Signals and Systems Analysis In Biomedical Engineering

Robert B. Northrop
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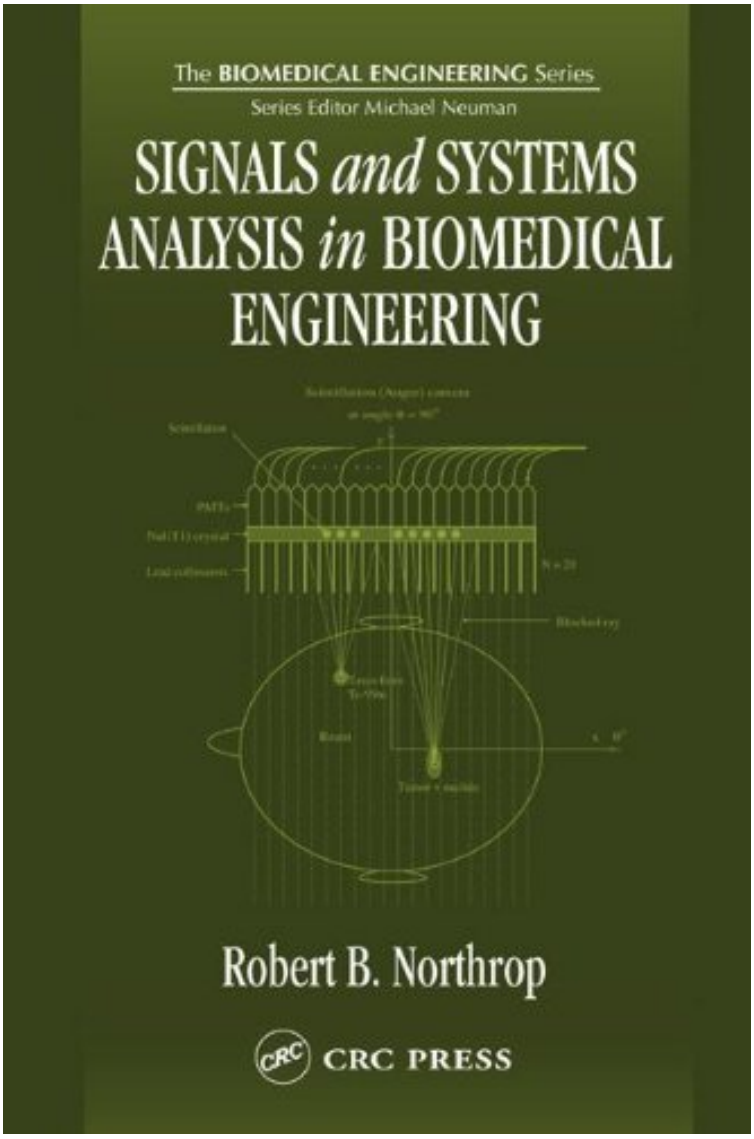

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Robert B. Northrop : Signals and Systems Analysis In Biomedical Engineering before purchasing it in order to gage whether or not it would be worth my time, and all praised Signals and Systems Analysis In Biomedical Engineering:

The interdisciplinary field of biomedical engineering requires its practitioners to master not only engineering skills,

but also a diversity of material in the biological sciences. This text helps biomedical engineers strengthen their skills in the common network of applied mathematics that ties together these diverse disciplines. Based on the author's 30 years of experience in teaching as well as his personal research on neurosensory systems, Signals and Systems Analysis in Biomedical Engineering provides a ready source of information on those specialized mathematical techniques most useful in describing and analyzing biomedical signals, including ECG, EEG, blood pressure, biochemical spectrograms, and tomographic images. Enriched with many examples that promote sound practical analysis, this book:Presents the traditional systems mathematics used to characterize linear time-invariant (LTI) systems and, given inputs, find their outputsExplains the relations between impulse response, real convolution, transfer functions and frequency response functionsReviews specialized mathematical techniques used to characterize and model nonlinear systemsIntroduces the basic mathematical tools used to describe noise and how it propagates through LTI and NLTI systemsDescribes how signal-to-noise ratio can be improved by signal averaging and linear and nonlinear filtering