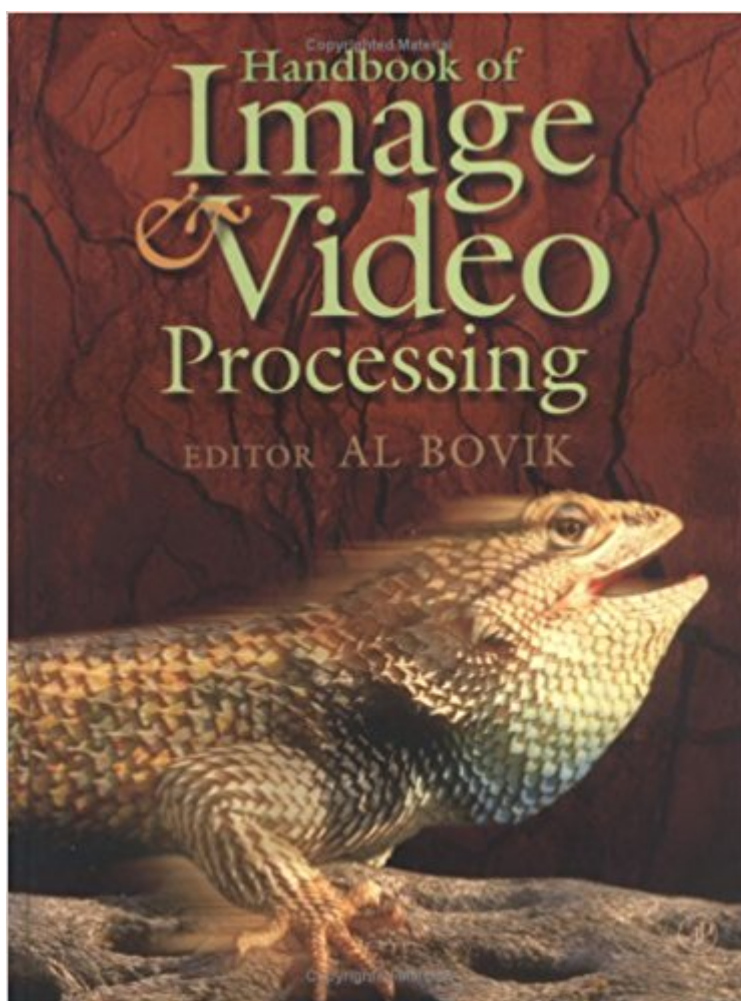




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# **Handbook Of Image And Video Processing (Communications, Networking And Multimedia)**



## Synopsis

The Handbook of Image and Video Processing contains a comprehensive and highly accessible presentation of all essential mathematics, techniques, and algorithms for every type of image and video processing used by scientists and engineers. The timely volume will provide both the novice and the seasoned practitioner with the necessary information and skills to be able to develop algorithms and applications for multimedia, digital imaging, digital video, telecommunications, and World Wide Web industries. Handbook of Image and Video Processing will also serve as a textbook for courses such as digital image processing, digital image analysis, digital video, video communications, multimedia, and biomedical image processing in the departments of electrical and computer engineering and computer science. \* No other resource contains the same breadth of up-to-date coverage\* Contains over 100 example algorithm illustrations\* Contains a series of extremely accessible tutorial chapters\* Indispensable for researchers in telecommunications, internet applications, multimedia, and nearly every branch of science

## Book Information

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## Customer Reviews

"Al Bovik has discharged a monumental assignment with spectacular success. If you are interested in image and video processing, you must have a copy."--P.N.T. Wells, Centre for Physics and Engineering Research in Medicine, Bristol General Hospital, U.K. (in *Physiological Measurement*, 22:1)

Handbook of Image and Video Processing presents a comprehensive and highly accessible presentation of the basic and most up-to-date methods and algorithms for digital image and video processing. This timely volume will provide both the novice and the seasoned practitioner the necessary information and skills to be able to develop algorithms and applications for the burgeoning Multimedia, Digital Imaging, Digital Video, Telecommunications, and World-Wide Web (internet) industries. Handbook of Image and Video Processing is an indispensable resource for researchers in telecommunications, internet applications, multimedia, and nearly every branch of science. No other resource contains the same breadth of up-to-date coverage. This handbook is arranged into highly focused chapters that represent the collective efforts of the leading educators and researchers working in the areas of image and video processing. Beginning with a series of tutorial chapters on basic gray-level image processing, binary image processing, image Fourier analysis and convolution, the Handbook then describes the latest and most effective techniques for:

