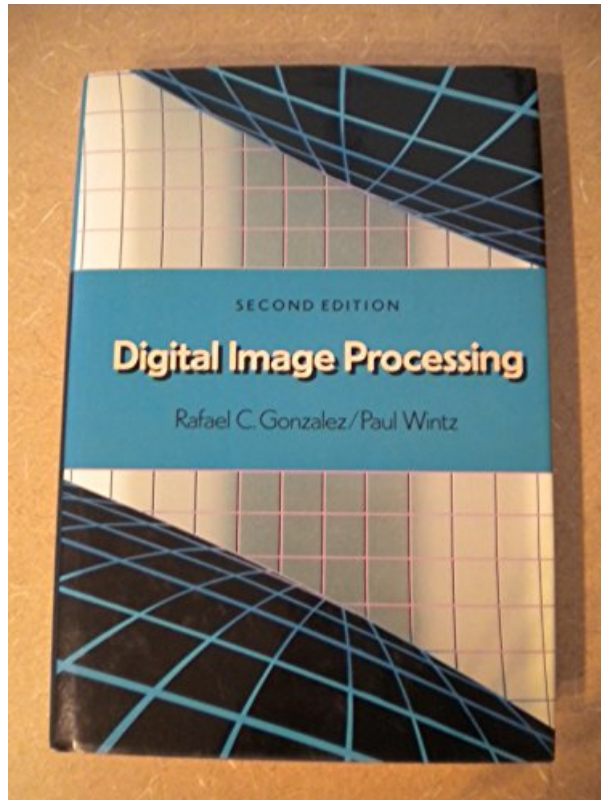
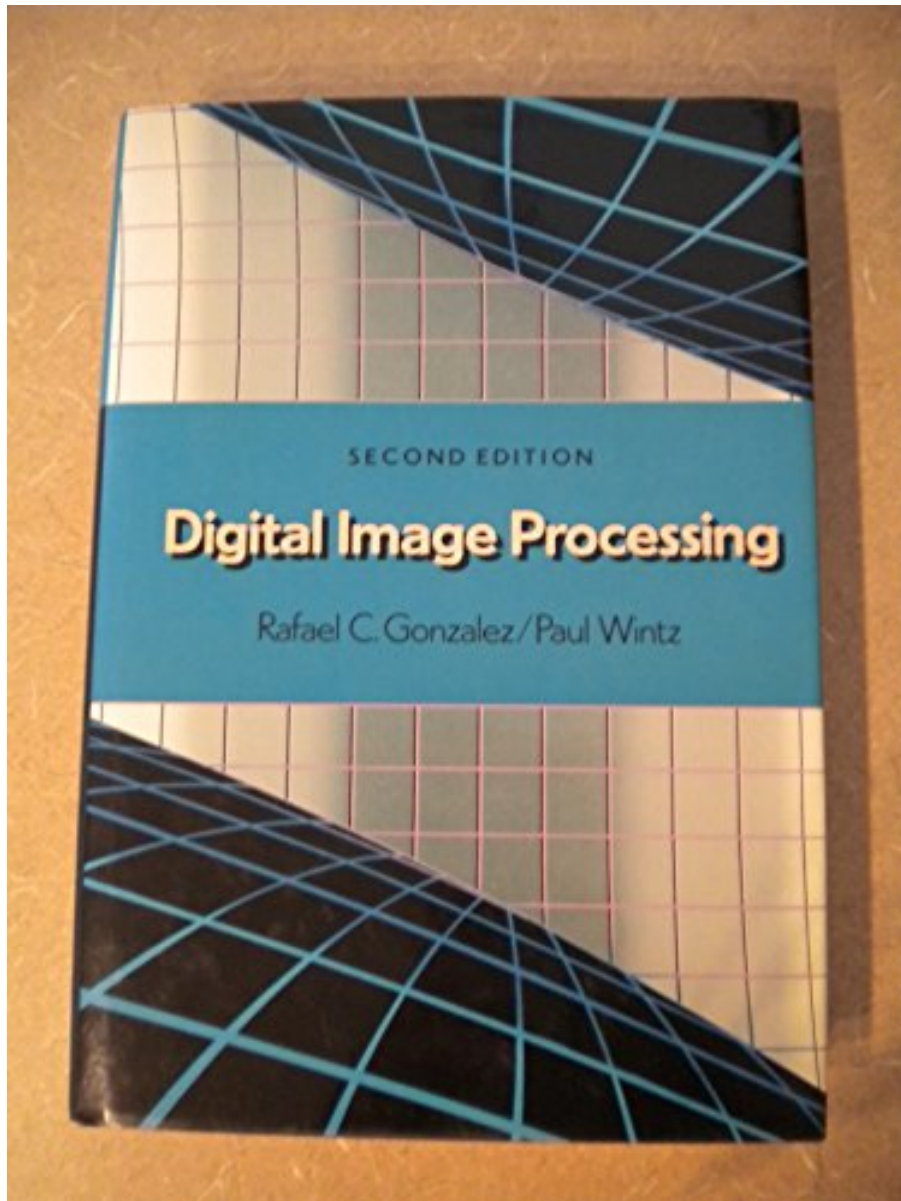


