

Read Online A Computational Introduction To Digital Image Processing Second Edition

A Computational Introduction To Digital Image Processing Second Edition

The new edition of an introductory text that teaches students the art of computational problem solving, covering topics ranging from simple algorithms to information visualization. This book introduces students with little or no prior programming experience to the art of computational problem solving using Python and

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various Python libraries, including PyLab. It provides students with skills that will enable them to make productive use of computational techniques, including some of the tools and techniques of data science for using computation to model and interpret data. The book is based on an MIT course (which became the most popular course offered through MIT's OpenCourseWare) and was developed for use not only in a conventional classroom but in in a massive open online course (MOOC). This new edition has been updated for Python 3, reorganized to make it easier

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to use for courses that cover only a subset of the material, and offers additional material including five new chapters. Students are introduced to Python and the basics of programming in the context of such computational concepts and techniques as exhaustive enumeration, bisection search, and efficient approximation algorithms. Although it covers such traditional topics as computational complexity and simple algorithms, the book focuses on a wide range of topics not found in most introductory texts, including information visualization, simulations to model

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randomness, computational techniques to understand data, and statistical techniques that inform (and misinform) as well as two related but relatively advanced topics: optimization problems and dynamic programming. This edition offers expanded material on statistics and machine learning and new chapters on Frequentist and Bayesian statistics.

This book forms the first part of a complete MSc course in an area that is fundamental to the continuing revolution in information technology and communication systems. Massively exhaustive,

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authoritative, comprehensive and reinforced with software, this is an introduction to modern methods in the developing field of Digital Signal Processing (DSP). The focus is on the design of algorithms and the processing of digital signals in areas of communications and control, providing the reader with a comprehensive introduction to the underlying principles and mathematical models. Provides an introduction to modern methods in the developing field of Digital Signal Processing (DSP) Focuses on the design of algorithms and the processing of digital signals in areas of

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communications and control Provides a comprehensive introduction to the underlying principles and mathematical models of Digital Signal Processing

This book constitutes the proceedings of the Third International Conference on Networked Digital Technologies, held in Macau, China, in July 2011. The 41 revised papers presented were carefully reviewed and selected from 127 submissions. The papers are organized in topical sections on information security, networks, information management, multimedia, human computer

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interaction and simulation, e-learning and e-government, Web services/semantics, user centric information system/intelligent computing, and data mining.

Very Good, No Highlights or Markup, all pages are intact.

Computational Number Theory and Digital Signal Processing

Introduction to Digital Professional Mobile Radio Principles, Algorithms and System Design

Introduction to Digital Libraries

A Computational Introduction to Digital Image

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Processing, Second Edition, 2nd Edition
Handbook of Research on Computational Forensics,
Digital Crime, and Investigation: Methods and
Solutions

Computational science is an exciting new field at the intersection of the sciences, computer science, and mathematics because much scientific investigation now involves computing as well as theory and experiment. This textbook provides students with a versatile and accessible introduction to the subject. It assumes only a background in high school algebra, enables instructors to follow

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tailored pathways through the material, and is the only textbook of its kind designed specifically for an introductory course in the computational science and engineering curriculum. While the text itself is generic, an accompanying website offers tutorials and files in a variety of software packages. This fully updated and expanded edition features two new chapters on agent-based simulations and modeling with matrices, ten new project modules, and an additional module on diffusion. Besides increased treatment of high-performance computing and its applications, the book also includes

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additional quick review questions with answers, exercises, and individual and team projects. The only introductory textbook of its kind—now fully updated and expanded Features two new chapters on agent-based simulations and modeling with matrices Increased coverage of high-performance computing and its applications Includes additional modules, review questions, exercises, and projects An online instructor's manual with exercise answers, selected project solutions, and a test bank and solutions (available only to professors) An online illustration package is available

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to professors

Adequate texts that introduce the concepts of abstract algebra are plentiful. None, however, are more suited to those needing a mathematical background for careers in engineering, computer science, the physical sciences, industry, or finance than Algebra: A Computational Introduction. Along with a unique approach and presentation, the author demonstrates how software can be used as a problem-solving tool for algebra. A variety of factors set this text apart. Its clear exposition, with each chapter building upon the previous ones, provides greater clarity

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for the reader. The author first introduces permutation groups, then linear groups, before finally tackling abstract groups. He carefully motivates Galois theory by introducing Galois groups as symmetry groups. He includes many computations, both as examples and as exercises. All of this works to better prepare readers for understanding the more abstract concepts. By carefully integrating the use of Mathematica® throughout the book in examples and exercises, the author helps readers develop a deeper understanding and appreciation of the material. The numerous exercises and examples

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along with downloads available from the Internet help establish a valuable working knowledge of Mathematica and provide a good reference for complex problems encountered in the field.

