

Book

# Biomedical Signal Processing for Healthcare Applications

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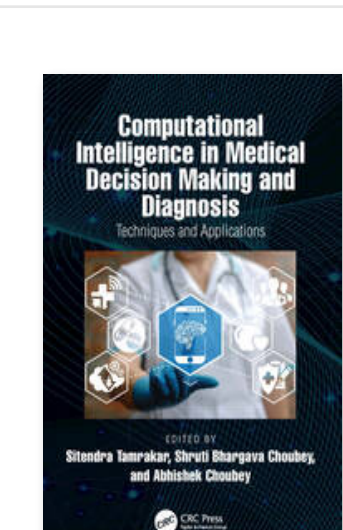
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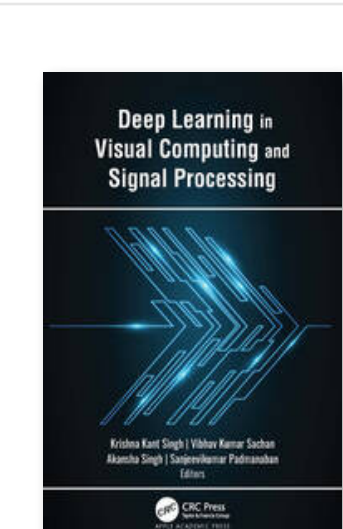
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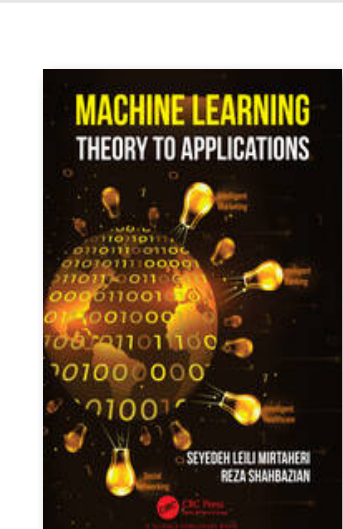
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## ABSTRACT

This book examines the use of biomedical signal processing—EEG, EMG, and ECG—in analyzing and diagnosing various medical conditions, particularly diseases related to the heart and brain. In combination with machine learning tools and other optimization methods, the analysis of biomedical signals greatly benefits the healthcare sector by improving patient outcomes through early, reliable detection. The discussion of these modalities promotes better understanding, analysis, and application of biomedical signal processing for specific diseases.

The major highlights of **Biomedical Signal Processing for Healthcare Applications** include biomedical signals, acquisition of signals, pre-processing and analysis, post-processing and classification of the signals, and application of analysis and classification for the diagnosis of brain- and heart-related diseases. Emphasis is given to brain and heart signals because incomplete interpretations are made by physicians of these aspects in several situations, and these partial interpretations lead to major complications.

## FEATURES

- Examines modeling and acquisition of biomedical signals of different disorders
- Discusses CAD-based analysis of diagnosis useful for healthcare
- Includes all important modalities of biomedical signals, such as EEG, EMG, MEG, ECG, and PCG
- Includes case studies and research directions, including novel approaches used in advanced healthcare systems

This book can be used by a wide range of users, including students, research scholars, faculty, and practitioners in the field of biomedical engineering and medical image analysis and diagnosis.

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