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Mathematics and Computing Debdas Ghosh 2018-04-13 This book constitutes the proceedings of the 4th International Conference on Mathematics and Computing, ICMC 2018, held in Varanasi, India, in January 2018. The 29 papers presented in this volume were carefully reviewed and selected from 116 submissions. They are organized in topical sections on security and coding theory; computing; applied mathematics; pure mathematics.

Breast Imaging Hiroshi Fujita 2014-06-23 This book constitutes the refereed proceedings of the 12th International Workshop on Breast Imaging, IWDM 2014, held in Gifu City, Japan, in June/July 2014. The 24 revised full papers and 73 revised poster papers presented together with 6 invited talks were carefully reviewed and selected from 122 submissions. The papers are organized in topical sections on screening outcomes, ultrasound, breast density, imaging physics, CAD, tomosynthesis and ICT and image processing.

ICCCE 2020 Amit Kumar 2020-10-11 This book is a collection of research papers and articles presented at

the 3rd International Conference on Communications and Cyber-Physical Engineering (ICCCE 2020), held on 1-2 February 2020 at CMR Engineering College, Hyderabad, Telangana, India. Discussing the latest developments in voice and data communication engineering, cyber-physical systems, network science, communication software, image and multimedia processing research and applications, as well as communication technologies and other related technologies, it includes contributions from both academia and industry. This book is a valuable resource for scientists, research scholars and PG students working to formulate their research ideas and find the future directions in these areas. Further, it may serve as a reference work to understand the latest engineering and technologies used by practicing engineers in the field of communication engineering.

Mathematics for Machine Learning Marc Peter Deisenroth 2020-04-23 The fundamental mathematical tools needed to understand machine learning include linear algebra, analytic geometry, matrix decompositions, vector calculus, optimization, probability and statistics. These topics are traditionally taught in disparate

courses, making it hard for data science or computer science students, or professionals, to efficiently learn the mathematics. This self-contained textbook bridges the gap between mathematical and machine learning texts, introducing the mathematical concepts with a minimum of prerequisites. It uses these concepts to derive four central machine learning methods: linear regression, principal component analysis, Gaussian mixture models and support vector machines. For students and others with a mathematical background, these derivations provide a starting point to machine learning texts. For those learning the mathematics for the first time, the methods help build intuition and practical experience with applying mathematical concepts. Every chapter includes worked examples and exercises to test understanding. Programming tutorials are offered on the book's web site.

Neuromorphic Engineering Systems and Applications Chiara Bartolozzi 2021-12-01

Time-of-Flight Cameras Miles Hansard 2012-11-06 Time-of-flight (TOF) cameras provide a depth value at each pixel, from which the 3D structure of the scene can be estimated. This new type of active sensor makes it possible to go beyond traditional 2D image processing, directly to depth-based and 3D scene processing. Many computer vision and graphics applications can benefit from TOF data, including 3D reconstruction, activity and gesture recognition, motion capture and face detection. It is already possible to use multiple TOF cameras, in order to increase the scene coverage, and to combine the depth data with images from several colour cameras. Mixed TOF and colour systems can be used for computational photography, including full 3D scene modelling, as well as for illumination and depth-of-field manipulations. This work is a technical introduction to TOF sensors, from architectural and design issues, to selected image processing and computer vision methods.

Handbook of Visual Optics, Two-Volume Set Pablo Artal 2017-06-27 Handbook of Visual Optics offers an

authoritative overview of encyclopedic knowledge in the field of physiological optics. It builds from fundamental concepts to the science and technology of instruments and practical procedures of vision correction, integrating expert knowledge from physics, medicine, biology, psychology, and engineering. The chapters comprehensively cover all aspects of modern study and practice, from optical principles and optics of the eye and retina to novel ophthalmic tools for imaging and visual testing, devices and techniques for visual correction, and the relationship between ocular optics and visual perception.

