Original Article

Health Care Internet of Things (IOT) During Pandemic -A Review

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Abstract

With so many health problems prevalent in today's world, maintaining personal health should be of great importance. While the number of patients is large, the number of doctors is relatively small. As a result, diagnosis is delayed and some patients are neglected. This increases the patient's confidence in the doctor for regular checkups. With all these issues in mind, healthcare systems are starting to connect to the IoT to maintain a digital identity for each patient. Many health problems are undiagnosed in the healthcare sector due to a shortage of doctors/caregivers and lack of access to healthcare. On the other hand, these IoT-based medical systems allow patients and doctors to continuously monitor and easily analyze patient data. This article provides an overview of the role of the Internet of Things in healthcare related to pandemic disease COVID-19.

Keywords: Health care, Internet of Things, pandemic, diagnosis, COVID-19.

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INTRODUCTION

Today's technological advances must be accompanied by their application and implementation in human environments where public health and energy efficiency are important. IoT is a cutting-edge technology that can connect all smart objects in a network without human intervention. When medical systems started connecting with IoT devices, they were only used to maintain the patient's digital identity. Improved communication between doctors and patients has increased IoT productivity in healthcare. Companies create these apps to help doctors monitor the health of their patients. If the patient has problems, the doctor approaches and prescribes the necessary treatment. Simply put, an IoT device is any object that can connect to the Internet for further monitoring or data transmission. In recent years, IoT has gained important ground as a new research topic in various academic and industrial fields, especially in the medical field. Transform IoT into information to improve the patient's treatment. The medical assistance is technically developed and aims to connect cheap systems. As a result, IoT is very important in healthcare. All of this information can be stored in the cloud using devices such as connected sensors and other wearables, allowing doctors/caregivers to easily monitor patient information in real time. The Internet of Things revolution is transforming modern healthcare systems by integrating technological, economic and social impact. Transform your healthcare system from traditional to personalized, making it easier to diagnose, treat and monitor patients. The Internet of Things (IoT) is a dynamic, self-organizing global network infrastructure with standard and interoperable communication protocols fully integrated into the information infrastructure and virtual entities of identities, physical functions, physical and virtual objects. In fact, the Internet of Things (IoT) is a global network that connects intelligent objects through a wide range of Internet technologies.

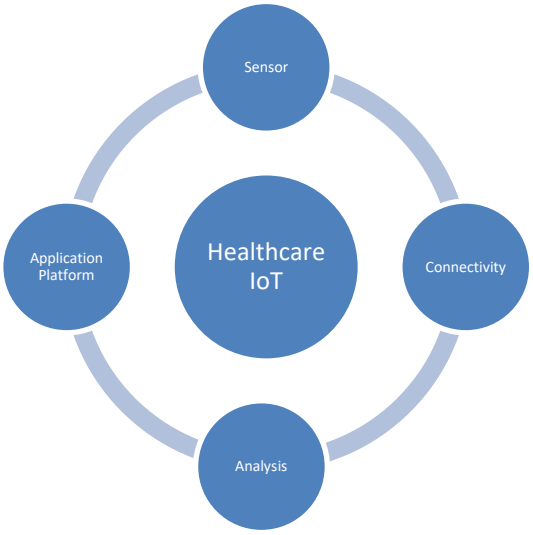

Figure 1: General IoT in Health care

Health care

Health care is one of the top priorities of all governments due to population growth, rural urbanization, declining fertility rates, aging populations, economic growth and disproportionate social use of resources. Healthcare has many applications, including the ability to use a smartphone's function as a medical monitoring platform to alert patients to medical issues. The IoT system is an innovative system that transforms the healthcare environment by reducing operating costs and supporting caregivers. This technology enables integration with health systems via the Internet Cloud, allowing clinicians to see real-time insights, make informed decisions, and provide evidence-based care. This initiative helps manage energy primarily by remotely controlling electronic devices such as lights and fans to reduce energy consumption. In today's world, attention to advances in health education and wireless communications is essential. To meet our requirements, IOT facilitates wireless monitoring, real-time control of things and access to the Internet. By using wireless sensor networks in healthcare systems, we will overcome the problems of wired networks and develop healthcare systems. Calorie counter, heart rate monitor, blood pressure monitor, pedometer, hydration, OnTrack diabetes, skin view, cardiomobile and other IoT-enabled health devices

