



Sustainable development through Internet of Things

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The needs of sustainable development of society are satisfied through Artificial Intelligence and miniaturized computers. The requirement of people are increasing exponentially and satisfying the same with generalized framework is a challenging task. The Internet of Things (IoT) provides more sophistication with limited resource. The sustainable development areas like, smart healthcare, smart agriculture, smart transportation is met through deep learning and next generation communication networks. The sustainable development faces challenges on sensor design, communication delay and security challenges in hardware and software side. All these issues are mainly satisfied through design and implementation perspective view. This special issue focuses on state of art including protocol design and low cost sensor design for sustainable development of society using Internet of Things (IoT).

This special issue features 8 selected high quality research articles. The first paper “Dynamic Clustering Approach Based on Wireless Sensor Networks Genetic Algorithm for IoT Applications” explores dynamic clustering based methodology and frame relay nodes are improved to elect the most preferred sensor node. Simulation results elucidates the proposed algorithm provides better results. The second article entitled “A Novel Free Space Communication System Using Nonlinear InGaAsPMicrosystem Resonators for Enabling Power-Control Toward Smart Cities” provides 10 times bandwidth improvement over the radius of 600 m. The overall proposed system will able to detect FSO signal and extract original data. The third article “Genetic Algorithm based

Adaptive Offloading for Improving IoT Device Communication Efficiency” introduces genetic algorithm based adaptive offloading (GA-OA) for effective traffic handling in IoT-infrastructure-cloud environment. The fourth article “A Trust Computed Framework for IoT Devices and Fog Computing Environment” demonstrates the transmission processing concerns of fog nodes and IoT device layer attack during the handoff (mobility) of IoT devices in the fog environment. A secure routed and handoff mechanism is proposed in order to avoid the attack by exploring the trust value and rating of each fog IoT and fog nodes/devices based on their communication behavior. The fifth article “DABPR: A Large-scale Internet of Things- based Data Aggregation Back Pressure Routing for Disaster Management” propose a data aggregation back pressure routing (DABPR) scheme, which aims to simultaneously aggregate overlapping routes for efficient data transmission and prolong the lifetime of the network. The sixth article “I-CARES: Advancing Health Diagnosis and Medication through IoT” describes a novel approach development with IoT prototype of Wireless Sensor Network and Cloud based system to provide continuous monitoring of a patient’s health status. The seventh article “An Enhanced Security Mechanism through Blockchain for EPolling/ Counting Process using IoT Devices” describes an enhanced security mechanism through Blockchain in E-voting application using IoT devices where the user will create an account with proper verification done via voter id and other biometric methods on a smart device. The last article “Development of high-speed FSO transmission link for the implementation of 5G and Internet of Things” proposes the development of high-speed long-reach FSO link for the implementation of 5G and IoT.

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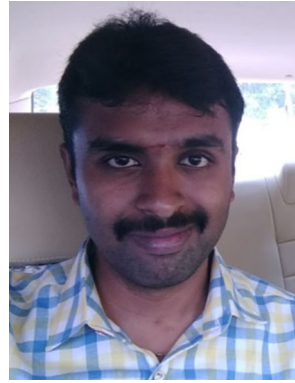
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