Interpretable Machine Learning Christoph Molnar 2020 This book is about making machine learning models and their decisions interpretable. After exploring the concepts of interpretability, you will learn about simple, interpretable models such as decision trees, decision rules and linear regression. Later chapters focus on general model-agnostic methods for interpreting black box models like feature importance and accumulated local effects and explaining individual predictions with Shapley values and LIME. All interpretation methods are explained in depth and discussed critically. How do they work under the hood? What are their strengths and weaknesses? How can their outputs be interpreted? This book will enable you to select and correctly apply the interpretation method that is most suitable for your machine learning project.

Religion and Media in China Stefania Travagnin 2016-11-10 This volume focuses on the intersection of religion and media in China, bringing interdisciplinary approaches to bear on the role of religion in the lives of individuals and greater shifts within Chinese society in an increasingly media-saturated environment. With case studies focusing on Mainland China (including Tibet), Hong Kong and Taiwan, as well as diasporic Chinese communities outside Asia, contributors consider topics including the historical and ideological roots of media representations of religion, expressions of religious faith online and in social media, state

intervention (through both censorship and propaganda), religious institutions' and communities' use of various forms of media, and the role of the media in relations between online/offline and local/diaspora communities. Chapters engage with the major religious traditions practiced in contemporary China, namely Buddhism, Daoism, Confucianism, Christianity, Islam, and new religious movements. Religion and the Media in China serves as a critical survey of case studies and suggests theoretical and methodological tools for a thorough and systematic study of religion in modern China. Contributors to the volume include historians of religion, sinologists, sociologists, political scientists, anthropologists, and media and communication scholars. The critical theories that contributors develop around key concepts in religion—such as authority, community, church, ethics, pilgrimage, ritual, text, and practice—contribute to advancing the emerging field of religion and media studies.

The built environment and public health: New insights

Linchuan Yang 2023-02-06

Foundations of Data Science Avrim Blum 2020-01-23 This book provides an introduction to the mathematical and algorithmic foundations of data science, including machine learning, high-dimensional geometry, and analysis of large networks. Topics include the counterintuitive nature of data in high dimensions, important linear algebraic techniques such as singular value decomposition, the theory of random walks and Markov chains, the fundamentals of and important algorithms for machine learning, algorithms and analysis for clustering, probabilistic models for large networks, representation learning including topic modelling and non-negative matrix factorization, wavelets and compressed sensing. Important probabilistic techniques are developed including the law of large numbers, tail inequalities, analysis of random projections, generalization guarantees in machine learning, and moment methods for analysis of phase transitions in large random graphs. Additionally, important structural

and complexity measures are discussed such as matrix norms and VC-dimension. This book is suitable for both undergraduate and graduate courses in the design and analysis of algorithms for data.

Understanding Machine Learning Shai Shalev-Shwartz 2014-05-19 Introduces machine learning and its algorithmic paradigms, explaining the principles behind automated learning approaches and the considerations underlying their usage.

Basic Modern Algebra with Applications Mahima Ranjan Adhikari 2013-12-08 The book is primarily intended as a textbook on modern algebra for undergraduate mathematics students. It is also useful for those who are interested in supplementary reading at a higher level. The text is designed in such a way that it encourages independent thinking and motivates students towards further study. The book covers all major topics in group, ring, vector space and module theory that are usually contained in a standard modern algebra text. In addition, it studies semigroup, group action, Hopf's group, topological groups and Lie groups with their actions, applications of ring theory to algebraic geometry, and defines Zariski topology, as well as applications of module theory to structure theory of rings and homological algebra. Algebraic aspects of classical number theory and algebraic number theory are also discussed with an eye to developing modern cryptography. Topics on applications to algebraic topology, category theory, algebraic geometry, algebraic number theory, cryptography and theoretical computer science interlink the subject with different areas. Each chapter discusses individual topics, starting from the basics, with the help of illustrative examples. This comprehensive text with a broad variety of concepts, applications, examples, exercises and historical notes represents a valuable and unique resource.

