

# Digital Image Processing

Digital image sequences (including digital video) are increasingly common and important components in technical applications ranging from medical imaging and multimedia communications to autonomous vehicle navigation. The immense popularity of DVD video and the introduction of digital television make digital video ubiquitous in the consumer domain. *Digital Image Sequence Processing, Compression, and Analysis* provides an overview of the current state of the field, as analyzed by leading researchers. An invaluable resource for planning and conducting research in this area, the book conveys a unified view of potential directions for further industrial development. It offers an in-depth treatment of the latest perspectives on processing, compression, and analysis of digital image sequences. Research involving digital image sequences remains extremely active. The advent of economical sequence acquisition, storage, and display devices, together with the availability of computing power, opens new areas of opportunity. This volume delivers the background necessary to understand the strengths and weaknesses of current techniques and the directions that consumer and technical applications may take over the coming decade.

This revised and expanded new edition of an internationally successful classic presents an accessible introduction to the key methods in digital image processing for both practitioners and teachers. Emphasis is placed on practical application, presenting precise

## File Type PDF Digital Image Processing

algorithmic descriptions in an unusually high level of detail, while highlighting direct connections between the mathematical foundations and concrete implementation. The text is supported by practical examples and carefully constructed chapter-ending exercises drawn from the authors' years of teaching experience, including easily adaptable Java code and completely worked out examples. Source code, test images and additional instructor materials are also provided at an associated website. Digital Image Processing is the definitive textbook for students, researchers, and professionals in search of critical analysis and modern implementations of the most important algorithms in the field, and is also eminently suitable for self-study.

Learn about state-of-the-art digital image processing without the complicated math and programming... You don't have to be a preeminent computer scientist or engineer to get the most out of today's digital image processing technology. Whether you're working in medical imaging, machine vision, graphic arts, or just a hobbyist working at home, this book will get you up and running in no time, with all the technical know-how you need to perform sophisticated image processing operations. Designed for end users, as well as an introduction for system designers, developers, and technical managers, this book doesn't bog you down in complex mathematical formulas or lines of programming code. Instead, in clear down-to-earth language supplemented with numerous example images and the ready-to-run digital image processing program on the enclosed disk, it schools you, step-by-step, in essential

# File Type PDF Digital Image Processing

digital image processing concepts, principles, techniques, and technologies. Disk contains sample image files and a ready-to-run digital image processing program that lets you do as you learn detailed step-by-step guides to the most commonly used operations, including references to real-world applications and implementations hundreds of before and after images that help illustrate all the operations described comprehensive coverage of current hardware and the best methods for acquiring, displaying, and processing digital images

This is the second volume of a book series that provides a modern, algorithmic introduction to digital image processing. It is designed to be used both by learners desiring a firm foundation on which to build and practitioners in search of critical analysis and modern implementations of the most important techniques. This updated and enhanced paperback edition of our comprehensive textbook *Digital Image Processing: An Algorithmic Approach Using Java* packages the original material into a series of compact volumes, thereby supporting a flexible sequence of courses in digital image processing. Tailoring the contents to the scope of individual semester courses is also an attempt to provide affordable (and “backpack-compatible”) textbooks without compromising the quality and depth of content. This second volume, titled *Core Algorithms*, extends the introductory material presented in the first volume (*Fundamental Techniques*) with additional techniques that are, nevertheless, part of the standard image processing toolbox. A forthcoming third volume (*Advanced*

## File Type PDF Digital Image Processing

Techniques) will extend this series and add important material beyond the elementary level, suitable for an advanced undergraduate or even graduate course. 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. An introduction to color in three-dimensional image processing and the emerging area of multi-spectral image processing The importance of color information in digital image processing is greater than ever. However, the transition from scalar to vector-valued image functions has not yet been generally covered in most textbooks. Now, Digital Color Image Processing fills this pressing need with a detailed introduction to this important topic. In four comprehensive sections, this book covers: The fundamentals and requirements for color image processing from a vector-valued viewpoint