If you are involved in the planning, design, testing, installation, maintenance, sales, or frequency management of digital PMR equipment and systems, this first-of-its-kind book is a smart choice. Written by one of the key developers of PMR, this essential reference provides comprehensive coverage of digital PMR systems, including the standards APCO 25, TETRA and DIIS and the proprietary systems

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ASTRO, EDACS, iDEN, MOBITEX II and TETRAPOL. Offering unique insight from the author's years of experience working with this technology, the book helps you gain a solid understanding of the transition from analogue to digital PMR. It provides you with methods for estimation coverage distance and bandwidth for digital PMR systems. Computer Graphics & Graphics Applications Digital Humanities and Christianity Introduction to Computational Science A Computational Approach to Digital Chinese Painting and Calligraphy Computational Thinking

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Second Kyoto Workshop on Digital Cities, Kyoto, Japan, October 18-20, 2001. Revised Papers

Theoretical and Computational Advances

Confronting the digital revolution in academia, this book examines the application of new computational techniques and visualisation technologies in the Arts & Humanities. Uniting differing perspectives, leading and emerging scholars discuss the theoretical and practical challenges that computation raises for these disciplines. Digital signal processing (DSP) has been applied to a very wide range of applications. This includes voice

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processing, image processing, digital communications, the transfer of data over the internet, image and data compression, etc. Engineers who develop DSP applications today, and in the future, will need to address many implementation issues including mapping algorithms to computational structures, computational efficiency, power dissipation, the effects of finite precision arithmetic, throughput and hardware implementation. It is not practical to cover all of these in a single text. However, this text emphasizes the practical implementation of DSP algorithms as well as the fundamental theories and analytical procedures that

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form the basis for modern DSP applications. Digital Signal Processing: Principles, Algorithms and System Design provides an introduction to the principals of digital signal processing along with a balanced analytical and practical treatment of algorithms and applications for digital signal processing. It is intended to serve as a suitable text for a one semester junior or senior level undergraduate course. It is also intended for use in a following one semester first-year graduate level course in digital signal processing. It may also be used as a reference by professionals involved in the design of embedded computer systems, application specific

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integrated circuits or special purpose computer systems for digital signal processing, multimedia, communications, or image processing. Covers fundamental theories and analytical procedures that form the basis of modern DSP Shows practical implementation of DSP in software and hardware Includes Matlab for design and implementation of signal processing algorithms and related discrete time systems Bridges the gap between reference texts and the knowledge needed to implement DSP applications in software or hardware

A Computational Introduction to Digital Image

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Processing CRC Press

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

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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

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straightforward way, the text illustrates how to implement imaging techniques in MATLAB, GNU Octave, and Python. It includes numerous examples and exercises to give students hands-on practice with the material.

*Digital Image Watermarking
With Examples in R and Python*

Networked Digital Technologies

Systems-Level Modelling of Cellular Networks

A Computational Introduction to Digital Image Processing

Methods and Solutions

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"A Computational Approach to Digital Chinese Painting and Calligraphy" is a technical book on computer science and its applications in the arts. It focuses on Oriental digital arts, in particular Chinese arts and painting, offering a multi-disciplinary treatment from the angles of computer graphics, interactive techniques, human-computer interaction, and artificial intelligence. The book also discusses the unique difficulties and challenges of using the computer to produce Oriental arts, including research results by the authors and their lessons and engineering experiences behind these efforts.

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Songhua Xu is a computer scientist of Zhejiang University and Yale University, as well as an honorary researcher of the University of Hong Kong. Francis C.M. Lau is Professor at the University of Hong Kong where he leads the Systems Research Group in the Department of Computer Science. Yunhe Pan is Professor of Computer Science at Zhejiang University as well as Deputy President of Chinese Academy of Engineering.