Applied Algorithms Prosenjit Gupta 2014-01-08 This book constitutes the refereed proceedings of the First International Conference on Applied Algorithms, ICAA 2014, held in Kolkata, India, in January 2014. ICAA is a

new conference series with a mission to provide a quality forum for researchers working in applied algorithms. Papers presenting original contributions related to the design, analysis, implementation and experimental evaluation of efficient algorithms and data structures for problems with relevant real-world applications were sought, ideally bridging the gap between academia and industry. The 21 revised full papers presented together with 7 short papers were carefully reviewed and selected from 122 submissions.

High Resolution Imaging in Microscopy and Ophthalmology Josef F. Bille 2019-08-13 This open access book provides a comprehensive overview of the application of the newest laser and microscope/ophthalmoscope technology in the field of high resolution imaging in microscopy and ophthalmology. Starting by describing High-Resolution 3D Light Microscopy with STED and RESOLFT, the book goes on to cover retinal and anterior segment imaging and image-guided treatment and also discusses the development of adaptive optics in vision science and ophthalmology. Using an interdisciplinary approach, the reader will learn about the latest developments and most up to date technology in the field and how these translate to a medical setting. *High Resolution Imaging in Microscopy and Ophthalmology - New Frontiers in Biomedical Optics* has been written by leading experts in the field and offers insights on engineering, biology, and medicine, thus being a valuable addition for scientists, engineers, and clinicians with technical and medical interest who would like to understand the equipment, the applications and the medical/biological background. Lastly, this book is dedicated to the memory of Dr. Gerhard Zinser, co-founder of Heidelberg Engineering GmbH, a scientist, a husband, a brother, a colleague, and a friend.

Concise Computer Vision Reinhard Klette 2014-01-04 This textbook provides an accessible general introduction to the essential topics in computer vision. Classroom-tested programming exercises and review questions are also supplied at the end of each chapter. Features:

provides an introduction to the basic notation and mathematical concepts for describing an image and the key concepts for mapping an image into an image; explains the topologic and geometric basics for analysing image regions and distributions of image values and discusses identifying patterns in an image; introduces optic flow for representing dense motion and various topics in sparse motion analysis; describes special approaches for image binarization and segmentation of still images or video frames; examines the basic components of a computer vision system; reviews different techniques for vision-based 3D shape reconstruction; includes a discussion of stereo matchers and the phase-congruency model for image features; presents an introduction into classification and learning.

Sustainable Urban Logistics: Concepts, Methods and Information Systems Jesus Gonzalez-Feliu 2013-09-07

Since the 1990's, researchers, practitioners and public administrations have given more thought to urban logistics. However, their interests and goals are not the same, and several approaches do not produce efficient logistics systems as a result. This book aims to provide both a conceptual framework for urban logistics planning and management and to create a basis for deploying solutions that aim to reduce the main nuisances related to urban goods. The proposed book is divided in two parts. The first proposes a set of methodological chapters, written by key authors, which aim to support decision makers in their current choices related to urban logistics. In addition to public authorities' aims and goals, the book highlights the importance of private actors, and shows how supply chain management can deal with the problems of the last urban mile and its integration in global logistics chains. The second presents several applied research works that deal with current planning and practice issues in urban logistics, such as the role of city planning, the place of night deliveries in carrier organization, the limits of logistics pooling, and the real estate market, among

others. The book was written by key authors, all having considerable research experience and recognised as experts in their respective fields. Each chapter presents methods and results of research works, written for a broad audience, and more precisely directed to both academics and practitioners.