DIGITAL IMAGE PROCESSING BY RAFAEL C GONZALEZ, PAUL WINTZ



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The book Digital Image Processing By Rafael C Gonzalez, Paul Wintz will certainly consistently give you positive worth if you do it well. Completing guide Digital Image Processing By Rafael C Gonzalez, Paul Wintz to review will certainly not end up being the only objective. The objective is by obtaining the favorable value from guide till completion of guide. This is why; you need to find out even more while reading this Digital Image Processing By Rafael C Gonzalez, Paul Wintz This is not just how fast you review a book as well as not just has the number of you completed the books; it has to do with what you have actually obtained from the books.

From the Back Cover

Digital Image Processing has been the leading textbook in its field for more than 20 years. As was the case with the 1977 and 1987 editions by Gonzalez and Wintz, and the 1992 edition by Gonzalez and Woods, the present edition was prepared with students and instructors in mind. The material is timely, highly readable, and illustrated with numerous examples of practical significance. All mainstream areas of image processing are covered, including a totally revised introduction and discussion of image fundamentals, image enhancement in the spatial and frequency domains, restoration, color image processing, wavelets, image compression, morphology, segmentation, and image description. Coverage concludes with a discussion of the fundamentals of object recognition.

Although the book is completely self-contained, a Companion Website (see inside front cover) provides additional support in the form of review material, answers to selected problems, laboratory project suggestions, and a score of other features. A supplementary instructor's manual is available to instructors who have adopted the book for classroom use.

New Features

- New chapters on wavelets, image morphology, and color image processing.
- More than 500 new images and over 200 new line drawings and tables.
- A revision and update of all chapters, including topics such as segmentation by watersheds.
- Numerous new examples with processed images of higher resolution.
- A reorganization that allows the reader to get to the material on actual image processing much sooner than before.
- Updated image compression standards and a new section on compression using wavelets.
- A more intuitive development of traditional topics such as image transforms and image restoration.
- Updated bibliography.

About the Author

Rafael C. Gonzalez received the B.S.E.E. degree from the University of Miami in 1965 and the M.E. and Ph.D. degrees in electrical engineering from the University of Florida, Gainesville, in 1967 and 1970, respectively. He joined the Electrical and Computer Engineering Department at University of Tennessee, Knoxville (UTK) in 1970, where he became Associate Professor in 1973, Professor in 1978, and Distinguished Service Professor in 1984. He served as Chairman of the department from 1994 through 1997. He is currently a Professor Emeritus at UTK.

Gonzalez is the founder of the Image & Pattern Analysis Laboratory and the Robotics & Computer Vision Laboratory at the University of Tennessee. He also founded Perceptics Corporation in 1982 and was its president until 1992. The last three years of this period were spent under a full-time employment contract with Westinghouse Corporation, who acquired the company in 1989.

Under his direction, Perceptics became highly successful in image processing, computer vision, and laser disk storage technology. In its initial ten years, Perceptics introduced a series of innovative products, including: The world's first commercially-available computer vision system for automatically reading the license plate on moving vehicles; a series of large-scale image processing and archiving systems used by the U.S. Navy at six different manufacturing sites throughout the country to inspect the rocket motors of missiles in the Trident II Submarine Program; the market leading family of imaging boards for advanced Macintosh computers; and a line of trillion-byte laser disk products.

He is a frequent consultant to industry and government in the areas of pattern recognition, image processing, and machine learning. His academic honors for work in these fields include the 1977 UTK College of Engineering Faculty Achievement Award; the 1978 UTK Chancellor's Research Scholar Award; the 1980 Magnavox Engineering Professor Award; and the 1980 M.E. Brooks Distinguished Professor Award. In 1981 he became an IBM Professor at the University of Tennessee and in 1984 he was named a Distinguished Service Professor there. He was awarded a Distinguished Alumnus Award by the University of Miami in 1985, the Phi Kappa Phi Scholar Award in 1986, and the University of Tennessee's Nathan W. Dougherty Award for Excellence in Engineering in 1992.

Honors for industrial accomplishment include the 1987 IEEE Outstanding Engineer Award for Commercial Development in Tennessee; the 1988 Albert Rose Nat'l Award for Excellence in Commercial Image Processing; the 1989 B. Otto Wheelley Award for Excellence in Technology Transfer; the 1989 Coopers and Lybrand Entrepreneur of the Year Award; the 1992 IEEE Region 3 Outstanding Engineer Award; and the 1993 Automated Imaging Association National Award for Technology Development.

