Guest editorial

SI: Intelligent pervasive computing for sustainable health-care systems

Introduction

Today, precise and personalized medical systems take into consideration the potentiality offered new technologies aiming at collecting and managing environmental, healthcare and lifestyle data in pervasive healthcare. As an enhancement of cellular networks, the future-generation of network can be considered as an ultra-high-speed technology which include all types of advanced dominant technologies to provide remarkable services. Pervasive healthcare is considered a solution to many existing problems and a possible future of the current healthcare services. Consequently, new architectures and service management schemes for different applications of the emerging technologies need to be recommended to solve issues related to data traffic capacity, high data rate, and reliability for ensuring QoS.

This special issue focuses on high quality research papers that address significant and pervasive healthcare application and related system development issues in the emerging sustainable application domains. This issue features six selected papers with high quality. The first article, "An optimized security solution based on trust value for multithreaded wireless body area network communication", presents the wireless body area network secure communication techniques and discusses how it directly impact human day today life. This paper aims to focus on battlefield application area of WBAN for implementing security where data must be protected against various possible attacks before delivering to a public network. The major work is focused on security solution to attack nodes and preventing them from legitimate communications.

The second article, "Three-way formal concept clustering technique for matrix completion in recommender system", proposed the recommender systems and relevant recommendation to the online users by applying the recommendation filtering techniques. The proposed TFCC technique is introduced to form the clusters with the basic idea of data representation. The technique is experimented with personalized information filtering systems and can customize the user preference and generate the recommendation based on the taste of interest user. The major issue is resolved to certain amount and it can improve the performance and quality of relevant recommendation to the users.

The third article, "Square microstrip multi band fractal antenna using EBG structure for wireless applications", proposed a new type of EBG fractal square patch microstrip multi band fractal antenna structures that are designed and developed. Their performance parameters with and without EBG structures are investigated and minutely compared with respect to the resonance frequency, return loss, a gain of the antenna and voltage standing wave ratio. The presented antenna geometry indicates better results in comparison with the general squarer patch antenna with EBG in terms of radiation efficiency, return loss, gain and VSWR. The antenna design along with investigation done in this proposed research work with respect to iterations 0, 1 and 2, it is clear from that the square patch fractal antenna with EBG structure offers better results over conventional square fractal patch without EBG structure.

The fourth article is "Telemedicine system using Mobile Internet communication". The proposed telemedicine method is used to deliver patient anywhere during emergency treatment care, and medical information is transferred from one site of patient to another site of specialist doctors by using mobile internet communication. This work explains new concept of telemedicine system for improved high-speed internet. Ambulance system can be

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recommended with mobile phone for patient monitoring system to communicate specialist doctors.

The fifth article, "Reliable IoT-based Healthcare System for Diabetic Retinopathy Diagnosis to defend the Vision of Patients", focussed on design of Internet-of-Things (IoT) architecture-based Diabetic Retinopathy Detection Scheme (DRDS) proposed for identifying Type-I or Type-II diabetes and to specifically advise the Type-II diabetic patients about the possibility of vision loss. The proposed method is used for comfortable, pain-free and harmless diagnosis system using the merits of Dexcom G4 Platinum sensors for estimating blood glucose level in diabetic patients.

The sixth article is "Techno-managerial implications towards communication in internet of things for smart cities". The prime focus of this paper is to realize the IoT systems for smart city's development and implementation of various technologies in the context of the Indian environment. The paper deliberates on the novel techno-managerial approach towards the endeavour of smart cities using the IoT.

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