Wireless Sensors Network Based Physiological Parameters Monitoring System

A Project Report

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To my family

ABSTRACT

Continuous technological innovation in research and development in the last two decades has resulted in development of different smart systems for heath monitoring for individuals at their home with wireless technology. A wearable non-invasive device has been developed to monitor physiological parameters (such as body-temperature, heart rate, detection of fall) of a human subject. The system consists of an electronic device which is worn on the wrist and finger, by the person to be monitored. The system can be used by elderly or the person at risk or even by a normal person for the monitoring of physiological parameters. Using several sensors to measure different vital signs, the person can be wirelessly monitored within his own home, may be defined as a smart home. A heart-rate sensor has been developed to monitor the heart rate continuously. An accelerometer has been used to detect falls. The device has the capability to determine the stressed condition of the person and may be used to send an alarm signal to a receiver unit that is connected to a computer. This sets off an alarm which can go to a care-giver, allowing help to be provided to the person. Since no vision sensors (camera or infra-red) are used, the system is non-invasive, respects privacy and it is expected that it will find wide acceptance. The system can be used in combination with the bed sensor (part of the home monitoring system) to monitor the person during the night. The complete system will help to monitor the person during day and night and will be suitable to an elderly living alone at home.

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