



# An Industrial IoT Approach for Pharmaceutical Industry Growth

Volume 2

2020, Pages 1-30

## Chapter 1 - Medical big data mining and processing in e-health care

A. Vidhyalakshmi<sup>1</sup>, C. Priya<sup>2</sup>

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<https://doi.org/10.1016/B978-0-12-821326-1.00001-2> ↗

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### Abstract

Health care is thought to be one of the business fields with the largest big data potential. Based on the prevailing definition, big data has a large amount of data which can be processed easily and can be modified or updated easily. These data can be quickly stored, processed, and transformed into valuable information using older technologies. At present, many new trends regarding new data resources and innovative data analysis are followed in medicine and health care. In practice, electronic health-care records, free open-source data, and the “quantified self” provide new approaches for analyzing data. Some of these advancements have been made in information extraction from the text data based on analytics, which is useful in data unlocking for analytics purposes from clinical documentation. Choosing big data approaches in the medicine and health-care fields has been lagging. This has led to the rise specific problems regarding data complexity and organizational, legal, and ethical challenges. With the growth of the uptake of big data in general, and medicine and health care in specific, innovative ideas and solutions are expected. Telemedicine is a new opportunity for the Internet of Things (IoT). This enables the specialist to consult a patient despite them being in different places. Medical image

segmentation is needed for the analysis, storage, and protection of medical images in telemedicine. Telemedicine is defined by the World Health Organization (WHO) as “the practice of medical care using interactive audiovisual and data communications. This includes the delivery of medical care services, diagnosis, consultation, treatment, as well as health education and the transfer of medical data.” IoT-based applications mainly include remote patient monitoring and clinical monitoring. In addition, preventive measures-based applications are also part of smart health care. These applications require image processing-based technologies which could be integrated into medical health-care systems. Various types of input taken from cameras and processing of CT and MRI images could be integrated into IoT-based medical applications.

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