

Study on Patient Healthcare with alert System

ISSN 2395-1621

^{#1}Mohini Garud, ^{#2}Vanita Dube, ^{#3}Suman Gaikwad, ^{#4}Tejal Bhoknal
^{#5}Prof. Jyoti Deshmukh



¹garudmohini123@gmail.com
²dubevanita@gmail.com
³gaikwadsuman1994@gmail.com
⁴tejalbhoknal123@gmail.com

^{#12345}Department of Computer Engineering

JSPM's, BSIOTR, Wagholi, Pune.

ABSTRACT

Patient healthcare provision in the home environment presents many challenges. Patient Healthcare is a term used for the practice of medicine and public health supported by mobile devices. It is most commonly used in the reference to using mobile communication devices such as mobile phones, tablet & computer PDAs. A wireless sensor network with a large number of sensor nodes can be used as an effective tool for gathering data in healthcare situations. It is an autonomous sensor to monitor the physical or environmental condition. This project addresses Patient Healthcare System at home. The purpose of this project is to on emergency case doctor can handle the situation using this device. After analysing these patient records from device then doctor send the all details via SMS to the patient like prescription, tablets etc., and patient take action on this update and take a relax.

Keywords: Predictive monitoring, Wearable sensors, Personalized monitoring Microcontroller,

ARTICLE INFO

Article History

Received: 19th October 2016

Received in revised form :
20th October 2016

Accepted: 24th October 2016

Published online :
25th October 2016

I. INTRODUCTION

The majority of the patients in the hospital are ambulatory and they are well suited to be monitored using wearable sensors for the purpose of predictive care. The goal of such system is to provide early warning of physiological corrupt Such that preventative clinical action may be taken to improve patients outcome Health is one of the global challenges for humanity. World health organization (WHO) has mentioned that for an individual proper health is the fundamental right. The people who are healthy secure their income as they don't need to spend mone For medicines and in hospitals. They reduce burden on over populated clinics, hospitals and reduce workload of medical professionals. So to keep people fit and healthy proper healthcare services should be provided.

Despite wearable patients' monitors now being manufacture allowing the collection of physiologically data from ambulatory patients the resulting quantity of data acquired each day is large the data deluge effect

occurs. The workload of clinicians and healthcare workers prevents then inspecting long time series of multivariate patients physiological data to high degree accuracy and the predictive accept to patients monitoring is lost. Intelligent online processing of this large datasets is required for predictive monitoring the results of which should then focus the limited resources of human experts to these to those subsets of patients who are deemed to be most at risk of being physiologically unstable and who are in need of expert review.

II. LITERATURE SURVEY

“Monitoring Mobile Patients Using Predictive Analysis By Data From Wearable Sensors, International Conference on Electrical, Electronics, and Optimization Techniques (ICEEOT) – 2016”.

In this paper system uses sensors, the data acquisition unit, microcontroller (ie.Arduino) and software. This system is able to send alarm messages about the patient's critical health data by text messages or by email reports. By using this information the healthcare professional can provide necessary medical advising. [1]

"Study on Mobile Healthcare System, International Journal of Advanced Research in Computer Science and Software Engineering, 2014".

Monitors the location based rapid search for patients and performance related issues are focused. The privacy related issues are focused which provides the authenticated usage by cryptographic mechanism and provable data security. The strong privacy preserving schemes are analyzed which provides the efficient e-health system by providing privacy and security. [2]

"Data Mining for Wearable Sensors in Health Monitoring Systems: A Review of Recent Trends and Challenges, Center for Applied Autonomous Sensor Systems, Orebro University, SE-70182, Orebro, Sweden; 2013".

This paper provides a recent review of the latest methods and algorithms used to analyze data from wearable sensors used for physiological monitoring of vital signs in healthcare services. In particular, the paper outlines the more common data mining tasks that have been applied such as anomaly detection, prediction and decision making when considering in particular continuous time series measurements. [3]

"Mobile Healthcare System using NFC Technology, IJCSI International Journal of Computer Science Issues, Vol. 9, Issue 3, No 3, May 2012".

In this paper developing a basic architecture for m-healthcare services using Near Field Communication (NFC) to facilitate the provisioning of healthcare to people anywhere, anytime using mobile devices that are connected through wireless communication technologies. [4]

"Mobile based Primary Health Care System for Rural India , Mobile Computing and Wireless Networks, CDAC, Electronics city, 2008".

This paper explores the present status of Mobile based Health Care systems in different countries, shortfalls in Primary Health Care Management in rural India, and the potential solution to fill it with the enabling of Mobile Web technologies for Primary Health Care management. [5]

"A survey on wearable sensor-based systems for health monitoring and prognosis, IEEE Trans. Syst., Man, Cybern. C, Appl. Rev., vol. 40, no. 1, pp. 1-12, Jan. 2010."

