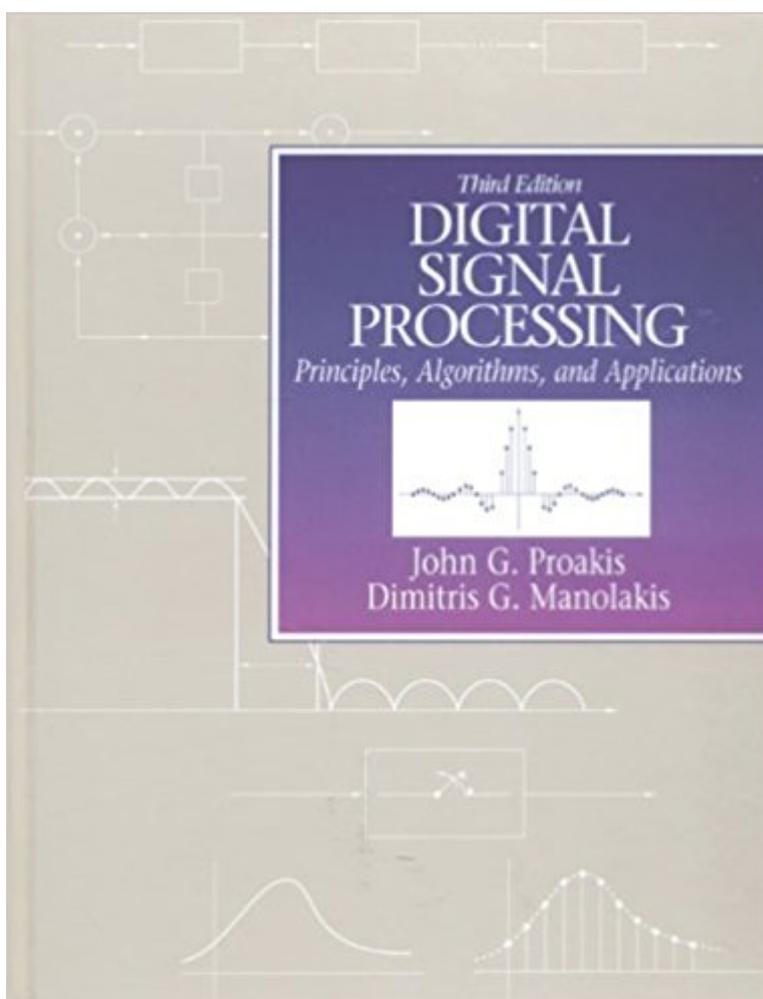


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Digital Signal Processing: Principles, Algorithms And Applications (3rd Edition)



Synopsis

Suitable for a one- or two-semester undergraduate-level electrical engineering, computer engineering, and computer science course in Discrete Systems and Digital Signal Processing. Assumes some prior knowledge of advanced calculus, linear systems for continuous-time signals, and Fourier series and transforms. Giving students a sound balance of theory and practical application, this no-nonsense text presents the fundamental concepts and techniques of modern digital signal processing with related algorithms and applications. Covering both time-domain and frequency-domain methods for the analysis of linear, discrete-time systems, the book offers cutting-edge coverage on such topics as sampling, digital filter design, filter realizations, deconvolution, interpolation, decimation, state-space methods, spectrum analysis, and more. Rigorous and challenging, it further prepares students with numerous examples, exercises, and experiments emphasizing software implementation of digital signal processing algorithms integrated throughout.

Book Information

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Customer Reviews

This book is a great theoretical introduction to DSP. Although its size looks intimidating and there is a lot of math, this book is very good for a beginner because firstly, the size of the book is due to numerous examples as well as clear and detailed explanations for most of the concepts and secondly, it is possible to skip over much of the math if you are so inclined and take away the gist of the section. This is the case in some of the more advanced topics covered which may be suitable

for a second reading. Some of the things I liked in this book are:- The organization of the material and lucidity of the writing and explanation- Consistency of notation- The concepts of frequency in continuous and discrete time signals in Chapter 1- The long introduction to discrete time systems and the concepts of linear time invariance in Chapter 2- The explanation of Fourier series and Fourier transforms of continuous time and discrete time signals (periodic and non periodic) in Chapter 4 is the best part of this book- Frequency domain characteristics of LTI systems in Chapter 4- The way the DFT was introduced and its relationship with the DTFT in Chapter 5- Sampling and reconstruction of signals in Chapter 9 Some of the things I did not like in this book are:- The way the sampling theorem was derived in Chapter 4. In DSP you can derive the same thing in many ways but in many cases one method is more intuitive and simpler than the rest. There is an easier way to derive the sampling theorem- There are mistakes in some equations. Not a major issue though- There is no MATLAB or computer exercises or examples anywhere.

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