Foreword

Artificial intelligence (AI) finds applications in most of the areas of human life including health. The AI techniques provide a platform for developing automated processes based on the learning processes. There are many AI applications in the healthcare field such as detecting disease, gathering the patient information, intelligent interaction between patient and doctor, disease information sensing, diagnosis and care plans. Various AI-based applications and devices such as intelligent health information gathering, intelligent communication and service, intelligent diagnosis and carefulness strategies, intelligent medical devices, intelligent precision medicine etc. are currently deployed to address the patient's health-related issues.

The book titled *Handbook of Research on Advancements of Artificial Intelligence in Healthcare Engineering* edited by Dilip Singh Sisodia, Ram Bilas Pachori, and Lalit Garg has presented newly developed methods based on artificial intelligence (AI) for computer-aided diagnosis of various diseases. The book has proposed automated methods for epilepsy detection from electroencephalogram (EEG) signals, automated identification of brain abnormalities using magnetic resonance imaging (MRI), diagnosis of cardiac disorder using electrocardiogram (ECG) signals, health care assessment based on stress EEG signals, modeling of cognitive events from EEG signals, 3D lung segmentation from computerized tomography (CT) images, diagnosis of cancer, Devanagari script-based P300 speller system, diagnosis of sickle cell disease, mental health analyzer, diagnosis of tension-type headache, clinical data analysis etc. Reviews related to machine learning algorithms and heart sound analysis have been included in this book.

The presented methodologies will be very useful for doctors, clinicians, engineers, and researchers for their research work and diagnosis. This book also can be served as a good reference for undergraduate and postgraduate students of electrical, computer science, biomedical engineering, and mathematics disciplines.

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