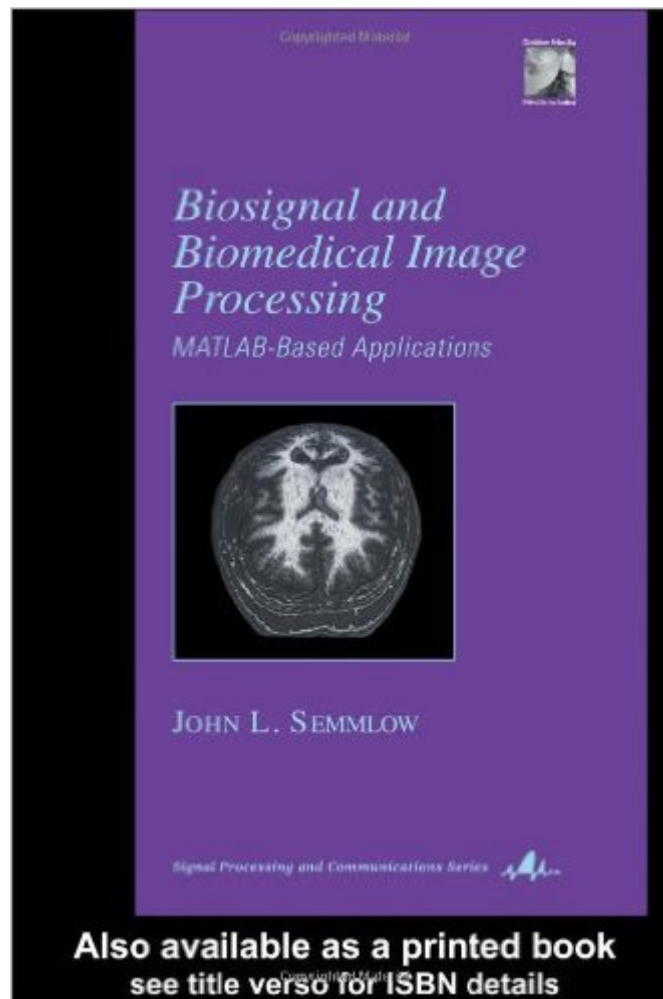# Biosignal And Medical Image Processing (Signal Processing And Communications)

Synopsis

Relying heavily on MATLABÂ® problems and examples, as well as simulated data, this text/reference surveys a vast array of signal and image processing tools for biomedical applications, providing a working knowledge of the technologies addressed while showcasing valuable implementation procedures, common pitfalls, and essential application concepts. The first and only textbook to supply a hands-on tutorial in biomedical signal and image processing, it offers a unique and proven approach to signal processing instruction, unlike any other competing source on the topic. The text is accompanied by a CD with support data files and software including all MATLAB examples and figures found in the text.

Book Information

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Customer Reviews

This book assumes that you have both a prior knowledge of Matlab and of signal processing concepts. It spends the first three chapters going over measurement and transducer systems, basic signals and systems, and classical methods of spectral analysis. Even though these chapters are meant to be a quick review, there are some Matlab implementations of basic algorithms in each chapter. Chapter four introduces digital filters and shows Matlab implementations of both IIR and FIR filters. A special treat of chapter four is that some time is spent introducing the reader to the Matab signal processing toolkit. Now that the basics of digital filtering have been introduced, more advanced signal processing techniques are tackled. These include modern methods of spectral

analysis and also time-frequency analysis using such methods as the Wigner-Ville distribution. Again, in all cases, the equations are concise, the prose is very accessible, and all concepts are demonstrated using Matlab programs. There is a separate chapter devoted to the wavelet transform and to its use in filter banks, denoising, and feature detection. Quite frankly, I found this chapter far more accessible than entire books that have been devoted to the subject, especially if you are interested in getting to the heart of the matter and using wavelets to perform a task. Two more chapters round out the section of the book on general signal processing techniques- one is about adaptive filters and another on principal component analysis. The final four chapters of the book concern themselves with image processing and Matlab, and the Matlab image processing toolkit in particular.

Biosignal and Medical Image Processing (Signal Processing and Communications) Bayesian Signal Processing: Classical, Modern and Particle Filtering Methods (Adaptive and Cognitive Dynamic Systems: Signal Processing, Learning, Communications and Control) Imagery and Disease: Image-Ca, Image-Sp, Image-Db : A Diagnostic Tool for Behavioral Medicine Signal Processing Algorithms in Fortran and C (Prentice-Hall Signal Processing Series) Multidimensional Digital Signal Processing (Prentice-Hall Signal Processing Series) Digital Signal Processing with Examples in MATLABÂ®, Second Edition (Electrical Engineering & Applied Signal Processing Series) Discrete-Time Signal Processing (3rd Edition) (Prentice-Hall Signal Processing Series) Digital Signal Processing: with Selected Topics: Adaptive Systems, Time-Frequency Analysis, Sparse Signal Processing Handbook of Image and Video Processing (Communications, Networking and Multimedia) Image Sensors and Signal Processing for Digital Still Cameras (Optical Science and Engineering) Medical Terminology: Medical Terminology Made Easy: Breakdown the Language of Medicine and Quickly Build Your Medical Vocabulary (Medical Terminology, Nursing School, Medical Books) LabVIEW Digital Signal Processing: and Digital Communications Digital Signal Processing in Communications Systems Digital Signal Processing Technology: Essentials of the Communications Revolution The Wounded Healer: Ministry in Contemporary Society (Doubleday Image Book. an Image Book) Digital Image Processing for Medical Applications Speech and Audio Signal Processing: Processing and Perception of Speech and Music Handbook of Neural Networks for Speech Processing (Artech House Signal Processing Library) American Medical Association Complete Medical Encyclopedia (American Medical Association (Ama) Complete Medical Encyclopedia) Data and Computer Communications (10th Edition) (William Stallings Books on Computer and Data Communications)