## File Type PDF Digital Image Processing

Techniques for preprocessing color images Three-dimensional scene analysis using color information, as well as the emerging area of multi-spectral imaging Applications of color image processing, presented via the examination of two case studies In addition to introducing readers to important new technologies in the field, Digital Color Image Processing also contains novel topics such as: techniques for improving three-dimensional reconstruction, three-dimensional computer vision, and emerging areas of safety and security applications in luggage inspection and video surveillance of high-security facilities. Complete with full-color illustrations and two applications chapters, Digital Color Image Processing is the only book that covers the breadth of the subject under one convenient cover. It is written at a level that is accessible for first- and second-year graduate students in electrical and computer engineering and computer science courses, and that is also appropriate for researchers who wish to extend their knowledge in the area of color image processing. The digital revolution over the past several decades has advanced every facet of evidence detection, photography, optimization, and interpretation. Forensic scientists and practitioners have benefited tremendously from the move from film to digital. With proper procedures in place, digital images and casework capabilities have increased tremendously in both complexity and range due to a vast array of tools to enhance evidence and photography. Forensic Digital Image Processing: Optimization of Impression Evidence provides the forensic investigator with the tools and

## File Type PDF Digital Image Processing

understanding to extract, optimize, and interpret the maximum evidence possible from crime scenes to increase identifications. The book begins by examining the emergence of forensic digital image processing, and the gradual improvement and acceptance of the science over the past four decades. Coverage includes looking at the issues of image integrity and authentication including forensic image optimization and the manipulation of images. Chapters explore techniques exploiting color theory, modes, and channels to optimize signal-to-noise ratio in images. One of the greatest assets of digital image technology is the ability to combine multiple images of the same subject to create a final, blended image: one that displays the desired evidence and is especially useful for fingerprint or footwear impression. Later chapters demonstrate image subtraction, focus stacking, and high dynamic range, utilizing images in optimum focus and with substrate interference diminished or removed entirely. The authors look at fast Fourier transform as an optimal tool for noise removal, addressing basic theory and diagnosis of the noise signatures. The book discusses the history of digital imaging techniques and their treatment within the court system. *Forensic Digital Image Processing: Optimization of Impression Evidence* serves as an invaluable resource and tool for practicing professionals—as well as those new to the field—to look at best practices, the latest technology, and advances in utilizing the increasing array of tools of the trade.

This textbook is the third of three volumes which provide a modern, algorithmic introduction to digital image processing,

# File Type PDF Digital Image Processing

designed to be used both by learners desiring a firm foundation on which to build, and practitioners in search of critical analysis and concrete implementations of the most important techniques. This volume builds upon the introductory material presented in the first two volumes with additional key concepts and methods in image processing. Features: practical examples and carefully constructed chapter-ending exercises; real implementations, concise mathematical notation, and precise algorithmic descriptions designed for programmers and practitioners; easily adaptable Java code and completely worked-out examples for easy inclusion in existing applications; uses ImageJ; provides a supplementary website with the complete Java source code, test images, and corrections; additional presentation tools for instructors including a complete set of figures, tables, and mathematical elements.

This authoritative text (the second part of a complete MSc course) provides mathematical methods required to describe images, image formation and different imaging systems, coupled with the principle techniques used for processing digital images. It is based on a course for postgraduates reading physics, electronic engineering, telecommunications engineering, information technology and computer science. This book relates the methods of processing and interpreting digital images to the 'physics' of imaging systems. Case studies reinforce the methods discussed, with examples of current research themes. Provides mathematical methods required to describe images, image formation and different imaging systems Outlines the principle techniques used for processing digital images Relates the methods of processing and interpreting digital images to the 'physics' of imaging systems

This book is a detailed description of the basics of three-dimensional digital image processing. A 3D digital image

# File Type PDF Digital Image Processing

(abbreviated as “3D image” below) is a digitalized representation of a 3D object or an entire 3D space, stored in a computer as a 3D array. Whereas normal digital image processing is concerned with screens that are a collection of square shapes called “pixels” and their corresponding density levels, the “image plane” in three dimensions is represented by a division into cubical graphical elements (called “voxels”) that represent corresponding density levels. In the context of image processing, in many cases 3D image processing will refer to the input of multiple 2D images and performing processing in order to understand the 3D space (or “scene”) that they depict. This is a result of research into how to use input from image sensors such as television cameras as a basis for learning about a 3D scene, thereby replicating the sense of vision for humans or intelligent robots, and this has been the central problem in image processing research since the 1970s. However, a completely different type of image with its own new problems, the 3D digital image discussed in this book, rapidly took prominence in the 1980s, particularly in the field of medical imaging. These were recordings of human bodies obtained through computed (or “computerized”) tomography (CT), images that recorded not only the external, visible surface of the subject but also, to some degree of resolution, its internal structure. This was a type of image that no one had experienced before.

