

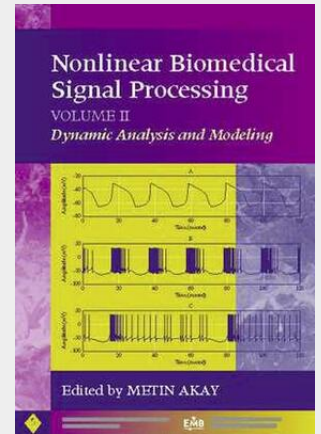
Akay

Nonlinear Biomedical Signal Processing, Volume 2

Dynamic Analysis and Modeling

Biomedical / Electrical Engineering Nonlinear Biomedical Signal Processing Volume II: Dynamic Analysis and Modeling A volume in the IEEE Press Series on Biomedical Engineering Metin Akay, Series Editor Featuring current contributions by experts in signal processing and biomedical engineering, this book introduces the concepts, recent advances, and implementations of nonlinear dynamic analysis methods. Together with Volume I in this series, this book provides comprehensive coverage of nonlinear signal and image processing techniques. Nonlinear Biomedical Signal Processing: Volume II combines analytical and biological expertise in the original mathematical simulation and modeling of physiological systems. Detailed discussions of the analysis of steady-state and dynamic systems, discrete-time system theory, and discrete modeling of continuous-time systems are provided. Biomedical examples include the analysis of the respiratory control system, the dynamics of cardiac muscle and the cardiorespiratory function, and neural firing patterns in auditory and vision systems. Examples include relevant MATLAB(r) and Pascal programs. Topics covered include: * Nonlinear dynamics * Behavior and estimation * Modeling of biomedical signals and systems * Heart rate variability measures, models, and signal assessments * Origin of chaos in cardiovascular and gastric myoelectrical activity * Measurement of spatio-temporal dynamics of human epileptic seizures. A valuable reference book for medical researchers, medical faculty, and advanced graduate students, it is also essential reading for practicing biomedical engineers. Nonlinear Biomedical Signal Processing, Volume II is an excellent companion to Dr. Akay's Nonlinear Biomedical Signal Processing, Volume I: Fuzzy Logic, Neural Networks, and New Algorithms.

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