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Preface

It is my pleasure to present Volume 29 of the LNCS *Transactions on Computational Collective Intelligence*. This volume includes ten interesting and original papers that have been selected after peer review.

The first paper, "Fuzzy Logic and PD Control Strategies of a Three-Phase Electric Arc Furnace" by Loredana Ghiormez, Octavian Prostean, Manuela Panoiu and Caius Panoiu, is devoted to the problem of fuzzy control and a conventional proportional derivative control for the electrode positioning system. The authors propose a comparison of the performance analysis of a conventional PD controller and a fuzzy-based intelligent controller. For this, they simulated the systems using Matlab/Simulink software. The results of the closed-loop systems show that the proposed fuzzy controller has better dynamic performance, rapidity, and good robustness compared with the proposed PD controller.

The second paper entitled "Bionic Hand Control in Real Time Based on Electromyography Signal Analysis" by Martin Tabakov, Krzysztof Fonal, Raed A Abd-Alhameed, and Rami Qahwaji describes fuzzy type-1 and type-2 models for the control of a bionic hand in real time. The experiments conducted show comparable results with respect to applied assumptions that give the confidence to implement the proposed concept into real-time control processes.

In the third paper, "Dynamic Decision Support in the Internet Marketing Management," Paweł Ziemba, Jarosław Jankowski, Jarosław Wątróbski solve the problem of selecting an advertisement variant on the basis of dynamically changing values of evaluation criteria. The authors have built a framework, used in an online environment, of a dynamic multi-criteria decision analysis, which is based on the PROMETHEE method that makes it possible to carry out a very detailed analysis of a decision process and obtained solutions. The simulation results are very interesting.

The fourth paper, "Biological Regulation and Psychological Mechanisms Models of Adaptive Decision-Making Behaviors: Drives, Emotions, and Personality" by Amine Chohra and Kurosh Madani, describes a framework for adaptive agent decision-making modeling of biological regulation and psychological mechanisms. For this purpose, the authors have worked out a perception–action cycle scheme for the agent–environment interactions and deduced framework for adaptive agent decision-making modeling. Next, they developed several motivation systems, drives, personality traits, emotions, and a neural architecture implementation of the framework. The results demonstrate how the personality and emotion of the agent can be used to regulate the intensity of the interaction, predicting a promising result in future, and the influences of the agent behavior, which could be very interesting for cooperative agents.

The fifth paper entitled "SWRL-Based Recommendation System for Provision of First Aid" by Martina Husáková proposes an SWRL-based prototype for decision-making if first aid is necessary. The author focuses on a conceptualization

of the first aid application domain with the main aim of building a recommendation-based system providing advice in cases of emergency. The author shows that ontologies used in information and knowledge-based structures play an important role in modelling complex knowledge.

In the sixth paper, "Queue Lengths Management for Deterministic Queuing Systems," Martin Gavalec and Zuzana Němcová present a discussion on two methods for cost optimization of the deterministic queuing system based on the control of the queue lengths. The first method uses the evaluation of actual states in the particular service places according to their development. The second method is based on the simulation of the future states, and on this basis the appropriate time and type of modification of the system set-up are suggested.

The next paper, "W3SD: WordNet and Wiktionary-Based Approach for Word Sense Disambiguation" by Mohamed Ben Aouicha, Mohamed Ali Hadj Taieb, and Hania Ibn Marai, describes the proposed approach of W3SD, which is based on the words surrounding the polysemous word in a context. The meanings of words are represented by vectors composed of weighted nouns using WordNet and Wiktionary features through the taxonomic information content from WordNet and the glosses from Wiktionary. The main contribution of this paper is based on feature selection for disambiguation purpose.

In the eighth paper entitled "An MP/CP-Based Hybrid Approach for Optimization of the Resource-Constrained Scheduling Problems," Paweł Sitek and Jarosław Wikarek propose a hybrid approach based on integration mathematical programming and constraint logic programming to optimize resource-constrained scheduling problems. For evaluating the applicability and computational efficiency of the proposed approach and its implementation programming framework, the authors implement illustrative examples of optimization resource-constrained scheduling problems. A comparison of hybrid approach implementation environments is also presented.

In the ninth paper, "Analysis of the Structured Information for Subjectivity Detection in Twitter," Juan Sixto, Aitor Almeida, and Diego Lopez-de-Ipina analyze the opportunities of the structured information of social networks for subjectivity detection on Twitter micro-texts. They discuss the features of the structured information and their usefulness in the opinion mining sub-domain, especially in the subjectivity detection task. The authors present a novel classification of these features according to their origin.

The last paper entitled "An Efficient Parallel Method for Optimizing Concurrent Operations on Social Networks" by Hanh Phuong Du, Dang Hai Pham, and Hoa Ngoc Nguyen presents an approach to optimize the performance of both reading and writing concurrent operations on large-scale social networks. The authors focus on the directed and unweighted relationships among members in a social network. They work out an efficient parallel method based on utilizing an appropriate data structure, parallelizing the updating actions, and improving the performance of query processing.

April 2018 Ngoc Thanh Nguyen

Transactions on Computational Collective Intelligence

This Springer journal focuses on research in applications of the computer-based methods of computational collective intelligence (CCI) and their applications in a wide range of fields such as the Semantic Web, social networks, and multi-agent systems. It aims to provide a forum for the presentation of scientific research and technological achievements accomplished by the international community.

The topics addressed by this journal include all solutions to real-life problems for which it is necessary to use CCI technologies to achieve effective results. The emphasis of the papers published is on novel and original research and technological advancements. Special features on specific topics are welcome.

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