Meant for students and practicing engineers, this book provides a clear, comprehensive and up-to-date introduction to Digital Image Processing in a pragmatic style. An illustrative approach, practical examples and MATLAB applications given in the book help in bringing the theory to life.

Digital Image Processing

A newly updated and revised edition of the classic

# File Type PDF Digital Image Processing

introduction to digital image processing The Fourth Edition of Digital Image Processing provides a complete introduction to the field and includes new information that updates the state of the art. The text offers coverage of new topics and includes interactive computer display imaging examples and computer programming exercises that illustrate the theoretical content of the book. These exercises can be implemented using the Programmer's Imaging Kernel System (PIKS) application program interface included on the accompanying CD.

Suitable as a textbook for students or as a reference for practitioners, this new edition provides a comprehensive treatment of these vital topics: Characterization of continuous images Image sampling and quantization techniques Two-dimensional signal processing techniques Image enhancement and restoration techniques Image analysis techniques Software implementation of image processing applications In addition, the bundled CD includes: A Solaris operating system executable version of the PIKS Scientific API A Windows operating system executable version of PIKS Scientific A Windows executable version of PIKSTool, a graphical user interface method of executing many of the PIKS Scientific operators without program compilation A PDF file format version of the PIKS Scientific C programmer's reference manual C program source demonstration programs A digital image database of most of the source images used in the book plus many others widely used in the literature Note: CD-ROM/DVD and other supplementary materials are not included as part of eBook file.

A comprehensive digital image processing book that reflects new trends in this field such as document image compression and data compression standards. The book includes a complete rewrite of image data compression, a new chapter on image analysis, and a new section on image morphology.

Whether for computer evaluation of otherworldly terrain or the latest high definition 3D blockbuster, digital image processing involves the acquisition, analysis, and processing of visual information by computer and requires a unique skill set that has yet to be defined a single text. Until now. Taking an applications-oriented, engineering approach, Digital Image Processing and Analysis provides the tools for developing and advancing computer and human vision applications and brings image processing and analysis together into a unified framework. Providing information and background in a logical, as-needed fashion, the author presents topics as they become necessary for understanding the practical imaging model under study. He offers a conceptual presentation of the material for a solid understanding of complex topics and discusses the theory and foundations of digital image processing and the algorithm development needed to advance the field. With liberal use of color through-out and more materials on the processing of color images than the previous edition, this book provides supplementary exercises, a new chapter on applications, and two major new tools that allow for batch processing, the analysis of imaging algorithms, and the overall research and development of imaging applications. It includes two new software tools, the Computer Vision and Image Processing Algorithm Test and Analysis Tool (CVIP-ATAT) and the CVIP Feature

Extraction and Pattern Classification Tool (CVIP-FEPC). Divided into five major sections, this book provides the concepts and models required to analyze digital images and develop computer vision and human consumption applications as well as all the necessary information to use the CVIPtools environment for algorithm development, making it an ideal reference tool for this fast growing field.

In recent years, Moore's law has fostered the steady growth of the field of digital image processing, though the computational complexity remains a problem for most of the digital image processing applications. In parallel, the research domain of optical image processing has matured, potentially bypassing the problems digital approaches were suffering and bringing new applications. The advancement of technology calls for applications and knowledge at the intersection of both areas but there is a clear knowledge gap between the digital signal processing and the optical processing communities. This book covers the fundamental basis of the optical and image processing techniques by integrating contributions from both optical and digital research communities to solve current application bottlenecks, and give rise to new applications and solutions. Besides focusing on joint research, it also aims at disseminating the knowledge existing in both domains. Applications covered include image restoration, medical imaging, surveillance,

## File Type PDF Digital Image Processing

holography, etc... "a very good book that deserves to be on the bookshelf of a serious student or scientist working in these areas." Source: Optics and Photonics News

Digital Image Processing of Remotely Sensed Data presents a practical approach to digital image processing of remotely sensed data, with emphasis on application examples and algorithms. It explains where to get the data and what is available and what preprocessing is needed to prepare the imagery for processing. Research topics are described to indicate the limitations of computer methods. This book is comprised of seven chapters and begins with a summary of basic concepts used in remote sensing and digital imagery, followed by a discussion on sources of remotely sensed data. Two essential hardware ingredients in a digital image processing system, a computer and a display device, are then considered, along with the algorithms used in digital image processing. Examples of how digital image processing algorithms have been applied to real imagery for specific objectives are given, including the Kentucky water impoundment experiment and the land-use mapping initiative in Washington, D.C. The next section is devoted to research topics such as digital image shape detection; edge detection and regionalized terrain classification from satellite photography; and digital image enhancement for maximum interpretability using linear programming.

