Guest Editorial Preface

Internet of Things for Smart Healthcare:
Techniques, Advancements, Methodologies, Technologies, and Critical Applications

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Over the past few years, IoT is witnessing tremendous changes from theory to real time critical applications and is changing the way, how mankind is living. Internet of Things (IoT) is termed as ecosystem of connected physical objects that are accessible through Internet. IoT enables the design of smart communication environment between smart homes, transportation, and smart healthcare systems with connectivity of several devices in the network that enables transmission of data within these devices which includes Sensors, Communication devices, Cloud Services, Gateways, Data centers and other visualization elements.

Medical sector is undergoing a sector-wide transformation due to advancements in Information and Communication Technologies. With the convergence of Sensors, Big Data and Cloud and other related Intelligent Technologies, "Smart Healthcare" is gaining strong attention from academicians, industry, governments, and healthcare community. IoT and Artificial Intelligent in smart healthcare plays a vital role by offering better insights of heterogeneous content (e.g. X-Ray, ECG, MRI, ultrasound image, clinical trials, drug discovery) etc. to support affordable and quality patient care. It also supports powerful processing and storage facilities of massive IoT data streams beyond the capability of individual things as well as to automate decision making in real time. IoT and other convergence technologies has the potential to revolutionize many aspects of healthcare industry; however, many technical challenges need to be addressed before this potential can be realized.

The special issue of the *International Journal of Reliable and Quality E-Healthcare* (IJRQEH) contains five papers comprising diverse research areas on Smart Healthcare. The five papers comprehensively covers diverse aspects of Healthcare Applications, services, issues and challenges in Real-Time world.

The first article titled "Fine Tuning for COVID-19 Patterns Detection From Chest Radiographs" proposes an Enhanced Convolutional Neural Network (EConvNet) model for finding the presence and absence of coronavirus disease from chest radiographs. The model proposed is proposed to traditional machine learning algorithms like RF, SVM etc and with experimental results it was observed that suggested model is approximately as accurate as the classifiers based on transfer learning such as Inceptionv3, VGG16 and Densenet121 and takes less training time and uses less memory for operations.

The second paper titled "An Efficient Fog-layer Task Scheduling Algorithm for Multi-Tired IoT Healthcare System" proposes a level monitoring task scheduling (LMTS) algorithm for healthcare applications in FOG to support immediate response to delay-sensitive tasks with minimum delay and network usage. The proposed algorithm was tested on CloudSim simulator and it is observed that performance is better as compared to FCFS and SJF algorithms.

The third paper titled "A DNA Sequencing Medical Image Encryption System (DMIES) Using Chaos Map and Knight's Travel Map: DNA Sequencing Medical Image Encryption System" proposes a novel method of encrypting medical images based on chaos map, knight's travel map, affine transformation and DNA cryptography to prevent hackers for data accessing. The proposed system performs the chaos intertwining logistic map diffusion and confusion process on chosen pixels of medical images. The proposed technique was tested and experimented and it is observed that it is better as compared to standard image encryption schemes and can also withstand attacks like statistical, differential, exhaustive, cropping and noise attack.

The fourth paper titled "Edge Computing in SDN-Enabled IoT-Based Healthcare Framework: Challenges and Future Research Directions" elaborates an exhaustive survey to analyse the role of SDN and edge computing in research and in addition, it also presents the current research in SDN-enabled healthcare and edge computing to propose solutions to tons of diverse healthcare issues.

The fifth paper titled "The Influence of Hospital's Online Healthcare Information Services on Information Adoption Intention" proposes a new theoretical model to observe the influence of hospital's online healthcare information services to elderly patient's information adoption and a case study based on impact of patients on china is also highlighted in the paper.

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