Challenges in IoT

Connected devices (smartphones, sensors, etc.) can be vulnerable to hacking or hacking. When data is transmitted from one device to another, it must be encrypted. Another challenge to the successful implementation of IoT in healthcare is the integration of multiple devices and protocols into a network. Many smartphones are connected to the Internet and actively collect data. There are also various communication protocols that complicate the information integration process. Developing new applications with innovative ideas that benefit doctors and patients is not enough to pay for new technologies. The resulting product must also generate revenue in the medical field.

Role of IoT in pandemic

The number of patients infected in the current epidemic increases every day and you have to use a well -organized object that offers articles on the Internet. New heavy breathing syndrome global pandemic COVID is prevailing for around 2 years is the worst health crisis of the epidemic flu. This disease has a higher spread than other coronavirus diseases, but many efforts and research are being done to reduce the spread of this virus. The use of IoT technology has proven to be a safe and effective way to combat the COVID-19 pandemic. In fact, IoT devices can collect data from patients to speed up the diagnostic process. This can be done by measuring body temperature with various instruments or by collecting samples from suspected cases. can be implemented by Major applications of IoT in the Covid-19 crisis include internet-connected hospital, remote medical

consultations, rapid screening, intelligent tracking of infected people and virus prediction.

IoT helps connect and monitor everything. Some of the applications identified are real-time monitoring, remote patient monitoring, immediate diagnosis, contact tracing, screening and monitoring, prevention and control. Security and privacy issues. Review the role of IoT-based technologies in the Covid-19 outbreak and current IoT-based solutions to combat Covid-19. He categorized IoT solutions into three main phases: early diagnosis, quarantine, and post-treatment. IoT devices such as IoT buttons, wearables, drones, robots and smartphone apps are also represented at each stage.

Application of IoT during COVID-19

The Internet of Things (IoT) uses multiple interconnected devices to create smart networks for appropriate healthcare systems. Improve patient safety by alerting and monitoring all types of diseases. Digitally capture patient data and information without human intervention. This information is also useful for making informed decisions. Patients can use IoT services to closely monitor heart rate, blood pressure, blood glucose meters and other activities for personalized attention. It helps in monitoring the health status of elderly people. An important application of this technology in healthcare includes real-time location tracking of medical equipment and devices to ensure a delay-free treatment process.

Future discussion

Even though the use of IoT in healthcare is one of the easiest and also the efficient way for keeping track of the disease and the patient there are several issue in maintaining the systems. One of the main reason is the security maintenance. During the pandemic due to the outbreak of COVID-19 the use of health care IoT gave a good hand. Still there are some gap to be studied and reviewed which will be keep as a record for any future requirement. Some of the issue to be studied are security, privacy of data. The above said parameters should be looked for future issue because they will lead to the chance of misuse of the patient data and increase in cybercrime offence due to the wrong usage of the data's stored. The work can be further extended into the concept of effective data collection and storage and integrating the data collection efficiently.

Conclusion

Many technologies have been introduced to combat the COVID-19 pandemic. The Internet of Things (IoT), widely used in healthcare, is one such technology. Properly deployed IoT technologies in a secure manner will enable more patients to confidently engage in care using IoT devices. This will allow authorities and health professionals to respond more effectively to the pandemic. Rates of these diseases, such as infections, hospitalizations and deaths can be significantly reduced. IoT is becoming useful for predicting the evolution of this disease. Scientists, doctors, governments and academia can work together to create a better environment to fight these diseases if this technology is implemented properly.

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