## File Type PDF Digital Image Processing

This monograph will be of value to professional regional planners, natural resource managers, and others in fields ranging from hydrology and forestry to agronomy and geology.

The subject of digital image processing has migrated from a graduate to a junior or senior level course as students become more proficient in mathematical background earlier in their college education. With that in mind, Introduction to Digital Image Processing is simpler in terms of mathematical derivations and eliminates derivations of advanced s

Digital image processing and analysis is a field that continues to experience rapid growth, with applications in many facets of our lives. Areas such as medicine, agriculture, manufacturing, transportation, communication systems, and space exploration are just a few of the application areas. This book takes an engineering approach to image processing and analysis, including more examples and images throughout the text than the previous edition. It provides more material for illustrating the concepts, along with new PowerPoint slides. The application development has been expanded and updated, and the related chapter provides step-by-step tutorial examples for this type of development. The new edition also includes supplementary exercises, as well as MATLAB-based exercises, to aid both the reader and student in development of their skills.

## File Type PDF Digital Image Processing

Introduce your students to image processing with the industry's most prized text For 40 years, Image Processing has been the foundational text for the study of digital image processing. The book is suited for students at the college senior and first-year graduate level with prior background in mathematical analysis, vectors, matrices, probability, statistics, linear systems, and computer programming. As in all earlier editions, the focus of this edition of the book is on fundamentals. The 4th Edition, which celebrates the book's 40th anniversary, is based on an extensive survey of faculty, students, and independent readers in 150 institutions from 30 countries. Their feedback led to expanded or new coverage of topics such as deep learning and deep neural networks, including convolutional neural nets, the scale-invariant feature transform (SIFT), maximally-stable extremal regions (MSERs), graph cuts, k-means clustering and superpixels, active contours (snakes and level sets), and exact histogram matching. Major improvements were made in reorganizing the material on image transforms into a more cohesive presentation, and in the discussion of spatial kernels and spatial filtering. Major revisions and additions were made to examples and homework exercises throughout the book. For the first time, we added MATLAB projects at the end of every chapter, and compiled support packages for you and your teacher containing,

solutions, image databases, and sample code. The support materials for this title can be found at [www.ImageProcessingPlace.com](http://www.ImageProcessingPlace.com)

Highly Regarded, Accessible Approach to Image Processing Using Open-Source and Commercial Software A Computational Introduction to Digital Image Processing, Second Edition explores the nature and use of digital images and shows how they can be obtained, stored, and displayed. Taking a strictly elementary perspective, the book only covers topics that involve simple mathematics yet offer a very broad and deep introduction to the discipline. New to the Second Edition This second edition provides users with three different computing options. Along with MATLAB®, this edition now includes GNU Octave and Python. Users can choose the best software to fit their needs or migrate from one system to another. Programs are written as modular as possible, allowing for greater flexibility, code reuse, and conciseness. This edition also contains new images, redrawn diagrams, and new discussions of edge-preserving blurring filters, ISODATA thresholding, Radon transform, corner detection, retinex algorithm, LZW compression, and other topics. Principles, Practices, and Programming Based on the author's successful image processing courses, this bestseller is suitable for classroom use or self-study. In a straightforward way, the text illustrates how to implement imaging techniques in

## File Type PDF Digital Image Processing

MATLAB, GNU Octave, and Python. It includes numerous examples and exercises to give students hands-on practice with the material.

Digital image processing, originally established to analyze and improve lunar images, is rapidly growing into a wealth of new applications, due to the enormous technical progress made in computer engineering. At present, the most important fields of growth appear to emerge in the areas of medical image processing (i. e. tomography, thermography), earth resource inventory (i. e. land usage, minerals), office automation (i. e. document storage, retrieval and reproduction) and industrial production (i. e. computer vision for mechanical robots). Currently, emphasis is being shifted from signal-processing research and design-innovation activities towards cost-efficient system implementations for interactive digital image processing. For the years ahead, trends in computer engineering indicate still further advances in Large Scale Integration (LSI) and Input/Output (I/O) technologies allowing the implementation of powerful parallel and/or distributed processor architectures for real-time processing of high resolution achromatic and color images. In view of the many new developments in the field of digital image processing and recognizing the importance of discussing these developments amongst key scientists that might make use of them, ffiM Germany sponsored an international symposium on 'Advances in Digital Image Processing', held at Bad Neuenahr, Federal Republic of Germany, September 26 - 28, 1978. The interest shown in this symposium encouraged the publication of the

## File Type PDF Digital Image Processing

papers presented in this volume of the ffiM Research Symposium Series.

