

Mining Human Activity Patterns from Smart Home Big Data for Healthcare Applications

ABSTRACT

Nowadays, there is an ever-increasing migration of people to urban areas. Health care services are one of the most challenging aspects that is greatly affected by the vast influx of people to city centers. Consequently, cities around the world are investing heavily in digital transformation in an effort to provide healthier ecosystem for people. In this paper, we propose a model that utilizes smart home big data as a means of learning and discovering human activity patterns for health care applications. We propose the use of frequent pattern mining, cluster analysis and prediction to measure and analyze energy usage changes sparked by occupants' behavior.

EXISTING SYSTEM

In existing system .studies show that by year 2050, 66% of the world population will be living in urban areas .There is no chance to know about their health issues which may lead a problem The demand for health care resources will be greatly affected by this vast influx of people to city centers. This unprecedented demographic change places enormous burden on cities to rethink the traditional approaches of providing health services to residents.

DRAWBACKS

- It is not easy to detect usage dependencies among various appliances when their operation overlap or occur at the same time.

PROPOSED SYSTEM

In this paper, we propose a model that utilizes smart home big data as a means of learning and discovering human activity patterns for health care applications. We propose the use of frequent pattern mining, cluster analysis and prediction to measure and analyze energy usage changes sparked by occupants' behavior. Since people's habits are mostly identified by everyday routines, discovering these routines allows us to recognize anomalous activities that may indicate people's difficulties in taking care for themselves, such as not preparing food or not using

shower/bath. Our work addresses the need to analyze temporal energy consumption patterns at the appliance level, which is directly related to human activities. For the evaluation of the proposed mechanism, this research uses the UK Domestic Appliance Level Electricity dataset (UK-Dale) - time series data of power consumption collected from 2012 to 2015 with time resolution of six seconds for five houses with 109 appliances from Southern England. The data from smart meters are recursively mined in the quantum/data slice of 24 hours, and the results are maintained across successive mining exercises. The results of identifying human activity patterns from appliance usage are presented in details in this paper along with accuracy of short and long term predictions.

ADVANTAGES

- Protect people's privacy from being shared .
- To understand and predict their activities that could indicate health issues.

SYSTEM REQUIREMENTS

H/W System Configuration:-

- Processor - Pentium –IV
- RAM - 4 GB (min)
- Hard Disk - 20 GB
- Key Board - Standard Windows Keyboard
- Mouse - Two or Three Button Mouse
- Monitor - SVGA

S/W System Configuration:-

- Operating System : Linux
- Application Server : Tomcat5.0/6.X
- Backend coding : Java
- Tool : Virtual Box
- Environment : Ubuntu
- Technology : Hadoop

www.takeoffprojects.com