Foreword and Editorial

International Journal of Artificial Intelligence and Applications for Smart Devices

We are very happy to publish this issue of International Journal of Artificial Intelligence and Applications for Smart Devices by Global Vision Press.

This issue contains 2 articles. Achieving such a high quality of papers would have been impossible without the huge work that was undertaken by the Editorial Board members and External Reviewers. We take this opportunity to thank them for their great support and cooperation.

In the research paper “Enhanced Smart Edge Broker using Fog Computing for Smart Homes”, smart homes with IoT technologies provide convenience in our daily lives. If it is linked to smart city infrastructure through the expansion of service range, it can provide higher quality services. However, if the service range becomes wider, it may increase latency, which may in turn cause an overload. These problems are attributable to the increasing number of sensors that need to be monitored and the expansion of the service area. These problems can be solved by intelligently distributing the data measured in each area. Therefore, in this paper, we propose a Smart Edge Broker to intelligently transmit data traffic generated by a smart city in a wide area to prevent the traffic from being transmitted or bypassed to an area where traffic is not necessary. It is also suitable to operate it as a fog computing model by placing it at the edge of a smart city network.

The paper entitled “Energy-Efficient Sensor Calibration Based on Deep Reinforcement Learning”, the current development of IoT based sensor networks opens up a new era of network communication with a wide range and diverse usage. Sensor calibration to reduce power usage is essential to reduce energy consumption in sensors as well as improve the efficiency of devices. Reinforcement learning (RL) has been received much attention from researchers and now widely applied in many study fields to achieve intelligent automation. Though various types of sensors have been widely used in the field of IoT, rare researches were conducted in resource optimizing. In this novel research, a new style of power conservation has been explored with the help of RL to make a new generation of IoT devices with calibrated power sources to maximize resource utilization. Our proposed model using Deep Q learning (DQN) enables IoT sensors to maximize its resource utilization. This research focuses solely on the energy-efficient sensor calibration and simulation results show that the performance of the proposed method. This proposed model achieve a new state of the arts 96% accuracy for predicting and learning the game and give a novel solution for efficient sensor calibration.

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