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Editorial

Dear Colleague:
Welcome to volume 27(S1) of the Intelligent Data Analysis (IDA) Journal.

In this special issue on "Machine Learning Based Computational Bioinformatics for Healthcare Big Data" of the IDA journal a total of sixteen articles has been published exploring the latest advancements, methodologies, and applications of machine learning in computational bioinformatics for healthcare big data.

The first group of articles are about detection, prediction and classification using Intelligent data analysis. In the first article by K. Prasanna et al., the author uses deep learning models predict the correct head position for Cephalometric analysis. The experimental analysis ascertains that VGG-4 outperformed the VGG-3, U-Net, and ResNet in estimating the head position to take an X-ray on a test dataset with a measured accuracy of 98%. In the second article by Mohamamd Farukh Hashmi et al. a new framework is implemented for identifying dementia using EEG and EMG data utilising signal processing and machine learning algorithms in MNE environment. This study discovered a highly successful new technique for diagnosing mild to moderate Alzheimer's disease. In the third article by Vishwanath Madhava Shervegar et al., the author proposes an improved heart sound classification by utilizing two-stage Low pass filtering and Wavelet Threshold (WT) technique with subsequent Feature Extraction (FE) using Wavelet Scatter Transform and further classification utilizing the Cubic Polynomial Support Vector Machine (SVM) technique for CVD. Promising results with maximum noise removal of up to 99% are exhibited by the method. From the PCG, Wavelet Scattering (WS) features were extracted, which were later wielded to categorize the PCG utilizing SVMs with 99.72% accuracy for different sounds. In the last article by Mustafa Musa Jaber et al. a novel technique is suggested to avoid an epileptic seizure and discover the seizure origin from the utilized wearable sensors. According to clinical trials, CAE-CNN outperforms the current wearable sensor-based treatment for unresolved chronic epilepsy patients.

The second group of articles are about using uses digital images along with intelligent data analysis for healthcare applications. In the first article by Prashant Kumar Shukla et al. human blood is exposed to varying concentrations of chosen nanomaterial with potential medical applications. The findings imply that nanoparticles circulating in the bloodstream have significant clinical implications. In the second article by Dinesh Jackson Samuel et al. the research focus on Real-time MRI lung images that were revealed using three grade processes by manipulating nanophotonics components, mapping by deep learning, machine learning, and pattern recognition. The result for the inverse design using CNN returns the efficient inverse design of test data that can be designed according to the required pressure distribution.

The third group of articles are about generalized data analysis on the healthcare development. In the first article by Saif Mohameed Ali et al., the authors identify the crucial aspects that will lead to the success of impacting the technical staff towards their positive acceptance and behavior with regard to the employment of e-Health information system in Iraqi hospitals. In the next article by Na Qi et al. a questionnaire survey is conducted on 268 middle-aged people to record the subjects' willingness to purchase elderly health care products and their reasons, concerns, satisfaction, and future demands. The results show that, 181 people have purchased elderly health care products, accounting for 67.36%; the subjects are more concerned about the quality and safety of elderly health care products, accounting for 92.56% and 91.85% respectively.

The last group of articles are about intelligent data analysis for specific healthcare problems based on heart, skin and joints. In the first article by Xinghui Liu et al., the author explores changes in the plasma atrial natriuretic peptide (ANP) and brain natriuretic peptide (BNP) in patients with left-to-right shunt congenital heart disease (CHD) before and in the early stage after interventional occlusion and to evaluate the clinical significance. The study detected changes in the serum ANP and BNP levels in patients with left-to-right shunt congenital heart disease before and on the third day after interventional occlusion to evaluate the early changes in left-to-right shunt congenital heart disease after interventional occlusion through neuroendocrine activation. In the second article by G.N.Vivekananda et al. a Retracing-efficient IoT model for identifying the moles, skin tags, and warts using Automatic lumen detection with the help of IoT-based Variation regularity is proposed with the technique imposed IoMT, Automatic lumen detection, Variation regularity, and trigonometric algorithm. The approach is tested for varying datasets, and comparative analysis is performed that reflects the effectiveness of the proposed system with high accuracy, thus contributing to the development of a perfect platform for skincare to the early detection and diagnosis of skin conditions. In the last article by Zhi Li et al. computer BIOPAC Systems tool is used to analyze Shanghai dialect and Mandarin which refers to the relationship between prosody and respiration in reading fable. The result shows that on the situation of fable literary style with flexible feature, the text of the proficiency can significantly increase the complexity of the respiration curve, showing a more special features such as “breathless” pronunciation.

In conclusion, we would like to extend our appreciation to all the authors who have made valuable contributions to this special issue, along with the reviewers who have played a crucial role in maintaining its quality. Furthermore, we would like to express our gratitude to IDA for their unwavering support and dedication to publishing exceptional research.

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