Editorial

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Biographical notes: Akash Kumar Bhoi (BTech, MTech, PhD) is working as Assistant Professor-SG (Research) in the Department of Computer Science and Engineering at Sikkim Manipal Institute of Technology (SMIT), India, since 2012. He is also working (Period: 20th Jan 2021 - 19th Jan 2022) as Research Associate at Wireless Networks (WN) Research Laboratory, Institute of Information Science and Technologies, National Research Council (ISTI-CRN) Pisa, Italy. He is a University PhD Course Coordinator for "Research & Publication Ethics (RPE)". He is a member of IEEE, ISEIS, and IAENG, an associate member of IEI, UACEE, and an editorial board member reviewer of Indian and international journals. He is also a regular reviewer of reputable journals, namely IEEE, Springer, Elsevier, Taylor and Francis, Inderscience, etc. His research areas are Biomedical Technologies, the Internet of Things, Computational Intelligence, Antenna, Renewable Energy. He has published several papers in national and international journals and conferences. He has 100+ documents registered in the Scopus database by the year 2020. He has also served on numerous organising panels for international conferences and workshops. He is currently editing several books with Springer Nature, Elsevier and Routledge and CRC Press. He is also serving as Guest editor for special issues of the journal like Springer Nature and Inderscience.

Deepak Gupta is an eminent academic. With 13 years of teaching experience and having spent two years in industry, he focuses on rational and practical learning. He has served as Editor-in-Chief, Guest Editor, and Associate Editor of SCI and various other respected journals. He completed his postdoc at Inatel, Brazil, and PhD at Dr. A.P.J. Abdul Kalam Technical University. He has published widely in the fields of human–computer interaction, intelligent data analysis, nature-inspired computing, machine learning, and soft computing, including 35 books with national/international publishers (Elsevier, Springer, Wiley, Katson), and 87 papers in leading reputed international journals and conferences. He is the convener and organizer of 'ICICC' Springer conference series.

Pradeep Kumar Mallick is currently working as Senior Associate Professor in the School of Computer Engineering, Kalinga Institute of Industrial technology (KIIT) Deemed to be University, Odisha, India. He has also served as Professor and Head Department of Computer Science and Engineering, Vignana Bharathi Institute of Technology, Hyderabad. He has completed his Post-Doctoral Fellow (PDF) from Kongju National University South Korea, PhD from Siksha 'O' Anusandhan University, MTech (CSE) from Biju Patnaik University of Technology (BPUT), and MCA from Fakir Mohan University Balasore, India. Besides academics, he is also involved in various administrative activities, Member of Board of Studies to C.V. Ramman Global University Bhubaneswar, Member of Doctoral Research Evaluation Committee, Admission Committee etc. His area of research includes Data Mining, Image Processing, Soft Computing, and Machine Learning. Now he is the editorial member of Korean Convergence Society for SMB. He has published 12 edited books, 1 textbook and more than 80 research papers in national and international journals and conference proceedings to his credit.

Chuan-Ming Liu is a Professor in the Department of Computer Science and Information Engineering (CSIE), National Taipei University of Technology (Taipei Tech), Taiwan, where he was the Department Chair from 2013 to 2017. Currently, he is pointed to be the Head of the Extension Education Center at the same school. He received his PhD in Computer Science from Purdue University in 2002 and joined the CSIE Department in Taipei Tech in the spring of 2003. In 2010 and 2011, he has held visiting appointments with Auburn University, Auburn, AL, USA, and the Beijing Institute of Technology, Beijing, China. He has services in many journals, conferences and societies as well as published more than 100 papers in many prestigious journals and international conferences. His current research interests include big data management and processing, uncertain data management, data science, spatial data processing, data streams, ad-hoc and sensor networks, location-based services.

The paper titled 'The application of plug-and-play ADMM framework and BM3D denoiser for compressed sensing MR image reconstruction', by Xiaojun Yuan et al., proposes a flexible plug-and-play framework to incorporate the block matching 3D (BM3D) denoising algorithm as prior into the plug-and-play ADMM reconstruction procedure for CS-MRI reconstruction, termed BM3D plug-and-play ADMM (BPA) method.

Bandana Bali and Brij Mohan Singh, in their work entitled 'Unification of firefly algorithm with density-based spatial clustering for segmentation of medical images', propose a computer-aided approach for brain image segmentation to figure out various characteristics of digital images which are responsible for the identification of brain tumours with MRI images. The proposed Density-Based Spatial Clustering Fused with Firefly (DB-FF) method is based on density-based spatial clustering and firefly algorithm, which has a significant place in nature-inspired computing techniques. In this research, the solutions of the firefly algorithm have been improved by the density-based spatial clustering algorithm, and a soft computing criterion has also been used as a fitness function. The proposed method has been tested on commonly used images from Harvard Whole Brain Atlas, and the results of this method have been compared with other standard benchmarks from the survey.

