Chapter 4
India's Remote Medical Monitoring System Using Big Data and MapReduce Hadoop Technologies:
Big Data With Healthcare

Koppula Srinivas Rao
MLR Institute of Technology, India

S. Saravanan
B. V. Raju Institute of Technology, India

Kasula Raghu
Mahatma Gandhi Institute of Technology, India

V. Rajesh
Koneru Lakshmaiah Educational Foundation, India

Pattem Sampath Kumar
https://orcid.org/0000-0003-2565-1590
Malla Reddy Institute of Engineering Technology, India

ABSTRACT

The data analytics and Hadoop applications are the most prominent elements in big data analytics to analyze the large volumes of data. The developing countries mainly concentrate on medical, economic, and emerging issues. This chapter focuses on the importance of big data management and Hadoop, as well as their influence on delivering medical services to everyone at the lowest feasible costs.

INTRODUCTION

Big Data is a relatively recent development in the world of information systems that has emerged as a result of the rapid growth of data over the past decade. Big Data remains a term utilized towards describe datasets that exceed the capabilities of conventional data collection then storage systems. A modern form of data analytics known as Big Data Analytics has arisen as a result of the need to handle and analyses those massive datasets Feng, C.(2020). It entails processing large amounts of data of various forms in order to uncover secret blueprints, unidentified associations, and other valuable data Shilo, S.(2020). Many companies are rapidly turning to Big Data analytics to obtain deeper visibility into their operations, improve revenue and profitability, and gain a strategic edge over competitors Siegel, J. (2012).

The Apache Hadoop Framework's basic programming models make it easier to spread the analysis of large data sets across groups of systems Au-Yong-Oliveira (2021). The architecture remains designed towards scale from a single server to thousands of devices, each with native computing then storage capabilities Dash, S.,(2019). At the software layer, the library remains structured in such a way that errors can be detected & dealt with. As a result, the architecture is capable of providing continuous operation on top of a set of applications that are vulnerable to failure Senthilkumar,S.(2018). Hadoop's bright future draws a wide range of businesses and organizations to use it for both science and manufacturing Harris, T. (2010).

HEALTHCARE IN INDIA

India ranks second in the world in terms of population. India's health-care system is being overburdened by the country's growing population. Among a wide number of individuals, economic scarcity leads to a weak approach to health care. GDP per capita are the most important indices of human growth. Longevity is linked to income and education and affects the status of one's wellbeing. The health-care sector's vulnerability can have a detrimental impact on longevity. India's Human Development Index (HDI) is low (115th) among world countries. The main reasons for India's high disease burden are a lack of access to preventative and therapeutic health facilities White, T. (2010).

"Growth in national income by itself is not enough, if the gains do not manifest themselves in the form of more food, greater access to health, and education," said Amartya Kumar Sen, an Indian economist & Nobel laureate Zulkernine, (2013).

In a lecture, Dr. MC Misra, the director of the All India Institute of Medical Sciences (AIIMS), said, "Advances in medical technology and modern medicines are indeed a blessing, but to operate in India, they must be value for money." Also free services in public hospitals are out of reach for the majority of people."

However, according to World Bank data, 99% of India's population cannot afford to pay for these facilities. As per the survey, out-of-pocket medical costs push 39 million individuals into poverty per year, with households dedicating about 5.8% of their income to medical care Yang Song. Alatorre, G. (2013).

In India, less than 10% of the population has signed up for health insurance. Hospitalization costs alone account for 58% of a typical Indian's gross annual spending. According to World Bank data, over 40% of people borrow heavily or sell properties towards cover hospitalization costs, pushing 39 million people into poverty per year.

Related Content

eSF: An E-Collaboration System for Knowledge Workers

Marco C. Bettoni, Nicole Bittel, Willi Bernhardand Victoria Mirata (2016). *Cultural, Behavioral, and Social Considerations in Electronic Collaboration (pp. 157-172).*

www.irma-international.org/chapter/esf/140708

Design Patterns for Facilitation in E-Collaboration

Gwendolyn L. Kolfschoten, Robert O. Briggsand Gert-Jan de Vreede (2008). *Encyclopedia of E-Collaboration (pp. 139-145).*

www.irma-international.org/chapter/design-patterns-facilitation-collaboration/12417

Non-Linear Intelligence Flexibility Management of Talents in Private Higher Vocational Yunnan College, China

Xue Gangand Zhong Wu Li (2022). *International Journal of e-Collaboration (pp. 1-11).*

www.irma-international.org/article/non-linear-intelligence-flexibility-management-of-talents-in-private-higher-vocational-yunnan-college-china/307134

A Qualitative Study of Web-Based Knowledge Communities: Examining Success Factors

Hui Lin, Weiguo Fanand Zhongju Zhang (2009). *International Journal of e-Collaboration (pp. 39-57).*

www.irma-international.org/article/qualitative-study-web-based-knowledge/3933

Participant-Driven Approach to Autonomously Cluster Brainstorming Ideas

Joel H. Helquist, John Krusand Jay Nunamaker (2011). *E-Collaboration Technologies and Organizational Performance: Current and Future Trends (pp. 332-346).*

www.irma-international.org/chapter/participant-driven-approach-autonomously-cluster/52355