This book defines and describes a new discipline, named “computational psychometrics,” from the perspective of new methodologies for handling

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complex data from digital learning and assessment. The editors and the contributing authors discuss how new technology drastically increases the possibilities for the design and administration of learning and assessment systems, and how doing so significantly increases the variety, velocity, and volume of the resulting data. Then they introduce methods and strategies to address the new challenges, ranging from evidence identification and data modeling to the assessment and prediction of learners' performance in complex settings, as in collaborative tasks, game/simulation-based tasks,

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and multimodal learning and assessment tasks. Computational psychometrics has thus been defined as a blend of theory-based psychometrics and data-driven approaches from machine learning, artificial intelligence, and data science. All these together provide a better methodological framework for analysing complex data from digital learning and assessments. The term “computational” has been widely adopted by many other areas, as with computational statistics, computational linguistics, and computational economics. In those contexts, “computational” has a meaning similar to the one

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proposed in this book: a data-driven and algorithm-focused perspective on foundations and theoretical approaches established previously, now extended and, when necessary, reconceived. This interdisciplinarity is already a proven success in many disciplines, from personalized medicine that uses computational statistics to personalized learning that uses, well, computational psychometrics. We expect that this volume will be of interest not just within but beyond the psychometric community. In this volume, experts in psychometrics, machine learning, artificial intelligence, data science and natural language

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processing illustrate their work, showing how the interdisciplinary expertise of each researcher blends into a coherent methodological framework to deal with complex data from complex virtual interfaces. In the chapters focusing on methodologies, the authors use real data examples to demonstrate how to implement the new methods in practice. The corresponding programming codes in R and Python have been included as snippets in the book and are also available in fuller form in the GitHub code repository that accompanies the book. This textbook provides a comprehensive and

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reader-friendly introduction to the field of computational social science (CSS). Presenting a unified treatment, the text examines in detail the four key methodological approaches of automated social information extraction, social network analysis, social complexity theory, and social simulation modeling. This updated new edition has been enhanced with numerous review questions and exercises to test what has been learned, deepen understanding through problem-solving, and to practice writing code to implement ideas. Topics and features: contains more than a thousand questions and exercises, together with

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a list of acronyms and a glossary; examines the similarities and differences between computers and social systems; presents a focus on automated information extraction; discusses the measurement, scientific laws, and generative theories of social complexity in CSS; reviews the methodology of social simulations, covering both variable- and object-oriented models.

This book presents recent research in intelligent and fuzzy techniques. Emerging conditions such as pandemic, wars, natural disasters and various high technologies force people for significant changes in business and social life. The adoption

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of digital technologies to transform services or businesses, through replacing non-digital or manual processes with digital processes or replacing older digital technology with newer digital technologies through intelligent systems is the main scope of this book. It focuses on revealing the reflection of digital transformation in our business and social life under emerging conditions through intelligent and fuzzy systems. The latest intelligent and fuzzy methods and techniques on digital transformation are introduced by theory and applications. The intended readers are intelligent and fuzzy

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systems researchers, lecturers, M.Sc. and Ph.D. students studying digital transformation. Usage of ordinary fuzzy sets and their extensions, heuristics and metaheuristics from optimization to machine learning, from quality management to risk management makes the book an excellent source for researchers.

Introduction to Digital Logic Techniques and Systems

An Introduction to Computational Systems Biology

Fast Algorithms and Error Control Techniques
Introduction to Digital Computer Engineering

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A Computational Introduction
Computational Intelligence in Digital and Network
Designs and Applications

Content protection and digital rights management (DRM) are fields that receive a lot of attention: content owners require systems that protect and maximize their revenues; consumers want backwards compatibility, while they fear that content owners will spy on their viewing habits; and academics are afraid that DRM may be a barrier to knowledge sharing. DRM technologies have a poor reputation and are not yet trusted. This book describes the key aspects of content protection and

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DRM systems, the objective being to demystify the technology and techniques. In the first part of the book, the author builds the foundations, with sections that cover the rationale for protecting digital video content; video piracy; current toolboxes that employ cryptography, watermarking, tamper resistance, and rights expression languages; different ways to model video content protection; and DRM. In the second part, he describes the main existing deployed solutions, including video ecosystems; how video is protected in broadcasting; descriptions of DRM systems, such as Microsoft's DRM and Apple's FairPlay; techniques for protecting

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prerecorded content distributed using DVDs or Blu-ray; and future methods used to protect content within the home network. The final part of the book looks towards future research topics, and the key problem of interoperability. While the book focuses on protecting video content, the DRM principles and technologies described are also used to protect many other types of content, such as ebooks, documents and games. The book will be of value to industrial researchers and engineers developing related technologies, academics and students in information security, cryptography and media systems, and engaged consumers.

