Singular Spectrum Analysis of Biomedical Signals

Saeid Sanei, Hossein Hassani
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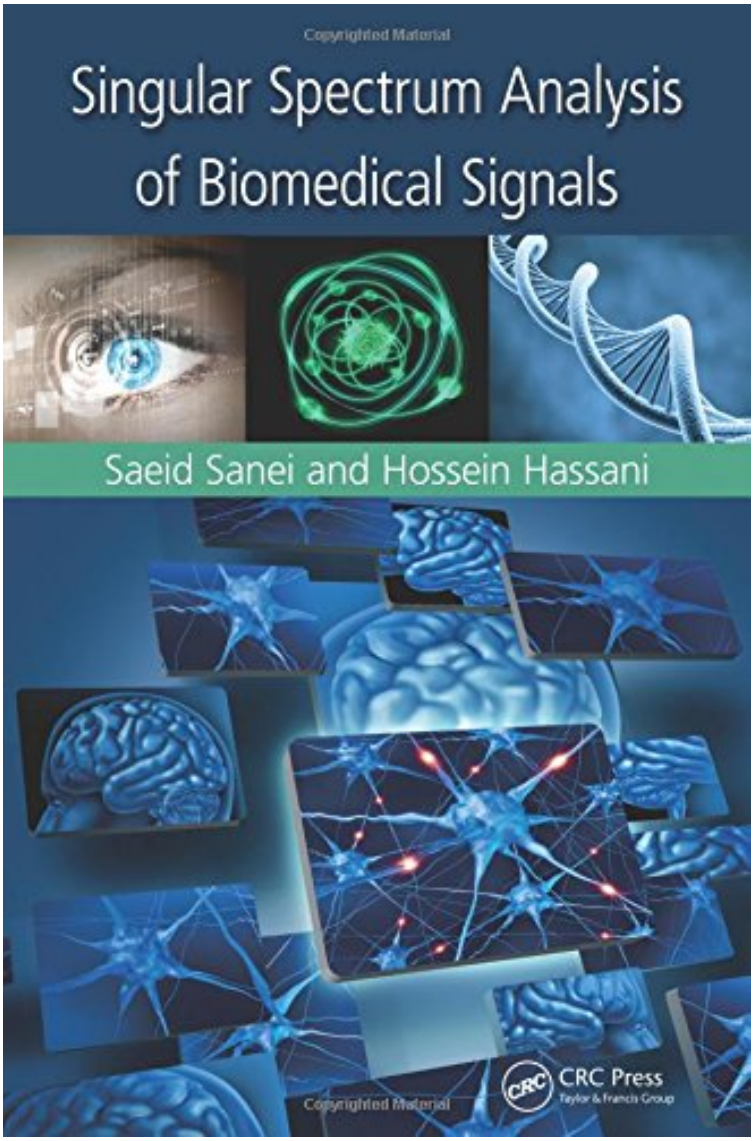

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Saeid Sanei, Hossein Hassani : Singular Spectrum Analysis of Biomedical Signals before purchasing it in order to gage whether or not it would be worth my time, and all praised Singular Spectrum Analysis of Biomedical Signals:

Recent advancements in signal processing and computerised methods are expected to underpin the future progress of biomedical research and technology, particularly in measuring and assessing signals and images from the human body.

This book focuses on singular spectrum analysis (SSA), an effective approach for single channel signal analysis, and its bivariate, multivariate, tensor based, complex-valued, quaternion-valued and robust variants. SSA currently has numerous applications in detecting abnormalities in quasi-periodic biosignals, such as electrocardiograms, (ECGs or EKGs), oxygen levels, arterial pressure, and electroencephalograms (EEGs). Singular Spectrum Analysis of Biomedical Signals presents relatively newly applied concepts for biomedical applications of SSA, including: Signal source separation, extraction, decomposition, and factorization Physiological, biological, and biochemical signal processing A new SSA grouping algorithm for filtering and noise reduction of genetics data Prediction of various clinical events The book introduces a new mathematical and signal processing technique for the decomposition of widely available single channel biomedical data. It also provides illustrations of new signal processing results in the form of signals, graphs, images, and tables to reinforce understanding of the related concepts. Singular Spectrum Analysis of Biomedical Signals enhances current clinical knowledge and aids physicians in improving diagnosis, treatment and monitoring some clinical abnormalities. It also lays groundwork for progress in SSA by making suggestions for future research.