The paper titled 'Alzheimer disease diagnosis based on feature extraction using optimised Crow Search Algorithm and deep learning', by Sonal Bansal et al., proposes an Optimised Crow Search Algorithm (OCSA) for early diagnosis of AD which, when applied to the raw MRI image features, yields a highly representative dense embedding of the same. The mapping learned between this embedding and the image labels resulted in correctly diagnosing 98.62% of AD patients' dataset.

Pavan Kumar Paruchuri et al., in their work entitled 'An intelligent COVID-19 classification model using optimal grey-level co-occurrence matrix features with extreme learning machine', present a new automated COVID-19 diagnosis model using optimal grey level co-occurrence matrix (GLCM) based feature extraction and extreme learning machine (ELM) based classification. The input chest images undergo pre-processing to improve the image quality. Next, the optimal GLCM features are derived by the use of the Elephant Herd Optimisation (EHO) algorithm. Then, the ELM model is applied to perform the classification task. The performance of the OGLCM-ELM model has been validated using the benchmark dataset, and the experimental outcome ensured the superior performance of the proposed model over the compared methods.

Koustav Dutta et al., in their paper titled 'MED-NET: a novel approach to ECG anomaly detection using LSTM auto-encoders', propose a highly novel approach to analyse and detect ECG signals for tracking of anomalies using Hybrid Deep Learning Architectures (HDLA). The proposed scheme works by implementing self-supervised pattern recognition according to the mechanism of Long Short Term Memory (LSTM) networks in terms of auto encoder and decoder. Finally, the proposed scheme is tested on Physionet dataset.

Velmurugan Subbiah Parvathy et al., in their work titled 'Multimodality medical image fusion based on non-sub-sampled contourlet transform', present a technique with which they successfully fused the Magnetic Resonance Imaging (MRI) and Computed Tomography (CT) images and created a single merged image, which provides a new

integrated diagnostic method. Initially, two unique sets of images, for example, MRI and CT, were considered for the fusion procedure. These pairs of images are initially used for NSCT to generate the image to divide the high frequency module and the low frequency module. The mixing policies are used here to generate and combine high and low frequencies.

The paper titled 'Application and evaluation of classification model to detect autistic spectrum disorders in children', by Hrudaya Kumar Tripathy et al., presents a work which deals with the autistic dataset's efficient categorisation using various classifiers such as Naive Bayes, neural network, and random forest. At the same time, Python is a programming tool to determine algorithms with optimum accuracy by multiple simulations. An autistic dataset from the UCI repository was used for the research study. It was used to build a model where the parents of a suspected autistic child can detect autism by providing their answers to some particular questions relating to autism characteristics.

Monalisa Mohanty et al., in their work titled 'Detection of supraventricular tachycardia using decision tree model', present a detection approach by analysing electrocardiogram (ECG) signals. ECG is one of the most significant diagnostic tools used for the recognition of the health of a heart. The increasing number of heart patients has led to essential progress in the techniques of automatic detection for detecting the numerous kinds of abnormality or the arrhythmias of the heart to reduce the pressure and share the load of the physicians. ECG recordings have been acquired from MIT-BIH supraventricular arrhythmia database (SVDB) of the Physionet repository. Each record consists of ST, N and VF rhythms with a duration of 30 minutes. Then, using various techniques, a set of features has been extracted for ST, N and VF and finally fed into a classifier such as logistic model tree (LMT) or multi-layer perceptron (MLP) to classify the ECG signals.

Dhawan Singh et al., in their work titled 'IoT implementation strategies amid COVID-19 pandemic', present IoT-based solution strategies. They have studied and analysed the possibilities, opportunities and applications of IoT technology in the field of food safety and quality control, automatic disinfection, healthcare systems, wearable health devices, and personal hygiene. They have also assessed the different features of currently available IoT design platforms and standard protocols and proposed feasible and dynamic strategies for their implementations. Results showed that IoT technology has immense possibilities to provide low cost and sustainable solutions. Not only is it an ideal solution for upgrading existing systems to cater to the guidelines for checking the spread of pandemic but also it provides energy-efficient, low cost, and highly secure systems.

The Guest Editors would like to thank all the authors for submitting their manuscripts in this Special Issue on Computational Advances in Healthcare Solutions. We also acknowledge the reviewers for their contributions in reviewing the papers and providing constructive and valuable comments to the authors. Finally, we specially thank the Editor-in-Chief of *Int. J. Computer Applications in Technology* (*IJCAT*), Prof. Quan Min Zhu (University of the West of England, UK), for his great help and consistent support, which makes the publication of this special issue possible in such an organised time frame. Part I of this special issue was published with the citation IJCAT 2021 V64 N4.