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This book delivers a comprehensive and insightful account of applying mathematical modelling approaches to very large biological systems and networks—a fundamental aspect of computational systems biology. The book covers key modelling paradigms in detail, while at the same time retaining a simplicity that will appeal to those from less quantitative fields. Key Features: A hands-on approach to modelling Covers a broad spectrum of modelling, from static networks to dynamic models and constraint-based models Thoughtful exercises to test and enable understanding of concepts State-of-the-art chapters on exciting new developments,

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like community modelling and biological circuit design Emphasis on coding and software tools for systems biology Companion website featuring lecture videos, figure slides, codes, supplementary exercises, further reading, and appendices:

<https://ramanlab.github.io/SysBioBook/> An Introduction to Computational Systems Biology: Systems-Level Modelling of Cellular Networks is highly multi-disciplinary and will appeal to biologists, engineers, computer scientists, mathematicians and others.

This book discusses the computational geometry, topology and physics of digital images and video

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frame sequences. This trio of computational approaches encompasses the study of shape complexes, optical vortex nerves and proximities embedded in triangulated video frames and single images, while computational geometry focuses on the geometric structures that infuse triangulated visual scenes. The book first addresses the topology of cellular complexes to provide a basis for an introductory study of the computational topology of visual scenes, exploring the fabric, shapes and structures typically found in visual scenes. The book then examines the inherent geometry and topology of visual scenes, and the fine structure of light and

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light caustics of visual scenes, which bring into play catastrophe theory and the appearance of light caustic folds and cusps. Following on from this, the book introduces optical vortex nerves in triangulated digital images. In this context, computational physics is synonymous with the study of the fine structure of light choreographed in video frames. This choreography appears as a sequence of snapshots of light reflected and refracted from surface shapes, providing a solid foundation for detecting, analyzing and classifying visual scene shapes.

Vol. for 1962 includes the preliminary edition of "An

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introduction to digital computing, by Bruce W. Arden" published in 1962 by the Addison-Wesley Pub. Co.

Computational Intelligence in Digital Forensics: Forensic Investigation and Applications An Introduction

An Introduction to Digital Computing

Intelligent and Fuzzy Techniques for Emerging Conditions and Digital Transformation

Digital Cities II: Computational and Sociological Approaches

Designed to provide a comprehensive and practical insight to the basic concepts of Digital Electronics, this book brings together

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information on theory, operational aspects and practical applications of digital circuits in a succinct style that is suitable for undergraduate students. Spread across 16 chapters, the book walks the student through the first principles and the Karnaugh mapping reduction technique before proceeding to elaborate on the design and implementation of complex digital circuits. With ample examples and exercises to reinforce theory and an exclusive chapter allotted for electronic experiments, this textbook is an ideal classroom companion for students.

Presents the fundamentals of digital computer programming. "This book presents a holistic view of the new digital library scene ... it is an essential guide to good digital practice and techniques" - back cover.

The Book presents an overview of newly developed watermarking

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techniques in various independent and hybrid domains Covers the basics of digital watermarking, its types, domain in which it is implemented and the application of machine learning algorithms onto digital watermarking Reviews hardware implementation of watermarking Discusses optimization problems and solutions in watermarking with a special focus on bio-inspired algorithms Includes a case study along with its MATLAB code and simulation results

Modeling and Simulation for the Sciences, Second Edition

Introduction to Digital Signal Processing

Algebra

Mathematical and Computational Methods, Software

Development and Applications

A Computational Introduction to Number Theory and Algebra

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Introduction to Computation and Programming Using Python, second edition

Military service involves exposure to multiple sources of chronic, acute, and potentially traumatic stress, especially during deployment and combat.