Two-Dimensional Systems and Mathematical Preliminaries - Image Perception - Image Sampling and Quantization - Image Transforms - Image Representation by Stochastic Models - Image Enhancement - Image Filtering and Restoration - Image Analysis and Computer Vision - Image Reconstruction From Projections - Image Data Compression.

Hands-on text for a first course aimed at end-users, focusing on concepts, practical issues and problem solving.

This is an introductory to intermediate level text on the science of image processing, which employs the Matlab programming language to illustrate some of the elementary, key concepts in modern image processing and pattern recognition. The approach taken is essentially practical and the book offers a framework within which the concepts can be understood by a series of well chosen examples, exercises and computer experiments, drawing on specific examples from within science, medicine and engineering. Clearly divided into eleven distinct chapters, the book begins with a fast-start introduction to image processing to enhance the accessibility of later topics. Subsequent chapters offer increasingly advanced discussion of topics involving more challenging concepts, with the final chapter looking at the application of automated image classification (with Matlab examples) . Matlab is frequently used in the book as a tool for demonstrations, conducting experiments and for solving problems, as it is both ideally suited to

## File Type PDF Digital Image Processing

this role and is widely available. Prior experience of Matlab is not required and those without access to Matlab can still benefit from the independent presentation of topics and numerous examples. Features a companion website

[www.wiley.com/go/solomon/fundamentals](http://www.wiley.com/go/solomon/fundamentals) containing a Matlab fast-start primer, further exercises, examples, instructor resources and accessibility to all files corresponding to the examples and exercises within the book itself. Includes numerous examples, graded exercises and computer experiments to support both students and instructors alike.

A unique collection of algorithms and lab experiments for practitioners and researchers of digital image processing technology. With the field of digital image processing rapidly expanding, there is a growing need for a book that would go beyond theory and techniques to address the underlying algorithms. *Digital Image Processing: Algorithms and Applications* fills the gap in the field, providing scientists and engineers with a complete library of algorithms for digital image processing, coding, and analysis. Digital image transform algorithms, edge detection algorithms, and image segmentation algorithms are carefully gleaned from the literature for compatibility and a track record of acceptance in the scientific community. The author guides readers through all facets of the technology, supplementing the discussion with detailed lab exercises in EIKONA, his own digital image processing software, as well as useful PDF transparencies. He covers in depth filtering and enhancement, transforms, compression, edge detection,

## File Type PDF Digital Image Processing

region segmentation, and shape analysis, explaining at every step the relevant theory, algorithm structure, and its use for problem solving in various applications. The availability of the lab exercises and the source code (all algorithms are presented in C-code) over the Internet makes the book an invaluable self-study guide. It also lets interested readers develop digital image processing applications on ordinary desktop computers as well as on Unix machines.

This book introduces the fundamental concepts of modern digital image processing. It aims to help the students, scientists, and practitioners to understand the concepts through clear explanations, illustrations and examples. The discussion of the general concepts is supplemented with examples from applications and ready-to-use implementations of concepts in MATLAB®. Program code of some important concepts in programming language 'C' is provided. To explain the concepts, MATLAB® functions are used throughout the book. MATLAB® Version 9.3 (R2017b), Image Acquisition Toolbox Version 5.3 (R2017b), Image Processing Toolbox, Version 10.1 (R2017b) have been used to create the book material. Meant for students and practicing engineers, this book provides a clear, comprehensive and up-to-date introduction to Digital Image Processing in a pragmatic manner.

The SpringerBrief covers fundamentals of digital image processing including image concept, image file formats, creating user interfaces and many practical examples of processing images using C++ and Java. These practical examples include among other creating image

## File Type PDF Digital Image Processing

histograms, performing lossless image compression, detecting change in colors, similarity-based image retrieval and others. All practical examples are accompanied with an explanation how to create programs and the obtained results. This SpringerBrief can be very useful for the undergraduate courses on image processing, providing students with the basic tools in image analysis and processing. Practitioners and researchers working in this field will also find this research useful.

