Guest Editorial

Introduction to the Special Issue on Selected Papers from INISTA 2010 – The International Symposium on INnovations in Intelligent SysTems and Applications.

It is our great pleasure to welcome you to the Special Issue of The Turkish Journal of Electrical Engineering and Computer Sciences on Selected Papers from INISTA 2010 - The International Symposium on INnovations in Intelligent SysTems and Applications. INISTA 2010 establishes a leading technical forum for all engineers, researchers and development analysts to exchange information to advance the state-of-the-art and define the prospects and challenges of intelligent systems in the new century.

INISTA 2010 was organized by Erciyes University, in cooperation with Melikşah University and Yıldız Technical University, on 21-24 June 2010 in Kayseri/TURKEY. The symposium was technically supported by IEEE Computational Intelligence Society, IEEE Turkey Section and IEEE Computational Intelligence Society Turkey Chapter.

A total of 193 papers from 22 countries were submitted to INISTA 2010. 115 of the submitted papers were included in the technical program for presentation and publication in the symposium proceedings after a blind review process. The papers covered a wide range of Intelligent Control Systems, Human-Computer Interaction, Intelligent Approaches in System Identification/Modeling, Machine Learning, Artificial Neural Networks, Fuzzy Logic, Intelligent Approaches in Signal and Image Processing, Particle Swarms, Evolutionary Computations, Natural Language Processing, Artificial Intelligence Algorithms, Genetic Algorithms, Data Mining, Intelligent Approaches in Robotic and Automation, and Biomedical Informatics and Telemedicine.

This special issue contains 7 papers presented at the INISTA 2010 symposium and included in the symposium proceedings. The selection process was based on the points that the papers had received from the reviewers during the blind review process.

In the paper entitled "A Fuzzy Logic Control for Wind/Battery Renewable Energy Production System" by Onur Özdal Mengi and İsmail Hakkı Altaş, a designed Proportional-Derivative (PI) and a Fuzzy Logic Controller (FLC) that fixes the voltage amplitude to a constant value as 380V-50Hz on the loads that supplied from a wind/battery hybrid energy system is explained and compared. The whole designed system is modeled and simulated using Matlab/Simulink GUI (Graphical User Interface) with all of its subcomponents.

In the paper entitled "A Comparative Study of Blind and Non-Blind Trainings in Single Carrier WiMAX (IEEE 802.16-2004) Radio" by Ali Özen, experimental and theoretical bit error rate (BER) performance evaluations of blind and nonblind training techniques are obtained by using single carrier (SC) WiMAX (IEEE 802.16-2004) radio for high-order quadrature amplitude modulation (QAM) channels. The simulation results have demonstrated that the theoretical and experimental studies are compatible with each other and extremely satisfying.

The paper entitled "Load Sharing Based on Moving Roles in Multi-agent Systems" by Şebnem Bora, Ali Murat Tiryaki and Oğuz Dikenelli presents a load sharing approach based on refactoring of agents. This approach defines a new agent called the "monitor agent", which monitors workload of agents in the organization and decides on refactoring of agents.

In the paper entitled "Discrete Particle Swarm Optimization for the Team Orienteering Problem" by Zülal Sevkli and F. Erdoğan Sevilgen, a novel discrete Particle Swarm Optimization (PSO) algorithm is proposed to solve the Team Orienteering Problem (TOP). The algorithm achieves the best known solutions in a short time compared to previous heuristics for the TOP.

In the paper entitled "Training Data Optimization for ANNs using Genetic Algorithms to Enhance MPPT Efficiency of a Standalone PV System" by A. Afşin Kulaksız and Ramazan Akkaya, the genetic algorithm is used to improve the maximum power point tracking efficiency of a PV system with induction motor drive by optimizing input dataset for an artificial neural network model of PV modules.

In the paper entitled "Artificial Bee Colony Algorithm for Dynamic Deployment of Wireless Sensor Networks" by Celal Öztürk, Derviş Karaboğa and Beyza Görkemli, the Artificial Bee Colony algorithm is applied to dynamic deployment of mobile sensor networks to gain better performance by trying to increase the coverage area of the network.

The paper entitled "A Modified Particle Swarm Optimization Algorithm and Its Application to the Multi – Objective FET Modeling Problem" by Ufuk Özkaya and Filiz Güneş introduces a modified Particle Swarm Algorithm to handle multi-objective optimization problems. The algorithm is implemented for the determination of FET model elements subject to the Pareto domination between the scattering parameters and operation bandwidth.

We would like to present our sincere thanks to Prof. Dr. Sadık KARA, the Editor-in-Chief, for his invaluable support since the beginning of this special issue effort. Our special thanks also go to Erol KILIÇ, The Technical Editor, Adnan BAHADIR, The Head of the Department, and the staff at Turkish Journal of Electrical Engineering and Computer Sciences, including Russell A. FRASER, Leslie DEMİR, Abdullah CAN and Meral ESİ, for their kind efforts and assistance in producing this special issue.

We hope that you will enjoy reading this special issue of Turkish Journal of Electrical Engineering and Computer Sciences.

Tülay YILDIRIM and Mehmet Emin YÜKSEL
Guest Editors