

## Augmenting intelligence and neural networks-II

The advanced technological discoveries have greatly contributed to augment the manipulation of humankind. Over the past few years, the field of artificial intelligence has made rapid transformation in different fields ranging from delivering valuable technical insights, predictions and action. Nevertheless, the further progress in this field will develop more intelligent and effective technologies for humans to interact with the real environment. In this perspective, this special issue tends to pave way for the innovative technological discussions in augmented intelligence and neural networks to seamlessly combine human population with artificial intelligence to solve complex real-time challenges.

The seven research papers included in this special issue were selected from among all the submissions by guest editors based on its review and relevance to the extended journal scope. We are pleased to appreciate the willingness of the authors by contributing their innovative research works in organizing this special issue.

The seven extended papers in this special issue will cover the different domains under wireless communication networks, image processing, data analysis and neural networks.

The first paper titled “Food Image Segmentation using Edge Adaptive based Deep-CNNs” discusses mainly on the recognition of Indian foods by proposing an effective segmentation and classification technique called EA-DCNN. The second paper “Secured and flexible user authentication protocol for wireless sensor network” presents a Flexible and Secured User Authentication Protocol to enhance the user security and authentication in wireless sensor networks. Further, the third paper titled “A comparative study on the performance of rule engines in automated ontology learning: a case study with erythemato-squamous disease (ESD)” helps in deriving a ontology construction by integrating the rule language (Semantic Web Rule Language) and rule engine (Jess and Drools) to explore the severity of ESD. Next, the fourth paper entitled “A framework for plant growth analysis and simulation using data analysis techniques” aims at analyzing the plant growth based on factors such as temperature, air moisture, radiant energy, carbon dioxide levels, soil pH and temperature. Moreover, the fifth paper “A prompt CNN-FL model based on multi criteria for a smart vertical handoff in heterogeneous system” paves new way to enrich the demands of network’s traffic and data rate to exchange the packets among these different wireless technologies by integrating Convolutional Neural Network with Fuzzy Logic (CNN-FL) for an optimum vertical handoff decision process. The sixth paper with title “Prediction of user interest fluctuation using fuzzy neural networks in web search” devises new fuzzy neural network techniques in predicting the user interest over the time by analyzing the fluctuations of their search keyword in different times in different scenarios. Finally, the seventh paper titled “SDN-cloud: a power aware resource management system for efficient energy optimization” proposes a software-defined networking (SDN)-enabled cloud for resource management to reduce energy consumption in data center [DC].

From these seven innovative research articles, we observe that the information and communication technologies community is actively engaged in exploring the emerging technologies in artificial intelligence and neural networks domain. We hope that the readers will find this special issue to be informative.



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