Notoriously variable, the effects of stress can be subtle to severe, immediate or delayed, impairing individual and group readiness, operational performance, and—ultimately—survival. A comprehensive compilation on the state of the science, Biobehavioral Resilience to Stress identifies key factors and characteristics that are essential to a scientifically useful and behaviorally predictive understanding of resilience to stress. Contributions

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from Uniquely Qualified Military and Civilian Experts Initiated by the Military Operational Medicine Research Directorate of the US Army Medical Research and Materiel Command (USAMRMC), this seminal volume integrates recent research and experience from military and civilian experts in behavioral and social sciences, human performance, and physiology. Each chapter is grounded in vigorous research with emphasis on relevance to a variety of real-world operations and settings, including extreme environments encountered in modern war. Logical Progression, Cross-Disciplinary Appeal Organized into four sections, the text begins with a discussion of the relevant aspects of stress in the context of

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military life to offer civilian readers a window into contemporary military priorities. Later chapters consider biological, physiological, and genetic factors, psychosocial aspects of resilience, and “community capacity” variables that influence psychological responses to stressful events. This multidisciplinary effort concludes with an overview of emergent themes and related issues to advance the science of resilience toward predictive research, theory, and application for all those—military and civilian—who serve in the national defense. Computational Intelligence techniques have been widely explored in various domains including forensics. Analysis in forensic encompasses the study

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of pattern analysis that answer the question of interest in security, medical, legal, genetic studies and etc. However, forensic analysis is usually performed through experiments in lab which is expensive both in cost and time. Therefore, this book seeks to explore the progress and advancement of computational intelligence technique in different focus areas of forensic studies. This aims to build stronger connection between computer scientists and forensic field experts. This book, Computational Intelligence in Digital Forensics: Forensic Investigation and Applications, is the first volume in the Intelligent Systems Reference Library series. The book presents original research results and

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innovative applications of computational intelligence in digital forensics. This edited volume contains seventeen chapters and presents the latest state-of-the-art advancement of Computational Intelligence in Digital Forensics; in both theoretical and application papers related to novel discovery in intelligent forensics. The chapters are further organized into three sections: (1) Introduction, (2) Forensic Discovery and Investigation, which discusses the computational intelligence technologies employed in Digital Forensic, and (3) Intelligent Forensic Science Applications, which encompasses the applications of computational intelligence in Digital Forensic, such as human anthropology, human biometrics, human by

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products, drugs, and electronic devices.

This book explains the application of recent advances in computational intelligence - algorithms, design methodologies, and synthesis techniques - to the design of integrated circuits and systems. It highlights new biasing and sizing approaches and optimization techniques and their application to the design of high-performance digital, VLSI, radio-frequency, and mixed-signal circuits and systems.

This second of two related volumes addresses digital and network designs and applications, with 12 chapters grouped into parts on digital circuit design, network optimization, and applications. It will be of interest to practitioners and researchers in computer

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science and electronics engineering engaged with the design of electronic circuits.

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

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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

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

**An Introduction to Digital Signal Processing
Third International Conference, NDT 2011, Macau, China, July 11-13, 2011, Proceedings**

Computational Geometry, Topology and Physics of Digital Images with Applications

Understanding Digital Humanities

With Application to Understanding Data

An Introduction to Digital Multimedia

Introduces digital mobile

communications with an emphasis on

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digital transmission methods This book presents mathematical analyses of signals, mobile radio channels, and digital modulation methods. The new edition covers the evolution of wireless communications technologies and systems. The major new topics are OFDM (orthogonal frequency domain multiplexing), MIMO (multi-input multi-output) systems, frequency-domain equalization, the turbo codes, LDPC (low density parity check code), ACELP

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(algebraic code excited linear predictive) voice coding, dynamic scheduling for wireless packet data transmission and nonlinearity compensating digital pre-distorter amplifiers. The new systems using the above mentioned technologies include the second generation evolution systems, the third generation systems with their evolution systems, LTE and LTE-advanced systems, and advanced wireless local area network systems.

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The second edition of Digital Mobile Communication: Presents basic concepts and applications to a variety of mobile communication systems Discusses current applications of modern digital mobile communication systems Covers the evolution of wireless communications technologies and systems in conjunction with their background The second edition of Digital Mobile Communication is an important textbook for university students, researchers, and engineers

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*involved in wireless communications.
Introduction to Digital Filtering in
Geophysics*

*This advanced textbook provides an
introduction to the basic methods of
computational physics.*

*"This book provides a media for
advancing research and the development
of theory and practice of digital crime
prevention and forensics, embracing a
broad range of digital crime and
forensics disciplines"--Provided by*

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publisher.

