IOT BASED PATIENT HEALTH MONITORING USING IP ADDRESS

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ABSTRACT

The project's main objectives include real-time health data collection through IoT sensors and devices, facilitating remote patient monitoring and early anomaly detection. Utilizing AI and machine learning, it offers predictive insights for personalized healthcare. This implementation streamlines healthcare delivery and seamlessly integrates with telemedicine, ensuring patient privacy via secure IP-based communication. Its cost-efficiency benefits reduce hospital readmissions and enhance resource allocation. With scalability and potential for personalized medicine, this IoT-based system promises to redefine healthcare with data-driven, patient-centric, and cost-effective solutions.

Keywords: Real Time Tracking, IP address, wearable devices, Health informatics, Cloud Storage

1. INTRODUCTION

Among several technologies, IoT is a top-tier case study. It has the ability to improve the lives of city dwellers. The requirement for productive medical care frameworks that can oversee and give various clinical benefits while diminishing generally speaking costs is expanding because of the rising worldwide populace and the commonness of persistent sicknesses. With the ascent of the Internet of Things (IoT), medical care global positioning frameworks have had the option to advance. The objective of the Web of Things (IoT) medical care observing framework is to definitively screen people and connection various administrations and gear all around the globe over the Web with the goal that information might be gathered, shared, checked, put away, and investigated. However, the Internet of Things (IoT) is a paradigm shift that makes it possible for smart applications like smart cities, smart homes, and smart healthcare to manage and interact remotely with any and all connected physical objects. The application of sensor networks to the human body can greatly facilitate disease diagnosis and patient monitoring, both of which are essential to medical treatment. Also, you may access the data whenever you want, no matter where you are in the globe. It may be difficult for patients from certain regions or those with serious injuries to get to the hospital. As a result, individuals may save time and money by communicating with their physicians via video conferencing, which can enhance their health. With this innovation, patients may document their health status on their mobile devices. Improved and personalised treatment is one of the anticipated results of the Internet of Things (IoT), which could lead to better patient outcomes and lower healthcare management expenses. The Internet of Things (IoT) enables doctors to keep tabs on their patients from afar and makes appointment scheduling a breeze. Patients may take an active role in their own healthcare by making adjustments at home, which can cut down on doctor visits and the chances of them getting treatments that aren't needed. Consequently, healthcare costs may go down while patient safety and quality of hospital treatment are enhanced. The Internet of Things has enormous promise in the medical field. Soon we can facilitate medical clinic tasks with a wellbeing global positioning framework that we can use from the comfort of our own homes. For steady natural and substantial observing, a thick sending of IoT sensors is required. Rehabilitation and chronic illness management progress tracking will be made possible by this endeavour. With the help of the Internet of Things (IoT), future digital consultations for distant medical care may be able to establish effective data connections from a variety of sources.

2. LITERATURE SURVEY

[1] 1 Internet of Things Based Wireless Patient Body Area Monitoring Network

Problem Statement : A health monitoring device utilizing IoT and cloud computing to measure patients' vital signs. It wirelessly transmits real-time data to doctors, mobile apps, and hospital websites, while also triggering emergency alerts when needed, enhancing remote patient monitoring and healthcare accessibility.

Existing System : Continuous monitoring may result in data overload, potentially leading to alert fatigue among healthcare providers due to false alarms.

[2] IoT-Based Patient Health Monitoring System

Problem Statement : This technique is great for keeping tabs on the health of the elderly, so doctors can intervene when necessary to make sure they live longer. IoT is crucial in healthcare, collecting and delivering vital information for improved outcomes..

Existing System : This can potentially slow down the network and affect the real-time nature of health monitoring

[3] Patient Health Monitoring System The proposed venture utilizes temperature and pulse rate sensors to measure vital parameters for seriously ill patients.

Problem Statement : This real-time data enables immediate action and alerts the doctor for swift intervention in critical cases, enhancing patient care monitoring patient's body temperature, respiration rate.

Existing System : This system monitors critical patient parameters through loT but raises ethical concerns regarding consent and autonomy due to the discomfort associated with extensive surveillance

[4] IOT Based Patient Health Monitoring System using RASPBERRY PI

Problem Statement : tracking the patient's vitals using a Raspberry Pi board, including their temperature, respiration rate, heart rate, and movement. Sensors for temperature, respiration, acceleration, and heart rate are all part of the Raspberry Pi board's feature set.

Existing System : Healthcare professionals may require training to effectively use and troubleshoot Raspberry Pi- based monitoring systems, which could incur additional costs and time.

[5] IOT Based Remote Patient Health Monitoring System.

Problem Statement: A Internet of Things (IoT) based worldview for far off persistent wellbeing observing was recommended in this review. The proposed framework might screen patients' vitals — including temperature, pulse, pulse, and electrocardiogram readings — whether they are at home or at a far off area utilizing sensors.

Existing System: It needs a computer to send data to the webserver through the internet.

[6] IoT Based Remote Health Monitoring System for Patients and Elderly People.

Problem Statement: This effort aimed to achieve the sustainable development of patient-centered remote health monitoring systems. Through an android app, the person keeping tabs on the patients may see the parameters graphically.

Existing System: Some stress stages can be detected by GSR but not by pulsimeter

[7] Health Monitoring System

Problem System: Exploring beyond conventional methods, Patient Health Monitoring seeks technological enhancements to complement existing healthcare services by harnessing the potential of IoT. It aims to integrate diverse technical solutions for an improved and holistic healthcare delivery

Existing System: Resistance to adopting new healthcare technologies may arise from perceived intrusiveness or a lack of understanding about interpreting data from IoT devices among healthcare professionals and patients.

[8] Patient Health Monitoring System Using Wearable Biomedical Device.

Problem Statement: Enabling automatic sensing and data storage of patients' health conditions. It provides real-time data access to doctors, ensuring they stay informed and allowing timely interventions.

Existing System: The system also includes alert mechanisms to notify Page 4 of 8 both medical professionals and family members during emergency situations. the potential vulnerability to cybersecurity threats, posing risks to patient data privacy and system integrity if not adequately secured.

3. HARDWARE AND SOFTWARE

REQUIREMENTS

3.1 HARDWARE REQUIREMENTS:

- ESP32
- Pulse sensor
- LED
- LM35
- Resistor
- Buzzer
- Jumper wires
- Breadboard

3.2 SOFTWARE REQUIREMENTS:

- Arduino IDE
- Google Sheets

4. CONCLUSION

IoT-based patient health monitoring using IP addresses represents a transformative approach to modern healthcare. It offers real-time data collection and transmission, enabling remote patient monitoring, early anomaly detection, and data-driven healthcare decisions. While it enhances patient care, reduces hospital visits, and improves healthcare accessibility, it must address concerns related to data security, network reliability, and patient consent to realize its full potential. The use of IoT in healthcare promises to revolutionize the industry and contribute to more personalized, effective, and efficient patient care as technology continues to advance.

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5. FUTURE IMPROVEMENTS

1. Computer based intelligence Driven Prescient Examination: Integrate progressed computerized reasoning calculations to anticipate wellbeing patterns and likely issues, taking into consideration much more proactive medical services mediations.

2. Blockchain for Improved Security: Carry out blockchain innovation to additional improve the security and protection of patient information, guaranteeing permanent and sealed wellbeing records.

3. Wearable and Implantable Gadgets: Create more modest, more watchful wearable and implantable IoT gadgets for ceaseless wellbeing observing, giving significantly more prominent patient solace and comfort.

4. Edge Figuring: By using edge processing to handle information closer to the source, you can reduce inactivity and work on constant checking.

6. REFERENCES

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