

Chapter 14

To Identify the Accessibility and Performance of Smart Healthcare Systems in IoT-Based Environments

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ABSTRACT

Internet of things (IoT) is a prominent terminology that has gaining enormous assistance over past years among researchers and professionals. In general, IoT is a combination of interdependent computing devices such as sensors, actuators, microprocessors and other sink nodes that are able to transfer data over network without compelling human-to-human or human-to-machine communication. Besides, by reason of its interdisciplinary approach, IoT has been substantial in evolving distinct aspects of conventional e-healthcare paradigms. On the other side, traditional healthcare system has no longer enchanted the demands of a frequently expanding and developing community. Further, the research works figure out to provide a specially designed for an IoT based e-healthcare system to engage specially for interoperability problems. Subsequently, based on diverse technological standards and communication protocols the specific necessity of IoT system were identified and offered as a base for the development of the system.

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INTRODUCTION

In general, IoT is a unique environment in which all other connected node communicates with the neighbouring nodes inside the network to transpose prerequisite data for systematic and real time decision making. Moreover internet has also turn into the essential part of regular life (Kumar et al., 2019). On the other side, IoT has become competent domain in critical direction like healthcare application. Healthcare sector enhanced their performance with support of advanced technology. However, the mechanism of purification or analyzing the huge amount of data, various academicians and industrial persons are facing definite obstacles with reference to security, privacy, reliability network connectivity and so on (Madhav, 2021).

In recent days, the active improvement of IoT has regulated by extended minimization of value in terms of advanced technology. In a row research society observed the reduction of costs for distinct devices, origin from 2D, 3D printers to smart watches and fitness bearer (Zanella et al., 2014). Also, greatly decreases expenditure of Bluetooth and Wi-Fi modules e.g. around Rs.100 per item for Bluetooth Low Energy module affirm to connect higher end devices to IoT.

OVERVIEW OF IOT AND ANALYTICAL BACKGROUND

The modern description of IoT is termed as set of network system based on the Internet which can be continuing and improving the communication between user systems into various machines (H2M) to exchange information (Ray, 2018). The terminology of IoT is higher than individual approach or technology. IoT is a new standard that contain an extensive group of automations, applications and perceptions. Also, entire concession on the rationale is disappeared as it modify with affinity to the frame of reference (Pavitra et al., 2022). Hence it can figure out the fundamental character of the smart objects along with capabilities to merge logically with alternative things, human and environments in turn on the consistent integration enclosed by various types of things and networks in relation to the service oriented architecture of the forthcoming Internet (Gubbi et al., 2013).

In other words, IoT states that thing is physical or implicit that prevail and progress in space and time despite it can be individually constant. Further it is conventional in future so things grow into progressive possibilities in service, information and communal development where they can collaborate and broadcast with each other by transforming information about the environmental surroundings which turn replying to and conditioning the action takes place in real world without human interference (Tao et al., 2014).

Every phenomenon starts with the tiny sensor and back to robotic manufacturing branch. The following key components belong to IoT infrastructure which is presented in Figure 1.

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