A Survey Based on Mobile Cloud Computing in Health Care Application and Big Data Logistic

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Abstract:
Mobile Cloud Computing which combines the mobile computing and cloud computing for better storage capacity and processing. With recent development in technology, mobile cloud computing and big data analytics play an important role in the healthcare. The main aim is to provide the people better health care. People in the home itself can check their blood pressure, heartbeats, etc through mobile devices. There are many mobile applications that can act as sensors for this health care application. Mobile phone devices can sense the health related problem and electronically record them and send them to the physician. This paper is a survey on mobile cloud computing in health care application. Survey includes various methods of mobile cloud computing in health care application.

Keywords: Cloud Computing, Mobile Cloud Computing, Cloudlet, Health Care, Big Data

I. INTRODUCTION

Mobile cloud computing is an integration of cloud computing into the applications of mobile devices. With the advances in cloud computing and mobile technology, different patterns of cloud health care are emerging. The purpose of Mobile healthcare is to provide mobile healthcare to the users and quick access to the resources, for example, patient health records (PHR). The main aim of applying MCC in healthcare applications is to reduce the limits of traditional medical applications. There are five keys of mobile applications in the healthcare environment: Firstly, health monitoring services enable patients to be monitored at anytime, anywhere. Secondly, intelligent emergency management system can manage the large call volume received from accidents. Thirdly, health-aware mobile devices which detect blood pressure, pulse-rate and level of alcohol. Fourthly, pervasive access to healthcare information allows caregivers and patients to access medical data. Lastly; pervasive lifestyle incentive management can be used for paying healthcare expenses and other health care charges. Mobile Cloud Computing (MCC) is set to benefit the cloud-healthcare system. MCC healthcare system was built to capture and analyze real time biomedical signals, such as ECG and blood pressure from users in different locations. On the mobile devices, a personalized healthcare application is installed and health data are synchronized into the healthcare cloud computing services for storage and processing. This paper is organized as follows: In Section II the survey of different methods is described and section III includes the conclusion.

II. LITERATURE SURVEY

Today, the Smartphone not only serves as the key computing and communication mobile device of choice, but it also comes with a rich set of embedded sensors, such as an accelerometer, gyroscope, GPS, and camera. Collectively, these sensors are enabling new applications across a wide variety of domains, such as healthcare, safety, environmental monitoring, and transportation, social networks and give rise to a new area of research called mobile phone sensing. D. West, proposed [1] managing chronic diseases through remote monitoring and mobile devices. Remote monitoring devices enable patients with serious problems to record their own health measures and send them electronically to physicians or specialists. This keeps them out of doctors’ offices for routine care and helps them to reduce health care costs. Real-time management is important in the case of chronic disease. Consider an example, in the case of diabetes it is crucial that patients monitor their blood glucose levels and gear their insulin intake to proper levels. In the old days based on face-to-face encounters, patients had to visit a doctor’s lab or medical office, take a test, and wait for results to be delivered. That process was expensive, time consuming. However, it is possible to use remote monitoring devices at home that record glucose levels instantaneously and electronically send them to the appropriate health care provider. Patients are using Gluco Phones that monitor and transmit glucose information to caregivers, while also reminding patients when they need to undertake glucose tests. This puts people in charge of their own test-taking and monitoring and keeps them out of doctor’s offices until they need more detailed care. In these paper cooperative models in cloud computing [2] presents a federation concept. Federation is used to share resources of virtual clouds with each other. The aim of the model is to provide a high computing capacity for research centres. This model reduces energy drain from the mobile battery and provides faster execution to meet requests. E.-M. Fong et al. introduced [3] mobile cloud-computing based healthcare service by noncontact ECG monitoring. ECG measurement method is employed to capture biomedical signals from users. Healthcare service is provided to continuously collect biomedical signals from multiple locations. In the real-time noncontact ECG monitoring module [3] is done by a user wearing a cotton shirt sits on a chair with conductive sensor electrodes installed on the seat. A sensor module, battery supply, transmitter, and Bluetooth module are attached together beside the chair seat, and the user holds the mobile device used for real-time health status monitoring. ECG signals from the user are detected through the cotton shirt and filtered by an electronic circuitry sensor module. The microcontroller and the transmitter relay the data from the sensor module to the mobile phone with an application built.
specially for real-time health monitoring. Another paper introduces [4] the system architecture for smart healthcare using wireless sensor network (WSN) with GSM module and microcontroller. The paper presents monitoring system to monitor the physiological parameters such as Blood Pressure (BP), ECG, Body Temperature and Respiration. The coordinator node has attached on body of patients for collecting the signal from wireless sensors. The wireless sensors send this signal to base station or control room of physician. Node of each WSN composed of health care sensors and RF transceiver which send data to the back end server. Sensors can choose in the range of WSNs, while RF transceiver is implemented as a coordinator manages WSN other than forwarding data. The sensing data of each patient are stored in back-end server with each having its own ID. The data analysis, database inquiry, data mining and the system management are processed on the web page of server. The system can detect abnormal condition of patients and send the SMS or e-mail to the physician. It is advantageous to the patient and associate relative of the patient and others who may use the continuous remote health monitoring. J. N. Z. Yuan et.al proposed [5] healthcare applications on mobile cloud computing. Here the author presents a mobile healthcare service and healthcare alerts management system. Mobile Healthcare Service (MHS) system is an application that uses mobile device together with RFID (Radio Frequency System) technology to position and identify both persons and object that are inside and outside the hospital. Hospital and Government are able to receive patient’s location and medical data/ information from the patient’s mobile device by sending them through the RFID technology. Healthcare alert management system is a healthcare service application that runs on mobile devices to manage alerts in hospital.

III. CONCLUSION

Mobile cloud computing plays an important role in the modern technology. With the mobile devices and sensors we can even check our blood pressure; heart beats etc. So people at home itself can check their health related issues. So mobile cloud computing technologies are emerging for the development of health care applications. Big data logistics also emerges in the health application. So it’s an era of developing our technologies for sophisticated devices and facilities.

IV. REFERENCES


V. BIOGRAPHIES

Athira Sankar received B.Tech. Degree in Computer Science and Engineering from Mahatma Gandhi University, India. Pursuing M.Tech. Degree in Computer Science and Engineering from Kerala Technical University, India.

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