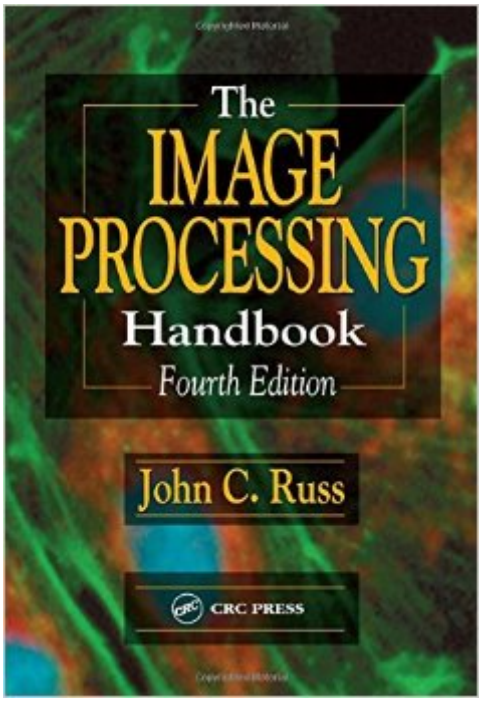
# The Image Processing Handbook, Fourth Edition



## Synopsis

First published in 1992, The Image Processing Handbook not only set the standard for professional references in this field, but also provided the first text truly accessible to undergraduate students and non-specialists. Each subsequent edition has reflected the continuing rapid advances in image processing, and the fourth edition is no exception. In fact, its broader scope, increased depth, and logical presentation make it, more than ever, a powerful teaching tool, essential reference, and handy companion for both new and experienced image processors and analysts.

## Book Information

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## Customer Reviews

This book reads like a user manual for an engineering image processing toolkit. In fact, that is exactly what it is -- the author sells a companion CD that is a set of image processing plug-ins to PhotoShop. However, you will not need to buy his toolkit to find this book valuable. Any image processing package that you use will be of greater use to you if you have this book at your side. The important thing to realize is that this is a handbook for technical USERS. It is not a programming manual for how to implement the techniques it discusses, but a very high-quality discussion of what the techniques are and when and why you would use them. Within that domain, the book has remarkable depth and clarity. It is quite up-to-date in its coverage, and draws extensively from real-world applications in medicine, microscopy, and satellite imaging. If you need to develop image

processing procedures in your work as an engineer, you will want to have this book by your side.

If you are primarily interested in remote sensing aspects of image processing (e.g., satellite and airborne imagery of the ground). I recommend acquiring this handbook on image processing. By far the best handbook on general Image Processing is "The Image Processing Handbook" edited by Russ and published by the IEEE. I use this book all the time. Of course, if you are getting into specific areas, such as mapping, hyperspectral imagery, synthetic aperature radar imagery or photogrammetry (i.e., precise physical measurement from imagery), or if you have a specific application (such as deforestation or plant diseases or agriculture), you should consider separate books on those topics.

As others have stated, this book comes as close as you'll ever get to a single-source reference on image processing. But if I were ever going to shoot anything down in it, I'd say that a little more mathematical background on some topics (and maybe pseudocoded examples) would help. For example, in the satellite geometric correction section, only a very high level view is given yet this is a challenging topic that could use more depth. Geometric transformations in general could use more depth, e.g. camera calibrations or image warping/morphing/mapping to other projections for example. Another example would be the need for a little more depth on how to make slow algorithms fast ...like convolution multiplications for example. Sure, you could write out the multiplies and spot commonalities, then re-use results that appear in more than one subsequent equation and what not, but some exploration of matrix math and how to make it efficient would be nice. But again ...I'm picking at small things here, and if John's book covered everything that I'd like it to, then it would become 2 books, not one ...hey! Now THERE's an idea! A 2+ book set by John Russ that covers a broader range of topics and does so in greater depth! That's something that I'd pay for (and much better to read than Ballard & Brown)

Processing: Advanced Methods (Undergraduate Topics in Computer Science) Image Processing, Analysis & and Machine Vision - A MATLAB Companion A Concise Introduction to Image Processing using C++ (Chapman & Hall/CRC Numerical Analysis and Scientific Computing Series) Information Processing with Evolutionary Algorithms: From Industrial Applications to Academic Speculations (Advanced Information and Knowledge Processing) Speech and Language Processing: An Introduction to Natural Language Processing, Computational Linguistics and Speech Recognition Deep Learning: Natural Language Processing in Python with Recursive Neural Networks: Recursive Neural (Tensor) Networks in Theano (Deep Learning and Natural Language Processing Book 3) Deep Learning: Natural Language Processing in Python with GLoVe: From Word2Vec to GLoVe in Python and Theano (Deep Learning and Natural Language Processing) Deep Learning: Natural Language Processing in Python with Word2Vec: Word2Vec and Word Embeddings in Python and Theano (Deep Learning and Natural Language Processing Book 1) Raising a Sensory Smart Child: The Definitive Handbook for Helping Your Child with Sensory Processing Issues, Revised Edition Handbook of Natural Gas Transmission and Processing, Second Edition The Sensory Team Handbook: A hands-on tool to help young people make sense of their senses and take charge of their sensory processing The Photographer's Black and White Handbook: Making and Processing Stunning Digital Black and White Photos Processing: A Programming Handbook for Visual Designers and Artists (MIT Press)