Guest Editorial Preface

Special Issue on Developing Smart Grids as Self-Sustainable Ecosystems:

The Roles of Internet of Things (IoT) and Internet of Breath (IoB)

Pit Pichappan, Digital Information Research Labs, Ilford, UK & Chennai, India

Simon Fong, University of Macau, Macau

Smart Grid generation increasingly rely on Internet of Things (IoT) devices and in turn the IoT contributes extensively to the Smart Grids by increasing the readability and interoperability. Recently Internet of Breath (IoB) is projected as an ideal platform for ecosystem as it monitors the carbon level which can contribute for creating a perfect ecosystem. IoT and IoB together lead to record progress in ecosystem through devices, sensors, tools, platforms and datasets.

We have planned this special issue with the *International Journal of Distributed Systems and Technologies,* with the aim of tracking new updated research on Developing Smart Grids for Self-sustainable Ecosystems. We have received good response in terms of quantity of submissions and quality of the content. We have subjected a tight review of all submissions and ended with six papers.

In the first paper on 'Big Data Clustering Analysis Algorithm for Internet of Things Based on K-means,' the author Zhanqiu Yu, Anhui optimized the traditional K-means algorithm to make it fit the demand of big data RFID data network. The ultimate aim is to support for simplifying the processing complexity of big data in Internet of things. The clustering efficiency was improved in the present exercise.

Bin Li, Xin Sun, and Shi Yu in the next paper on 'Designing of Internet of Things Sensor based Information Gateway using SDN Concept' have studied the, the sensor network in order to make the gateway of the Internet of things access to the public network effectively, using on the Software-Defined Network (SDN). The result is the information gateway sensing for the designing of Internet of Things. In the third paper on 'Key Technology for Intelligent Interaction Based on Internet of Things', the author Tianlin Wang basically analysed the intelligent interaction of Internet of things. The context expression model in the IoT environment is the crux of the solution which leads to achieve the intelligent interaction between human and materials in the IoT environment.

With the help of the work on 'Ambiance intelligence approach using IoT and multi-agent system', the authors Meftah Zouai, Okba Kazar, Guadalupe Ortiz Bellot, Belgacem Haba, Nadia Kabachi and M. Krishnamuthy have developed a Cognitive IoT (CIoT) device. They have added an agent layer which ensured intelligence, autonomy, cooperation and organization) in the IoT.

In the next paper on 'Overlap Function based Fuzzified aquatic Behaviour Information extracted Tsunami prediction model' the authors Nikita Jain, Deepali Virmani and Ajith Abraham developed real time alert systems based on the built physical and biological indicators which can sense the near-future hazards based on the past ones. The proposed algorithm which is called as Overlap-based

Fuzzified rated Marine Behavior, (OBF_MB), derives the alert rules when executed on a sea turtle behavior dataset obtained from an online repository. The result is the prediction of Alert, Pre-Alert and No-Alert to generate real-time alerts based on aquatic animal behavior.

The Wireless Sensor Networks have varied applications ranging from medical domain to smart environment. Realizing the potential in the paper on 'Moth Flame Optimization Algorithm Range-Based for Node Localization Challenge in Decentralized Wireless Sensor Network' the authors Mihoubi Miloud, Rahmoun Abdellatif, and Pascal Lorenz, proposed a Moth Flame Optimization Algorithm (MFO) algorithm for competitive exploration. They developed an improved Moth Flame Optimization Algorithm with better localization. They found that the MFO balances exploration and exploitation properly.

We are confident that the issues and studies presented in this issue mark technical elegance and merit and show directions for high level research.

Pit Pichappan
Simon Fong
Guest Editors
IJDST