This paper attempts to comprehensively review the current research and development on wearable biosensor systems for health monitoring. A variety of system implementations are compared in an approach to identify

the technological shortcomings of the current state-of-the-art in wearable biosensor solutions. An emphasis is given to multi parameter physiological sensing system designs, providing reliable vital signs measurements and incorporating real-time decision support for early detection of symptoms or context awareness. In order to evaluate the maturity level of the top current achievements in wearable health-monitoring systems, a set of significant features, that best describe the functionality and the characteristics of the systems, has been selected to derive a thorough study. The aim of this survey is not to criticize, but to serve as a reference for researchers and developers in this scientific area and to provide direction for future research improvements. [6]

III. PROPOSED SYSTEM

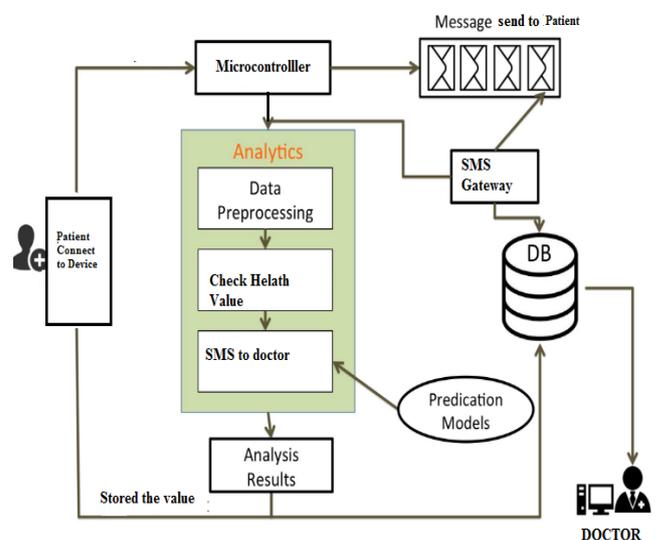


Fig 1. System architecture

IV. MATHEMATICAL MODEL

System Description:

Input:

Function Health Calculation ()

P : Patient.

M : Microcontroller.

S: Sensors

D : Doctor.

V : Value of Patient health.

Output:

When Patient connect to the device then automatically calculated patient health.

Input

Function SMS (id, request, data)

ID : unique id for each patient.

Request : Doctor send request to patient.

Data : Doctor input text data.

Output: Doctor send SMS in case of patient emergency.

Success Conditions: Success system when Correct value send health value to the doctor

Failure Conditions: Our system fails when no any result found to the given input.

V. METHODOLOGY

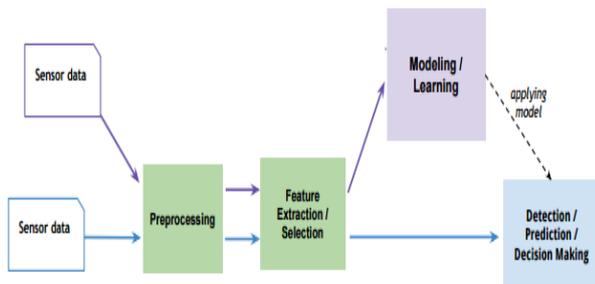


Fig2. A generic architecture of the main data mining approach for wearable sensor data

In the figure 2, the raw sensor data is typically used as a starting point of the data mining approach. Here, the sensor data is provided for both training data in order to learn the system, make a model of features, as well as testing data for real-world usage designed model and make the result. This data mining approach is suggested as a general flow for both supervised and unsupervised data mining solutions in order to provide any kind of data mining task as result. The main steps of the data mining approach consist (1) data pre-processing; (2) feature extraction and selection; and (3) modelling data learning the input features (considering expert knowledge and metadata) to perform the tasks such as detection, prediction, and decision making.

VI. CONCLUSION

The proposed system is more efficient and beneficial. It uses low cost, lightweight sensor which monitors the patient continuously and proper messages are provided in emergency. Thus it saves life of patient when abnormal conditions take place. A dynamic integration related to multimedia medical data provides the framework which is low overhead and rich multimedia support. The wireless medium develops a wireless emergency healthcare system for an environment that integrates with several technologies such as Microcontroller, Sensors and SMS.

REFERENCES

- [1] Monitoring Mobile Patients Using Predictive Analysis By Data From Wearable Sensors, International Conference on Electrical, Electronics, and Optimization Techniques (ICEEOT) – 2016.
- [2] Study on Mobile Healthcare System, International Journal of Advanced Research in Computer Science and Software Engineering, 2014.

[3] Data Mining for Wearable Sensors in Health Monitoring Systems: A Review of Recent Trends and Challenges, Center for Applied Autonomous Sensor Systems, Orebro University, SE-70182, Orebro, Sweden; 2013.

[4] Mobile Healthcare System using NFC Technology, IJCSI International Journal of Computer Science Issues, Vol. 9, Issue 3, No 3, May 2012.

[5] Mobile based Primary Health Care System for Rural India, Mobile Computing and Wireless Networks, CDAC, Electronics city, 2008.

[6] A. Pantelopoulou and N. Bourbakis, —A survey on wearable sensor-based systems for health monitoring and prognosis, IEEE Trans. Syst., Man, Cybern. C, Appl. Rev., vol. 40, no. 1, pp. 1–12, Jan. 2010