*Introduction to Digital Filtering in
Geophysics*

*An Image Processing Tour of College
Mathematics*

*Shape Complexes, Optical Vortex Nerves
and Proximities*

*Introduction to Computational Social
Science*

*Introduction to Digital Electronics,
1/e*

An Introduction to Computational

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Physics

An Image Processing Tour of College Mathematics aims to provide meaningful context for reviewing key topics of the college mathematics curriculum, to help students gain confidence in using concepts and techniques of applied mathematics, to increase student awareness of recent developments in mathematical sciences, and to help students prepare for graduate studies. The topics covered include a library of elementary functions, basic concepts of descriptive statistics, probability distributions of functions of random variables, definitions and concepts behind first- and second-order derivatives, most concepts and techniques of traditional linear algebra courses, an introduction to Fourier

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analysis, and a variety of discrete wavelet transforms – all of that in the context of digital image processing. Features Pre-calculus material and basic concepts of descriptive statistics are reviewed in the context of image processing in the spatial domain. Key concepts of linear algebra are reviewed both in the context of fundamental operations with digital images and in the more advanced context of discrete wavelet transforms. Some of the key concepts of probability theory are reviewed in the context of image equalization and histogram matching. The convolution operation is introduced painlessly and naturally in the context of naïve filtering for denoising and is subsequently used for edge detection and image restoration. An accessible

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elementary introduction to Fourier analysis is provided in the context of image restoration. Discrete wavelet transforms are introduced in the context of image compression, and the readers become more aware of some of the recent developments in applied mathematics. This text helps students of mathematics ease their way into mastering the basics of scientific computer programming.

This volume provides the first comprehensive introduction to the intersections between Christianity and the digital humanities. DH is a well-established, fast-growing, multidisciplinary field producing computational applications and analytical models to enable new kinds of research. Scholars of Christianity were among the

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first pioneers to explore these possibilities, using digital approaches to transform the study of Christian texts, history and ideas, and innovative work is taking place today all over the world. This volume aims to celebrate and continue that legacy by bringing together 15 of the most exciting contemporary projects, grouped into four categories. “Canon, corpus and manuscript” examines physical texts and collections. “Words and meanings” explores digital approaches to language and linguistics. “Digital history” uses digital techniques to explore the Christian past, and “Theology and pedagogy” engages with digital approaches to teaching, formation and Christian ideas. This volume introduces key debates, shares exciting initiatives, and aims to encourage new

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innovations in analysis and communication. Christianity and the Digital Humanities is ideally suited as a starting point for students and researchers interested in this vast and complex field.

An introduction to computational thinking that traces a genealogy beginning centuries before the digital computer. A few decades into the digital era, scientists discovered that thinking in terms of computation made possible an entirely new way of organizing scientific investigation; eventually, every field had a computational branch: computational physics, computational biology, computational sociology. More recently, “computational thinking” has become part of the K–12 curriculum. But what is computational thinking? This volume in the MIT

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Press Essential Knowledge series offers an accessible overview, tracing a genealogy that begins centuries before digital computers and portraying computational thinking as pioneers of computing have described it. The authors explain that computational thinking (CT) is not a set of concepts for programming; it is a way of thinking that is honed through practice: the mental skills for designing computations to do jobs for us, and for explaining and interpreting the world as a complex of information processes. Mathematically trained experts (known as “computers”) who performed complex calculations as teams engaged in CT long before electronic computers. The authors identify six dimensions of today's highly developed CT—methods,

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machines, computing education, software engineering, computational science, and design—and cover each in a chapter. Along the way, they debunk inflated claims for CT and computation while making clear the power of CT in all its complexity and multiplicity.

This introductory book emphasises algorithms and applications, such as cryptography and error correcting codes.

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Proceedings of the INFUS 2021 Conference, held August 24-26, 2021. Volume 1

Techniques for DRM and Content Protection

Securing Digital Video

Computational Psychometrics: New Methodologies for a

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New Generation of Digital Learning and Assessment Principles and Applications

This book provides rigorous foundations of applying modern computational mechanics to earthquake engineering. The scope covers the numerical analysis of earthquake wave propagation processes and the faulting processes, and also presents the most advanced numerical simulations of earthquake hazards and disasters that can take place in an urban area. Two new chapters included are advanced topics on high performance computing and for constructing an analysis model. This is the first book in earthquake engineering that explains the application of modern numerical

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computation (which includes high performance computing) to various engineering seismology problems.
Introduction to Computational Earthquake Engineering
Introduction to Digital Mobile Communication
Digital Signal Processing