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Abstract

A Sustainable Energy Efficient Internet of Medical Things (IoMT)based Framework for e-healthcare

Tanzila Saba

Artificial Intelligence and Data Analytics (AIDA) Lab, CCIS, Prince Sultan University, Riyadh, Saudi Arabia

Abstract:

The internet of things (IoT) is becoming very popular in several fields due to its autonomous, low-cost sensor operations. In health and medical applications, IoT devices develop ecosystems to detect patient health conditions such as blood pressure, oxygen level, heartbeat, temperature, etc. and take appropriate measures in an emergency. This is used to transfer healthcare data from patients to remote users and post-analysis medical centers. Various solutions have been suggested to monitor the health condition of patients using the Wireless Body Area Network (WBAN) based upon low power nodes but demanding and interesting difficulties are preventing increased energy consumption and communications costs. The issue of unbalanced energy consumption between biosensor nodes degrades the timely transmission of information from patients to remote centers and negatively affects the medical system. In addition, the patient's sensitive data is transmitted over the insecure internet and is subject to vulnerable security risks. The privacy of data and malicious traffic integrity are therefore another major problem in medical research. This research paper aims to establish a proposed sustainable, secure and energy-efficient Internet of Medical Things (IoMT) based framework for e-healthcare which aims primarily at decreasing the overhead contact and energy usage between biomass sensors while conveniently transmitting health data, and also at safeguarding patients' medical information against unauthentic and malicious nodes.

Biography:

Prof. Dr. Tanzila Saba earned her PhD in document information security and management from Faculty of Computing, Universiti Teknologi Malaysia (UTM), Malaysia in 2012. She won the best student award in the Faculty of Computing UTM for 2012. Currently, she is serving as an Associate Chair of Information Systems Department in the College of Computer and Informa-

tion Sciences Prince Sultan University Riyadh KSA. Her primary research focus in recent years is Medical Imaging, Pattern Recognition, Data Mining, MRI Analysis, and Soft-computing. She has above two hundred publications that have around 4370 citations with h-index 42. Her mostly publications are in biomedical research published in ISI/SCIE indexed. Due to her excellent research achievement, she is included in Marquis Who's Who (S & T) 2012." Currently, she is an editor and reviewer of reputed journals and on the panel of TPC of international conferences. She has full command of a variety of subjects and taught several courses at the graduate and postgraduate levels. On the accreditation side, she is a skilled lady with ABET & NCAAA quality assurance. She is the senior member of IEEE. (Women in Data Science) ambassador at Stanford University and Global Women Tech Conference. She earned the Best Researcher award at PSU for consecutive 4 years. She has been nominated as a Research Professor at PSU since September 2019.

Publication of speakers:

1. Ban□ur, □., B. Jakši□, M. Ban□ur, and S. Jovi□, An analysis of energy efficiency in Wireless Sensor Networks (WSNs) applied in smart agriculture. Computers and electronics in agriculture, 2019. 156:
2. Thota, C., R. Sundarasekar, G. Manogaran, R. Varatharajan, and M. Priyan, Centralized fog computing security platform for IoT and cloud in healthcare system, in Fog Computing:

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