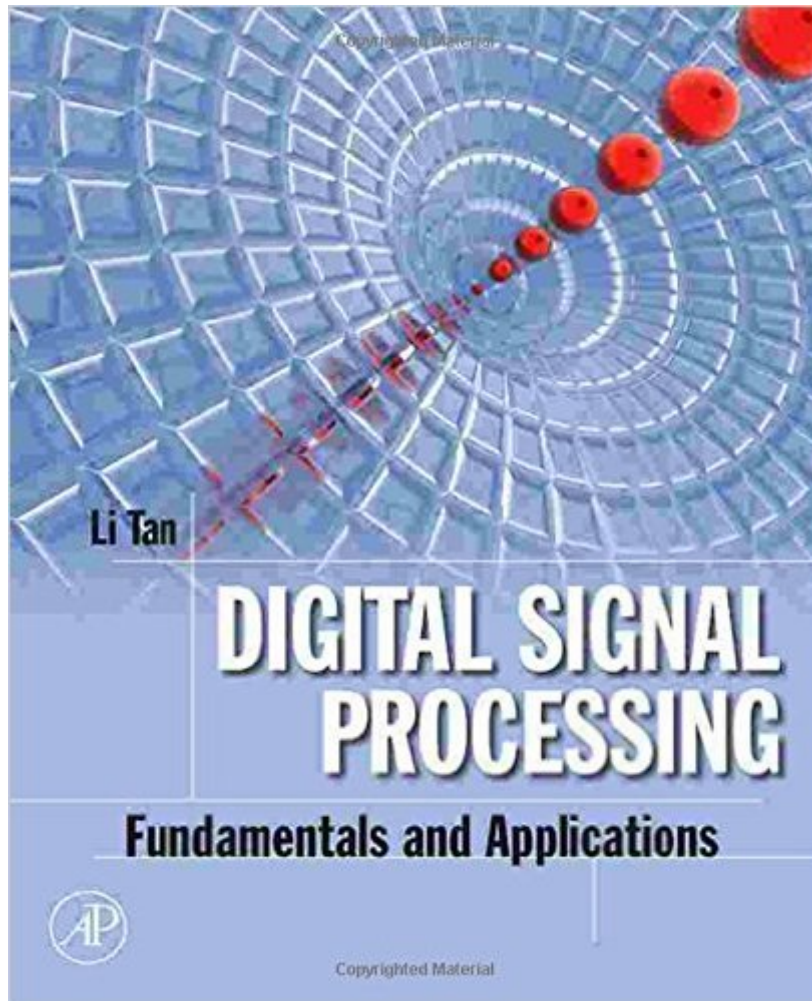


The book was found

# Digital Signal Processing: Fundamentals And Applications



## Synopsis

This book will enable electrical engineers and technicians in the fields of the biomedical, computer, and electronics engineering, to master the essential fundamentals of DSP principles and practice. Coverage includes DSP principles, applications, and hardware issues with an emphasis on applications. Many instructive worked examples are used to illustrate the material and the use of mathematics is minimized for easier grasp of concepts. In addition to introducing commercial DSP hardware and software, and industry standards that apply to DSP concepts and algorithms, topics covered include adaptive filtering with noise reduction and echo cancellations; speech compression; signal sampling, digital filter realizations; filter design; multimedia applications; over-sampling, etc. More advanced topics are also covered, such as adaptive filters, speech compression such as PCM, u-law, ADPCM, and multi-rate DSP and over-sampling ADC. \*Covers DSP principles and hardware issues with emphasis on applications and many worked examples\* Website with MATLAB programs for simulation and C programs for real-time DSP\* End of chapter problems are helpful in ensuring retention and understanding of what was just read

## Book Information

Hardcover: 840 pages

Publisher: Academic Press; 1 edition (August 9, 2007)

Language: English

ISBN-10: 0123740908

ISBN-13: 978-0123740908

Product Dimensions: 9.5 x 7.7 x 1.4 inches

Shipping Weight: 3.6 pounds

Average Customer Review: 4.4 out of 5 stars [See all reviews](#) (8 customer reviews)

Best Sellers Rank: #1,195,524 in Books (See Top 100 in Books) #48 in [Books > Computers & Technology > Hardware & DIY > Microprocessors & System Design > DSPs](#) #156 in [Books > Computers & Technology > Graphics & Design > Computer Modelling > Imaging Systems](#) #322 in [Books > Engineering & Transportation > Engineering > Electrical & Electronics > Electronics > Microelectronics](#)

## Customer Reviews

It is an honor to be the first customer to review this book. The two DSP books which have received so far the highest customer reviews are those by Steven Smith and Richard Lyons. Proakis is a close third, though one reviewer says that its reader may wish to have Smith and Lyons in hand to

help with understanding. This book by Li Tan belongs in the top three or four, if not the very top. My qualification for commenting on it comes from having just audited a graduate level DSP course, in which I happened to discover this book, along with the books by Stevens and Lyons, at the university library and used for outside study. The Smith and Lyons books were very helpful, but this one seemed to follow the course itself much more closely (actually covering material beyond the course), and so it was the most helpful of all. It is loaded with step by step, helpful examples, and also matlab code examples, some of which are particularly revealing and helpful. (Thank you for reading my review.)

I think the reason DSP is perceived as difficult to understand, is because traditional book/class tend to spend most of the time solving equations such as DFT, FFT, Z-transform of different signal (pulse, unit step, sinusoidal, square, triangular etc), differential equation to get zero and pole, stability, then bilinear transformation etc. As a result, students might spend all the time doing mathematics, than trying to understand what DSP is and how to apply it to real world. This book reduce the mathematics and proof to minimum when required, rather than throwing you all the equations and explanation at one time. For example, I dont always why other authors always try to explain the details of non-causal system since they usually say real time system is always causal and hence ignore the non-causal DSP design. I particularly like the exercise and MATLAB code. They are incredibly simple, but are very useful to aid understanding and cover almost all aspect of a DSP system, from equalizing ADC quantising noise, through to multirate DSP (which is rarely touched by most of the fundamental DSP books). The MATLAB code allows the reader to design filter and visualise the signal and its frequency spectrum very quickly. I think it is more important for beginner to first understand the concept of DSP using MATLAB, than trying to solve the mathematics, try to write C-code for FFT and plotting graph. As I mentioned, the mathematics is not detailed in this book. This is a double edge sword. Reader should have good knowledge on FFT, Z-transform. I recommend reading "Understanding Digital Signal Processing" by Lyons beforehand, which provide very good explanation on fundamental DSP theory and mathematics. This is the most useful DSP book I have ever read!!!!

I bought the Kindle version when it was on a steep sale. It's been great for review, and convenient because I can read it on my tablet. The author focuses more on what things mean and how to use them than he does on proving things, which I find very convenient. For reviewing what you already know, or figuring something out for a building a real system, this book is very convenient. The one

thing I was disappointed in was that I couldn't read it on my Kindle DX. Apparently this format of Kindle Book can only be read on a tablet or PC.

Its a book with information that I needed for school. I'm not sure how to rate this other than it has a lot of information, it's easy to read, and it has a ton of MATLAB examples. MATLAB will help you out immensely because there are some VERY LONG calculations that MATLAB does in one command.

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