- \* Linear, non-linear, morphological, and wavelet-based image enhancement
- \* Basic, regularized, multi-channel, multi-frame, and iterative image restoration
- \* Motion detection and estimation
- \* Video enhancement and restoration
- \* Scene reconstruction, image stabilization, and mosaicking
- \* Models of human vision and their impact on image processing
- \* Wavelet, color, and multispectral image representations
- \* Models for image noise, image modulations, and random fields
- \* Image and video segmentation, classification, and edge detection
- \* Review of available image processing development environments and software
- \* Lossless image compression
- \* Lossy image compression using BTC, vector quantization, and wavelets
- \* Image compression standards, including JPEG
- \* Modern video compression, including DCT, object-, and wavelet-based methods
- \* Video compression standards, including H.261, MPEG I, II, IV, and VII
- \* Image and video acquisition, sampling, and interpolation
- \* Image quantization, halftoning, and printing
- \* Perceptual quality assessment of compressed images and video
- \* Image and video databases, indexing, and retrieval
- \* Image and video networks, security, and watermarking

The Handbook concludes with a set of carefully selected, instructive, and exemplary image processing applications in diverse areas such as; radar imaging, computed tomography, cardiac imaging, digital mammography, fingerprint classification and recognition, human face recognition, confocal microscopy, and automatic target recognition. Developers of these applications as well as those seeking applications that parallel their own will find these chapters to be indispensable guides.

As expected and in the condition promised. Actually I think it is in better condition.

This is an encyclopedia of image processing topics. It contains some introductory material to help people understand what images are and how to process them. The majority of the text, however, is for experienced people wanting to look up topics. This book is big. It is about 8"x11" by 900 pages. It contains material from 100 different professionals on 50 different topics. The style is academic. The editor is the editor of the IEEE Transactions on Image Processing. The page style is similar to what you would see in an IEEE Transaction. There is plenty of math. The text explains the mathematics, but not to the depth I would like to see. The authors illustrate the techniques with many images. If there are no "before and after" images in an image processing book, reject it. Well, this book has plenty of images. That is a strong point. A weak point is there is no source code illustrating the techniques and algorithms. I find this a major weakness, but one that is not unique to this book. The authors leave much to the reader. This is not a read from cover to cover book. The reader must go slow, take notes, study, and read again to understand the material. All in all, this is a good source of knowledge on image processing. If you work with images and write software to process images, you should have this book on your desk.

This is a very nice reference work for image processing professionals. It is a collection of articles by various experts in aspects of image processing, reporting on the state-of-the-art in their particular domains. The coverage is broad and deep. However, it is not for everyone. The writing style is that of a refereed journal. If you are not comfortable with that style of exposition, or if you are simply trying to find a snippet of code to implement a particular algorithm, this is not the book for you. At the other extreme, do not expect to find new and startling insights into the field that you did your dissertation on. However, if you want to understand the current state of the art of a colleague's field, or if you need to expand your expertise into a new area of image processing, this is a very good place to start.

No other book contains the complete body of knowledge within the image and video processing field. The "Handbook of Image and Video Processing" is the most up-to-date reference and text on this expanding field. The handbook contains contributions from the world's leading image and video processing engineers: Joe Havlicek, Ed Delp, Murat Tekalp, Scott Acton and Jake Aggarwal. The editor AI Bovik has done a superb job in blending the subjects and unifying the presentation within the handbook. I would give my superlative recommendation for use as a desktop reference or classroom text. The "Handbook of Image and Video Processing" is the bible of the digital imaging

revolution!

This book is just GREAT. It covers almost every single aspect of image and video processing. Everything is in deep and very good explained. A lot of before-and-after example pictures (important ones in color) are provided too. But beware. You need a fairly good understanding of math to read the book. It is not intended to explain how to use Photoshop, but rather how to write your own ;-). This book is not a read-along book. Sometimes you have to read a section 2 or 3 times to understand it. I think sometimes a good Snippet of C-Code would help to understand, but this is acceptable. Again: A outstanding book, which fully covers all my needs. The price of 100 us\$ is ok, because it's a lot of a book...

I bought and received this book about a month ago. I had been using the Gonzalez book for quite some time. It's quite poor compared to this book. This handbook is so accessible and complete, it's all I'm using in my work now. It's very much like a textbook and handbook and how-to book all rolled in one. I work for Microsoft in the digital video area and I'm using it daily. Kudos!!

This book brings the latest digital image/video processing technologies together such as image and video analysis, image and video compression, and image/video communications.... This book is not only a good book for researchers in this area, but also an excellent introductory book for those who want to enter this area. The author is one of the most famous experts in this area.

Great book. Lots and lots of interesting information. A must-have for the image-processing professional or anyone seeking to learn more about the field.

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