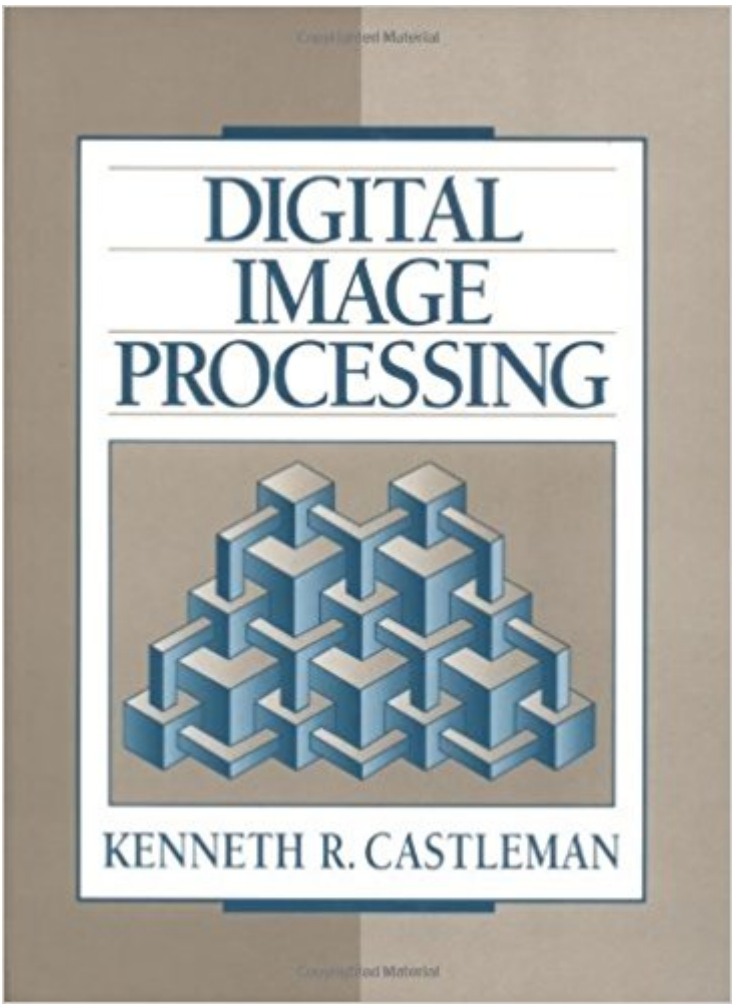
Digital Image Processing



Synopsis

This broad introduction to the fundamental concepts of digital imaging shows how the various techniques can be applied to solve real-world problems (e.g., in biology, astronomy, forensics, etc.). It helps readers develop the insight required to use the tools of digital imaging to solve new problems. Discusses color, image compression, user interfaces, software development project management, 2-D graphs of Fourier Transforms, analysis of digital imaging systems performance, optics, pattern recognition, image recording and display, CCD cameras.

Book Information

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Customer Reviews

Ideal for those who do not possess an advanced background in electrical engineering, this broad introduction to the fundamental concepts of digital imaging shows how the various techniques can be applied to solve real-world problems (e.g., in biology, astronomy, forensics, etc.). It helps students develop the insight required to use the tools of digital imaging to solve new problems.

Digital image processing has experienced explosive growth over the past two decades. Public awareness has increased by way of video games, digital video special effects used in the entertainment industry, as well as articles in the mainstream press. However, the most significant impact of digital image processing in the 90s will be in the area of applications to real-world problems. To help readers keep pace, author Kenneth R. Castleman concentrates on those techniques that have proven most useful in practice. Part I presents several important concepts that

can be developed without detailed mathematical analysis for a basic understanding. Part II addresses techniques that rely more on mathematics and elaborates analytically on certain concepts introduced in Part I. Part III covers specific application areas that are particularly important in industry, science, and medicine.

great book

This is not a good book from which to learn basic image processing, and this is not a good book from which to learn basic signal processing. The best books on those subjects, respectively, areÃ Â Digital Image Processing (3rd Edition)Ã Â andÃ Â Discrete-Time Signal Processing (2nd Edition) (Prentice-Hall Signal Processing Series). However, neither of these books or any other book joins these two subjects, along with optics, in such a practical fashion to show you how to solve real image processing problems. The author could have been more generous in his use of examples in how to set up the algorithms, but he does have a companion website that has example programs in MATLAB.Part one skimpily covers the basics of digital image processing. Skip over it and read the previously mentioned book on the subject and go straight to part two. That part and the subsequent parts of the book talk in detail about subjects I haven't found in any other book, at least not so clearly married to the subject of image processing as this one is.The outrageous pricetag and the entirely inadequate part one are the only negatives I can find in this book.

This book covers most of the elements you will ever need or want to know about image processing. It presents the algorithms, mathematics, and logic behind all major techniques. It has enough math to scare off any casual reader, in enough detail to satisfy anyone seriously interested in image processing. The only bad thing about the book is the cost. If it were priced slashed to $60 or less, I'd have given it 5 stars. If you plan on doing any serious image processing in your career, it is worth the money. If you only need it for a class and not your career, then you are probably better off reading it with a formerly-wealthy classmate.

I used Ken Castleman's first edition in 1979 that same year to get a thorough and fast mastery of digital image processing. The book is highly recommended, because I feel that if a book is easy to read and gets the job done of educating the reader as quickly as possible, and it is actually a pleasure to go through, then it is a winner. This book is one of the rare technical books I can recommend this way. The price tag of 105 is hefty, but many books today are outlandishly priced.

Even so, if the budget allows only one or two Digital Imaging texts, this would be one I would definitely pick.

This book helped me gain the basic knowledge in digital image processing. Although it doesn't have any sample programming code, the description and the math functions in the book are good enough for me to understand the different imaging processing techniques and finish my image processing programming projects at work.