

Guest Editorial Preface

Special Issue on Emerging Technologies in Computer Science: PART II

Ahmad Taher Azar, Robotics and Internet-of-Things Lab (RIOTU), Prince Sultan University, Riyadh, Saudi Arabia & Faculty of Computers and Artificial Intelligence, Benha University, Egypt

Computer science spreads a range of topics from theoretical studies of algorithms and the limits of computation to the practical issues of implementing computing systems in hardware and software. There is considerable and growing interest in the emergence of novel technologies in computer science applications. Emerging technologies in computer science include a variety of technologies such as Computational Intelligence, information technology, bioinformatics, biotechnology, cognitive science, robotics, and artificial intelligence.

This special issue will provide an opportunity for readers to engage with a selection of refereed papers that will be presented during the second International Conference of Computing and Informatics 2019 (ICCI-2019) which will be held at Benha University, Egypt during April 16-17, 2019 in addition to other regular submitted papers related to the themes of the special issue. The conference will provide an excellent forum which contributes new results in all areas of computer science, Information Technology and computer systems. The conference focuses on all technical and practical aspects of computing and informatics with applications in real-world and scientific problems. The goal of this conference is to bring together researchers and practitioners from academia and industry to focus on computing, information technology, computer engineering and establishing new collaborations in these areas. ICCI-2019 seeks to promote research that carries a strong conceptual message (e.g., introducing a new concept or model, opening a new line of inquiry within traditional or interdisciplinary areas, or introducing new techniques or new applications of known techniques).

The contents of the selected sixth articles are described briefly as follows.

The first paper titled “An Efficient Methodology for Resolving Uncertain Spatial References in Text Documents” by Raja et al. proposes the Fuzzy Extraction, Resolving and Clustering (FERC) architecture which uses fuzzy logic techniques to identify and cluster uncertain textual spatial reference. When the text corpus is queried with a spatial-keyword, FERC returns a set of relevant documents sorted in view of the fuzzy pertinence score. Any two documents may be compared in light of the spatial references exist in them and their fuzzy similarity score is presented. This enables to find the degree to which the two documents speak about a specified location. The proposed architecture provides a better result set to the user, unlike a Boolean search where the document is either rated relevant or irrelevant.

The second paper titled “A Survey On Blood Image Disease Detection Using Deep Learning” by Loey et al. presents a survey on the different traditional techniques and deep learning approaches that have been employed in blood diseases diagnosis based on blood cells images. The paper covers

the important aspects of each both approaches. It covers 19 research works divided into 11 traditional techniques and 8 advanced techniques. Some research work used image processing and machine learning algorithms such as K-means, K-nearest neighbor, Naïve Bayes, SVM. Another research work used deep learning especially (Convolutional Neural Networks) is the most widely used in the field of blood image diseases detection and more accurate, faster, and less cost. In addition, it analyses a number of recent works that have been introduced in the field including the dataset size, the used methodologies, the obtained results, etc.

The third paper titled “Tracking How a Change in a Telecom Service affects its Customers using Sentiment Analysis and Personality Insight” by Adl and Khamis presents a combination of four stages of text pre-processing, personality analysis, sentiment analysis and chatbot system. This paper shows the effect of using the personality traits (Agreeableness, Emotional range) with sentiment analysis that help for reaching to a full description of customer feel. Combining the Sentiment Analysis ‘Naïve Bayes technique’ in the natural language processing and personality insights pre-learning stage and adding feedback using the obtained results achieve higher accuracy than using the traditional sentiment analysis techniques.

