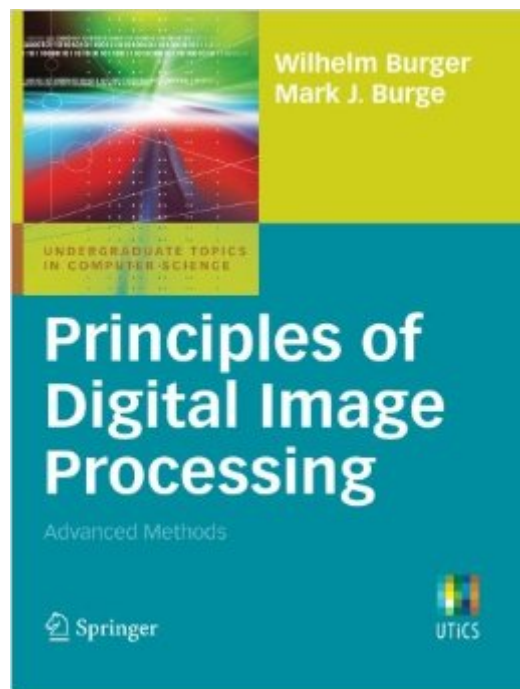# Principles Of Digital Image Processing: Advanced Methods (Undergraduate Topics In Computer Science)

Synopsis

This book offers key concepts and methods in image processing, examples and exercises, Java code and worked-out examples for easy inclusion in existing applications, and a supplementary website with complete Java source code, test images, and corrections.

Book Information

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Customer Reviews

I love this book, as well as the precursor, Digital Image Processing: AnAlgorithmic Introduction using Java.The authors are masters of exposition. They provide motivation,clarity, and supporting details, as well as helpful pointers to completesolutions -- and they respect the reader's intelligence. And the supportfor ImageJ and Fiji are fabulous.The authors explain things well, have beautiful illustrations,supply the detailed needed to confirm it for yourself,and address the subtle technical discrepancies with the moregeneral claims.For example, in the description of anisotropic diffusion filters(section 5.3 starting on page 143), they assure the careful reader onp. 149 regarding something the reader might have figured out forthemselves: that as formally described, the filter is not anisotropic,but the descritized approximation of it is anisotropic.Had I started with a book like this, I might have fallen in love withdigital image processing instead of algorithms and data structures.

This book arrived today and in a matter of a few hours I was able to understand a lot about adaptative thresholding and Fourier descriptors.The book is very carefully written, annotates the mathematical dérivations very clearly and provides nice clear pseudocode and then some java code (using JImage). This is in contrast with books that use Matlab, which is expensive and less accessible (but maybe the free "Octave" Matlab-inspired language would do the job). For those who are C++ afficionados there are libraries that try to look like ImageJ.But the point of the book is not to use commercial libraries, but rather to understand some algorithms (and tradeoffs) in detail.Another good aspect of the book is that it takes color images seriously, when many books just assume that if you can deal with grey-level images you can deal with color. It's not so simple as that.The last chapter explains SIFT (used to indentify common features of objects, for say an image-stitching program) in great detail.So here you have a book that goes further than just a user's guide to imaging libraries, but promotes understanding from where you can design functions tailored to your needs.Highly recommended.

Another great book on image processing by one of the best authors in the field.

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