Gonzalez is author or co-author of over 100 technical articles, two edited books, and four textbooks in the fields of pattern recognition, image processing and robotics. His books are used in over 500 universities and research institutions throughout the world. He is listed in the prestigious Marquis Who's Who in America, Marquis Who's Who in Engineering, Marquis Who's Who in the World, and in 10 other national and international biographical citations. He is the co-holder of two U.S. Patents, and has been an associate editor of the IEEE Transactions on Systems, Man and Cybernetics, and the International Journal of Computer and Information Sciences. He is a member of numerous professional and honorary societies, including Tau Beta Pi, Phi Kappa Phi, Eta Kappa Nu, and Sigma Xi. He is a Fellow of the IEEE.

Richard E. Woods earned his B.S., M.S., and Ph.D. degrees in Electrical Engineering from the University of Tennessee, Knoxville. His professional experiences range from entrepreneurial to the

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When something can be read without effort,
great effort has gone into its writing.

This edition is the most comprehensive revision of Digital Image Processing since the book first appeared in 1977. As the 1977 and 1987 editions by Gonzalez and Wintz, and the 1992 edition by Gonzalez and Woods, the present edition was prepared with students and instructors in mind. Thus, the principal objectives of the book continue to be to provide an introduction to basic concepts and methodologies for digital image processing, and to develop a foundation that can be used as the basis for further study and research in this field. To achieve these objectives, we again focused on material that we believe is fundamental and has a scope of application that is not limited to the solution of specialized problems. The mathematical complexity of the book remains at a level well within the grasp of college seniors and first-year graduate students who have introductory preparation in mathematical analysis, vectors, matrices, probability, statistics, and rudimentary computer programming.

The present edition was influenced significantly by a recent market survey conducted by Prentice Hall. The major findings of this survey were:

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R.E.W.

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R.E.W. Most helpful customer reviews36 of 38 people found the following review helpful.

The best comprehensive image processing textbook

By calvinme

This book is the best textbook on image processing for senior/graduate students majoring in engineering or computer science. Although a knowledge of calculus and linear algebra is presumed, it is a very accessible textbook. Chapters one and two consist of very basic background information. The concepts of linearity, pixel distance measures, spatial versus gray scale resolution, and zooming and shrinking are explained. Chapter 3 is about image enhancement in the spatial domain, and includes discussions on contrast enhancement, histogram processing and equalization, and histogram matching. The idea of filtering images via an $N \times N$ kernel mask is also introduced. Chapter 4 is about filtering in the frequency domain. The 2D Fourier transform is introduced and it is explained how filtering can take place using this transform. Chapter five discusses image restoration. This includes Weiner filtering and minimum mean square error filtering. Chapter six discusses color image processing. This chapter discusses the various color spaces - RGB, CMYK, HSI, and how the transforms mentioned up to this point in the book can be performed in color. Chapter 7 is about wavelets and multiresolution processing. This chapter is a good solid presentation of wavelets and their usage in image processing. I would suggest that anyone interested in this subject start here before they read another book, since the presentation is clearer here than in books dedicated to the subject. Chapter 8 is about image compression. Basics of information theory are discussed, and lossy as well as lossless methods of compression are discussed. As a good follow-on to the previous chapter, the role of wavelets in compression is discussed. Chapter 9 discusses morphological image processing, which is that field of image processing that relies on the systematic "fattening" and "thinning" of edges to enhance images. Chapters 10,11, and 12 are a sort of introduction to computer vision topics. Chapter 10 discusses how to segment an image. Chapter 11 is about image descriptors that quantify segmented portions of an image. Chapter 12 is about object recognition and even has a short section on statistical classifiers. This book is a joy to read, and will make the topic of image processing very clear. There are plenty of diagrams, formulas, and equations listed. There are no examples to speak of, but algorithms are clearly specified so that I don't think that the book suffers because of the lack of examples. All engineering textbooks should be this well written. I particularly recommend this book as a reference for students and practitioners of robotics, video processing, and computer vision, since there are image processing considerations in all of these fields that this book will clarify.0 of 0 people found the following review helpful.

Four Stars

By Jesus Fuentes

Book is in excellent shape. 9 of 10 people found the following review helpful.

Simply Excellent! Fully Justifies Its Price!

By Musaad Haider

The preface of this book starts with a quote:

"When something can be read without effort, great effort has gone into its writing".

And once you start reading the book, you realize how much the book lives upto this. Everything is written clearly and important points are stressed again and again in each topic until you become fully familiar with them. Topics are written with implementation in mind, as you can get started with writing your own code instantly.

The book makes the subject as interesting as it gets, and although some existing basic concepts of mathematics and statistics are quite helpful while reading, but you don't even have to be familiar with Digital Signal Processing to fully understand the contents.

Finally, I'd like to say that out of the few people that fully understand a concept, fewer have the gift to deliver their knowledge to others, and the authors of this book have that gift. See all 22 customer reviews...

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