Special issue on "Applications of Artificial Intelligence in Evolution of Smart Cities and Societies"

Artificial intelligence (AI) bids serious attention among the researchers and academicians to show how the evolutions of smart city are taking place at different scales. Smart Cities and Artificial Intelligence give a multidisciplinary, joined procedure, using speculative and applied bits of information, for the evaluation of savvy city situations and citizens. The objective of this published special issue is to focus on all aspects and future research directions on the specific area of AI-enabled applications for automatic and intelligent systems in smart cities and societies. We have received 18 manuscripts in total for this special issue across the globe and after the rigorous review process, only 7 manuscripts have been accepted for publication in this special issue. A short review about the commitments for this Special Issue is as underneath:

Yaya Tian, Shaweta Khanna and Anton Pljonkin contribute an article entitled *"Research on Machine Translation of Deep Neural Network Learning Model Based on Ontology".* In this article, authors discussed a machine translation method based on deep neural network learning model on Ontology. The essence of this method is to complement translation skills, so it is more effective for junior translators who are not good enough in translation skills. The experiment and results have been carried out to analyse the role and influence of the intelligent translation system in the translator's translation process.

Xiaofei Wang and Yonghong Guo contribute an article entitled "*Attribute Reduction Algorithm Based Early Warning Model of Sports Injury*". This paper introduces the analyses and studies the early warning model of sports injury based on attribute reduction algorithm. The data has been analysed using questionnaire survey and expert-interviews to summarize the potential injury factors. The application of AI is used to train the neural network with 85% Athletics injury data and tested for the 15% Athletics injury data for the expert validity and accuracy.

Qiu-ming Zhang, Jing Luo and Korhan Cengiz contribute an article entitled "*An Optimized Deep Learning based Technique for Grading and Extraction of Diabetic Retinopathy Severities*". This paper focuses on developing an optimized deep learning-based technique for grading and extraction of diabetic retinopathy severities which can automatically detect lesions and can assess its severity grade as mild, moderate or severe stage. The state-of-the-art comparison reveals the feasibility of the proposed classification method which provides a maximum accuracy improvement of 10.46% with the existing methodology.

Yuyao Li and Ashutosh Sharma contribute an article entitled "*Regional Network Education Information Collection Platform for Smart Classrooms based on Big Data Technology*". In this paper, authors have proposed a regional network education information collection platform based on big data technology to collect student learning data for subsequent analysis and processing. A smart classroom concept is developed after getting the important inputs from student interest. The work presented here utilizes the application of big data to reform the educational activities by optimizing the teaching methods for enabling the smart classroom concept.

Xiaojun Xu, Zhong Tang, Xijia He, Haixuan Wang and Anil Sharma contribute an article entitled "*An Intelligent Information Management System for Retinal Image Storage and Recognition in Chronic Disease using Digital Signal and Image Processing*". This paper contributes in the study and analysis of retinal vascular chronic diseases, by investigating the invulnerability of retinal image information and assessment of quantitative method of the morphological change of retinal vascular network. The presented work significantly contributed in the inter operation of retinal image information between heterogeneous chronic disease information systems.

Xiuli Lu, Zhou Yang, Yongli Yang and Amit Sharma contribute an article entitled "*Research on Estimation of Paddy Field Area Index Based on UAV Remote Sensing Images*". The authors have proposed a method to find the area of paddy crop fields using AI-enabled unmanned aerial vehicle (UAV). Various classification methods such as nearest neighbour, support vector machine and random forest classification are used to extract the paddy crop fields. The results show that nearest neighbour classification method outperforms well as compared to the other classification methods. It is observed that UAV remote sensing and automatic classification can quickly obtain high resolution images and extract rice planting area in plain rice planting area.

Ratish Kumar, Rajiv Kumar and Madhav Ji Nigam contribute an article entitled "*An Improved Lag-Time Compensation Technique in Distributed Networked Control System based on Smith Predictor*". In this paper, the applications of delay-tolerant network and control network are integrated to design a delay resistant controller. Therefore, a predictor controller is designed using Smith predictor controller with an extension to the Markov method to model randomness in delay and plant estimation through Kalman filter. The simulation results show that the designed controller compensate the delay induced in networked controlled system (NCS) and improve the performance effectively.

We hope that the quality research work published in this special issue will be able to serve the concerned humanity, science, agriculture, environment and technology. The Guest Editors are thankful to the authors and reviewers who contributed to this special issue with their scientific work and useful comments, respectively.

Gennady Veselov *Alexey Tselykh*
Ashutosh Sharma *Ruihang Huang*