The fourth paper titled “Withdrawal prediction framework in a Virtual Learning Environment” by Hlioui et al. proposes presents a framework for a withdrawal prediction model for the data of Open University, one of the largest distance learning institutions. The main contribution of this work covers two main aspects: relational-to-tabular data transformation and data mining for withdrawal prediction. This process’ main steps are: (1) tackling the unbalanced data issue using the SMOTE algorithm, (2) voting over seven different features’ selection algorithms, (3) learning different classifiers for withdrawal prediction. The experimental study demonstrates that the decision trees exhibit better performance in term of the F-measure value compared to the other tested models. Furthermore, the data balancing and feature selection processes show a crucial role for guiding the predictive model towards a reliable module

The fifth paper titled: “Occluded Object Tracking System (OOTS)” by Fayez et al. aims to propose a system known as Occluded Object Tracking System (OOTS). It is a hybrid system constructed from two algorithms: a fast technique Circulant Structure Kernels with Colour Names (CSK-CN) and an efficient algorithm occlusion-aware Real-time Object Tracking (ROT). The proposed OOTS is evaluated on standard visual tracking benchmark databases. The experimental results proved that the proposed OOTS system is more reliable and provides efficient tracking results than other compared methods.

ACKNOWLEDGMENT

The Guest Editor, Prof. Ahmad Taher Azar, would like to thank all the authors for submitting their manuscripts in this special issue. He would like to acknowledge the reviewers for their contributions in reviewing the papers and providing constructive and useful comments to the authors. He does highly appreciate the great effort of IGI Global editing team as well as our Assistant Development Editor, Alexis Miller, for excellent work during the publication process of this special issue.

Ahmad Taher Azar
Editor-in-Chief
IJSSMET

Ahmad Azar has received a M.Sc. degree in 2006 and a PhD degree in 2009 from Faculty of Engineering, Cairo University, Egypt. He is a research associate Professor at Prince Sultan University, Riyadh, Kingdom Saudi Arabia. He is also an associate professor at the Faculty of Computers and Artificial intelligence, Benha University, Egypt. Prof. Azar is the Editor in Chief of International Journal of System Dynamics Applications (IJSDA) and International Journal of Service Science, Management, Engineering, and Technology (IJSSMET) published by IGI Global, USA. Also, he is the Editor in Chief of International Journal of Intelligent Engineering Informatics (IJIEI), Inderscience Publishers, Olney, UK. Prof. Azar has worked as associate editor of IEEE Trans. Neural Networks and Learning Systems from 2013 to 2017. He is currently Associate Editor of ISA Transactions, Elsevier and IEEE systems journal. Dr. Ahmad Azar has worked in the areas of Control Theory & Applications, Process Control, Chaos Control and Synchronization, Nonlinear control, Renewable Energy, Computational Intelligence and has authored/coauthored over 200 research publications in peer-reviewed reputed journals, book chapters and conference proceedings. He is an editor of many Books in the field of Fuzzy logic systems, modeling techniques, control systems, computational intelligence, Chaos modeling and Machine learning. Dr. Ahmad Azar is closely associated with several international journals as a reviewer. He serves as international programme committee member in many international and peer-reviewed conferences. Dr. Ahmad Azar is a senior Member of IEEE since Dec. 2013 due to his significant contributions to the profession. Dr. Ahmad Azar is the recipient of several awards including: Benha University Prize for Scientific Excellence (2015, 2016, 2017 and 2018), The paper citation Award from Benha University (2015, 2016, 2017 and 2018). In June 2018, Prof. Azar has been awarded the Egyptian State Prize in Engineering Sciences, the Academy of Scientific Research and Technology of Egypt, 2017. In July 2018 he has been selected as a member of Energy and Electricity Research council, Academy of Scientific Research, Ministry of Higher Education. In Aug. 2018 he has been selected as senior Member of International Rough Set Society (IRSS). Prof. Ahmad Azar is the Chair of IEEE Computational Intelligence Society (CIS) Egypt Chapter, Vice chair of IEEE Computational Intelligence Society Interdisciplinary Emergent Technologies Task Force, vice-Chair Research Activities of IEEE Robotics and Automation Society Egypt Chapter, Committee member of IEEE CIS Task Force on Fuzzy Logic in Medical Sciences Also, he is the Vice-president (North) of System dynamics Africa Regional Chapter and an Academic Member of IEEE Systems, Man, and Cybernetics Society Technical Committee on Computational Collective Intelligence.