Editorial

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The recent development in machine learning techniques, intelligent software agents, natural language processing and data mining have significantly modified the classical systems by intelligent systems. Indeed, intelligent technologies provide many possibilities for the complex systems because they can be used to enhance the performance of a system and make more intelligent decisions. Advanced computing in intelligent systems is a promising research field of computational intelligence concerned with the development of intelligent systems.

This special issue aimed at presenting some ideas and works relating to various issues in the fields of advanced computing in intelligent systems (swarm intelligence systems, multi-agent systems and decision making, web mining, intelligent control systems, image processing and 3D modelling).

Papers included in this special issue are based on conference papers of the International Conference on Intelligent Systems and Computer Vision 2015 (ISCV2015),

technically co-sponsored by IEEE Computer Society, which have been published in the IEEE Xplore Digital Library. They have been substantially revised, expanded and rewritten. Nine papers were selected after a peer review process. They were revised in accordance with the suggestions and recommendations from the reviewers. They address prominent methods and algorithms of advanced computing in various intelligent systems.

Three papers look into techniques and algorithms for improving intelligent systems for energy management, in particular on micro grid and wind field. The first paper entitled 'A multi-objective approach for micro grid energy management based on fuzzy multi-agent decision-making process', by Serraji et al., provides a multi-objective optimisation based on fuzzy multi-agent decision-making process to deal with micro grid energy management considering uncertainty and imprecision associated with renewable energy sources, electricity market price and load. The main idea of this approach is promoting the global decision impact on the sub-local decision in order to improve it for efficient power resources management operation. The second paper entitled 'Energy management in a hybrid PV/wind/battery system using a type-1 fuzzy logic computer algorithm', by Faquir et al., presents a computer algorithm based on fuzzy logic control to manage the flow of energy in a stand-alone PV/wind/battery hybrid system. The proposed algorithm uses fuzzy logic to control the energy between production and consumption and ensure the availability of power on demand for an isolated house in the city of Essaouira in Morocco. The third paper entitled 'Intelligent multi-agent system for smart microgrid energy management', by Elamine et al., presents an intelligent energy management for smart microgrid, this system is based on wind power prediction by using the neural network and fuzzy logic control for storage device. A multi-agent model is also proposed to model the smart microgrid.

The paper entitled 'Optimal intelligent control for a variable-speed wind turbine using general regression neural network and adaptive PSO algorithm', by Boufounas et al., provides a robust optimal general regression neural network based on particle swarm optimisation algorithm and combined with the sliding mode controller for a variable speed wind turbine. The main objective of the controller is to optimise the energy captured from the wind.

The paper entitled 'An interval type-2 fuzzy logic PSS with the optimal H∞ tracking control for multi-machine power system', by Meziane and Boumhidi, proposes an interval type-2 fuzzy logic controller combined with the optimal H-∞ tracking control for the multi-machine power system stabiliser (PSS). The type-2 fuzzy logic based on interval value sets is capable for modelling the uncertainty and imprecision and to overcome the drawbacks of the conventional PSS.

The paper entitled 'New air traffic management approach based on expert system and using real-time scheduling algorithms', by Chougdali et al., provides an intelligent expert system based on real-time scheduling algorithms for air traffic management in context of temporal constraints. This system allows choosing the optimal way to schedule all air traffic management operations such as aircrafts landing scheduling. Basic architecture and conceptual design of the knowledge base of this expert intelligent system are proposed.

The paper entitled 'A hybrid optimal weighting scheme and machine learning for rendering sentiments in tweets', by Cherif et al., proposes a method for classifying tweets written in modern standard Arabic (MSA) and Jordanian dialect. Linear programming was used to guess optimal values for 'affective features'. Moreover, a combination of two

classifiers SVM and K-nearest neighbours was employed to detect tweets polarity. The method was applied on a dataset published on UCI Machine Learning Repository.

The paper entitled 'Object tracking in video via particle filter', by Ait Abdelali et al., presents a method for object tracking. It improves the similarity measure for the target representation in the particle filter. A similarity measure is derived by combining the probability product kernels and the integral image, as a similarity measure between target and estimated regions in the frames of video sequence using particles filter.

The paper entitled 'Beautification and efficiency improvement of 3D modelling with the help of geometric constraints', by Annich et al., proposes an approach of 3D reconstruction which is based on bundle adjustment optimisation and geometric constraints. The main purpose is to achieve 3D reconstruction in a simple, fast and efficient way without any prior information about cameras and 3D space.

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