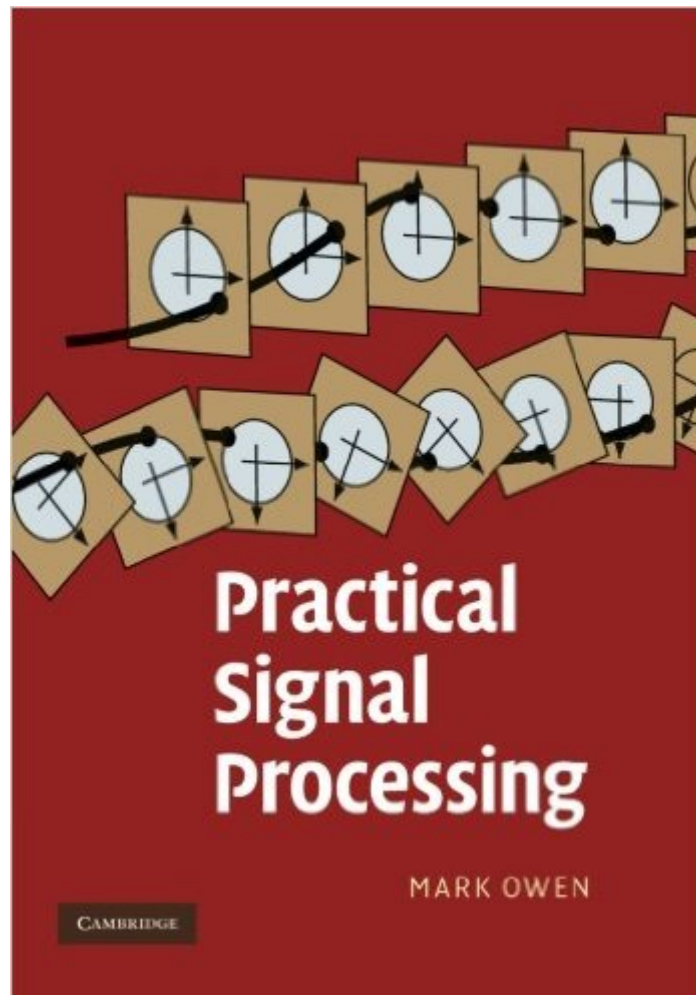


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# Practical Signal Processing



## Synopsis

The principles of signal processing are fundamental to the operation of many everyday devices. This book introduces the basic theory of digital signal processing, with emphasis on real-world applications. Sampling, quantization, the Fourier transform, filters, Bayesian methods and numerical considerations are covered, then developed to illustrate how they are used in audio, image, and video processing and compression, and in communications. The book concludes with methods for the efficient implementation of algorithms in hardware and software. Intuitive arguments rather than mathematical ones are used wherever possible, and links between various signal processing techniques are stressed. The advantages and disadvantages of different approaches are presented in the context of real-world examples, enabling the reader to choose the best solution to a given problem. With over 200 illustrations and over 130 exercises (including solutions), this book will appeal to practitioners working in signal processing, and undergraduate students of electrical and computer engineering.

## Book Information

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Average Customer Review: 5.0 out of 5 starsÂ Â See all reviewsÂ (6 customer reviews)

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## Customer Reviews

I found this book over at Powell books in Portland Oregon (Technical store). I've looked at a lot of DSP books trying to gain a basic understanding of the subject (I'm interested in audio DSP). This is the first book that really clicked with me and got me off the ground. His explanations make sense and aren't clouded with a ton of non-essential theory. He explains the how and why of what you need to know in a straight forward manner helping me break ground where other books lose me on

the same subjects. The down side of that is it's not as complete of a book as some of the others. For me it was completely worth it, I can look at other books for more in depth concepts and ideas. He goes over processing images as well as audio so don't get the idea that's it's an audio centric book. The one thing I found difficult was going along nice and easy and all of a sudden "WHAM!" he drops Euler's formula on me. I had to visit a number of other math books before I got that down. So thumbs up if you are starting out, or even not. I have an experienced mentor at work who has taken interest in a few parts as well. Buy it and review it!

This is a great book that has both the basic theory and practical applications. It is great for someone wants to learn the basics and apply to different field. Also, it is easy to read, I read most of this book in coffee shops, no heavy math, just high level overviews. The first part of the book is on theory, it contains: introduction to signal, sampling, conversion between analogue and digital, Fourier transform, filters, and likelihood method. The style of the book is very friendly, easy to understand, and have lots of figures to illustrate the concept. From these theories, you can easily understand what is sampling bias, the method to deal with irregular sampling, what's the physical meaning of FFT, different type of filters etc. The best part of this book is the second half which shows you different applications to audio, images, videos, and communications. I found this is really interesting and useful, since you soon grab the essence of the concept you just learned from the first part, and know how they actually used in the real world. I am a student in seismology, so I also spend a lot of time dealing with seismic signals. The applications shown in this book actually inspired me to try some of the method/techniques used in other field to seismology. I think this book is great for getting the high level overviews of the key techniques in DSP. As other reviewers said, it is not a complete book about DSP. If you want to learn more, after this book, you can choose some of the classics, e.g. Understanding Digital Signal Processing by Richard G. Lyons.

I could never understand Fourier transforms until I saw the pictures.

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