This long-established and well-received monograph offers an integral view of image processing - from image acquisition to the extraction of the data of interest – written by a physical scientist for other scientists. Supplements discussion of the general concepts is supplemented with examples from applications on PC-based image processing systems and ready-to-use implementations of important algorithms. Completely revised and extended, the most notable extensions being a detailed discussion on random variables and fields, 3-D imaging techniques and a unified approach to regularized parameter estimation. Complete text of the book is now available on the accompanying CD-ROM. It is hyperlinked so that it can be used in a very flexible way. CD-ROM contains a full set of exercises to all topics covered by this book and a runtime version of the image processing software *heurisko*. A large collection of images, image sequences, and volumetric images is available for practice exercises

En introduktion til digital billedbehandling.

Digital holography and digital image processing are twins

## File Type PDF Digital Image Processing

born by computer era. They share origin, theoretical base, methods and algorithms. The present book describes these common fundamentals principles, methods and algorithms including image and hologram digitization, data compression, digital transforms and efficient computational algorithms, statistical and Monte-Carlo methods, image restoration and enhancement, image reconstruction in tomography and digital holography, discrete signal resampling and image geometrical transformations, accurate measurements and reliable target localization in images, recording and reconstruction of computer generated holograms, adaptive and nonlinear filters for sensor signal perfecting and image restoration and enhancement. The book combines theory, heavily illustrated practical methods and efficient computational algorithms and is written for senior-level undergraduate and graduate students, researchers and engineers in optics, photonics, opto-electronics and electronic engineering.

Avoiding heavy mathematics and lengthy programming details, *Digital Image Processing: An Algorithmic Approach with MATLAB®* presents an easy methodology for learning the fundamentals of image processing. The book applies the algorithms using MATLAB®, without bogging down students with syntactical and debugging issues. One chapter can typically be completed per week, with each chapter divided into three sections. The first section presents theoretical topics in a very simple and basic style with generic language and mathematics. The second section explains the theoretical concepts using flowcharts to streamline the concepts and to form a

## File Type PDF Digital Image Processing

foundation for students to code in any programming language. The final section supplies MATLAB codes for reproducing the figures presented in the chapter. Programming-based exercises at the end of each chapter facilitate the learning of underlying concepts through practice. This textbook equips undergraduate students in computer engineering and science with an essential understanding of digital image processing. It will also help them comprehend more advanced topics and sophisticated mathematical material in later courses. A color insert is included in the text while various instructor resources are available on the author's website.

Digital Image Processing Techniques is a state-of-the-art review of digital image processing techniques, with emphasis on the processing approaches and their associated algorithms. A canonical set of image processing problems that represent the class of functions typically required in most image processing applications is presented. Each chapter broadly addresses the problem being considered; the best techniques for this particular problem and how they work; their strengths and limitations; and how the techniques are actually implemented as well as their computational aspects. Comprised of eight chapters, this volume begins with a discussion on processing techniques associated with the following tasks: image enhancement, restoration, detection and estimation, reconstruction, and analysis, along with image data compression and image spectral estimation. The second section describes hardware and software systems for digital image processing. Aspects

## File Type PDF Digital Image Processing

of commercially available systems that combine both processing and display functions are considered, as are future prospects for their technological and architectural evolution. The specifics of system design trade-offs are explicitly presented in detail. This book will be of interest to students, practitioners, and researchers in various disciplines including digital signal processing, computer science, statistical communications theory, control systems, and applied physics.

This unique reference presents in-depth coverage of the latest methods and applications of digital image processing describing various computer architectures ideal for satisfying specific image processing demands. Basic topological algorithms are the subject of this new book. It presents their underlying theory and discusses their applications. Due to the wide variety of topics treated in the seven chapters, no attempt has been made to standardize the notation and terminology used by the authors. Each chapter, however, is self-contained and can be read independently of the others. Some of the basic terminology and fundamental concepts of digital topology are reviewed in the appendix which also describes important areas of the field. A bibliography of over 360 references is also provided. The notations and terminologies used in this book will serve to introduce readers to the even wider variety that exists in the voluminous literature dealing with topological algorithms.

[Copyright: 343467fa5e6b94714829cf1df218701d](#)