information across databases as a single view.

AUTHOR : T.Ramesh[a]V.Santhi[b]

4. Big data analytics in healthcare: promise and potential

Big data analytics in healthcare is evolving into a promising field for providing insight from very large data sets and improving outcomes while reducing costs. Its potential is great; however there remain challenges to overcome.

Keywords: Big data, Analytics, Hadoop, Healthcare, Framework, Methodology

AUTHOR : Wullianallur Raghupathi and Viju Raghupathi

5. An overview of healthcare data analytics with applications to the COVID-19 pandemic

In the era of big data, standard analysis tools may be inadequate for making inference and there is a growing need for more efficient and innovative ways to collect, process, analyze and interpret the massive and complex data. We provide an overview of challenges in big data problems and describe how innovative analytical methods, machine learning tools and metaheuristics can tackle general healthcare problems with a focus on the current pandemic. In particular, we give applications of modern digital technology, statistical methods,data platforms and data integration systems to improve diagnosis and treatment of diseases in clinical research and novel epidemiologic tools to tackle infection source problems, such as finding Patient Zero in the spread of epidemics. We make the case that analyzing and interpreting big data is a very challenging task that requires a multi-disciplinary effort to continuously create more effective methodologies and powerful tools to transfer data information into knowledge that enables informed decision making.

AUTHOR : Zhe Fei, Yevgen Ryeznik, Alex Sverdlov, Chee Wei Tan