The R Book Michael J. Crawley 2007-06-13 The high-level language of R is recognized as one of the most powerful and flexible statistical software environments, and is rapidly becoming the standard setting for quantitative analysis, statistics and graphics. R provides free access to unrivalled coverage and cutting-edge applications, enabling the user to apply numerous statistical methods ranging from simple regression to time series or multivariate analysis. Building on the success of the author's bestselling *Statistics: An Introduction using R*, *The R Book* is packed with worked examples, providing an all inclusive guide to R, ideal for novice and more accomplished users alike. The book assumes no background in statistics or computing and introduces the advantages of the R environment, detailing its applications in a wide range of disciplines. Provides the first comprehensive reference manual for the R language, including practical guidance and full coverage of the graphics facilities. Introduces all the statistical models covered by R, beginning with simple classical tests such as chi-square and t-test. Proceeds to examine more advanced methods, from regression and analysis of variance, through to generalized linear models, generalized mixed models, time series, spatial statistics, multivariate statistics and much more. The R Book is aimed at undergraduates, postgraduates and professionals in science, engineering and medicine. It is also ideal for students and professionals in statistics, economics, geography and the social sciences.

Putting the "Why" Back into Bone "Architecture" Phil Salmon 2017-07-27 A large literature exists on trabecular and cortical bone morphology. The engineering performance of bone, implied from its 3d architecture, is often the endpoint of bone biology experiments, being

clinically relevant to bone fracture. How and why does bone travel along its complex spatio-temporal trajectory to acquire its architecture? The question "why" can have two meanings. The first, "teleological - why is an architecture advantageous?" - is the domain of substantial biomechanical research to date. The second, "etiologically - how did an architecture come about?" - has received far less attention. This Frontiers Bone Research Topic invited contributions addressing this "etiologically why" - what mechanisms can coordinate the activity of bone forming and resorbing cells to produce the observed complex and efficient bone architectures? One mechanism is proposed - chaotic nonlinear pattern formation (NPF) which underlies - in a unifying way - natural structures as disparate as trabecular bone, swarms of birds flying or shoaling fish, island formation, fluid turbulence and others. At the heart of NPF is the fact that simple rules operating between interacting elements multiplied and repeated many times, lead to complex and structured patterns. This paradigm of growth and form leads to a profound link between bone regulation and its architecture: in bone "the architecture is the regulation". The former is the emergent consequence of the latter. Whatever mechanism does determine bone's developing architecture has to operate at the level of individual sites of formation and resorption and coupling between the two. This has implications as to how we understand the effect on bone of agents such as gene products or drugs. It may be for instance that the "tuning" of coupling between formation and resorption might be as important as the achievement of enhanced bone volume. The ten articles that were contributed to this Topic were just what we hoped for - a snapshot of leading edge bone biology research which addresses the question of how bone gets its shape. We hope that you find these papers thought-provoking, and that they might stimulate new ideas in the research into bone architecture, growth and adaptation, and how to preserve healthy bone from gestation and childhood until old age.

1001 Math Problems LearningExpress LLC 2013 1001 math problems will teach you how to: master core concepts to prepare for important exams, learn math rules and how to apply them to problems, learn math skills you can apply when solving problems at all levels, and overcome math anxiety through skills reinforcement and focused practice.

MultiMedia Modeling Cathal Gurrin 2014-01-02 The two-volume set LNCS 8325 and 8326 constitutes the thoroughly refereed proceedings of the 20th Anniversary International Conference on Multimedia Modeling, MMM 2014, held in Dublin, Ireland, in January 2014. The 46 revised regular papers, 11 short papers, and 9 demonstration papers were carefully reviewed and selected from 176 submissions. 28 special session papers and 6 papers from Video Browser Showdown workshop are also included in the proceedings. The papers included in these two volumes cover a diverse range of topics including: applications of multimedia modelling, interactive retrieval, image and video collections, 3D and augmented reality, temporal analysis of multimedia content, compression and streaming. Special session papers cover the following topics: Mediadrom: artful post-TV scenarios, MM analysis for surveillance video and security applications, 3D multimedia computing and modeling, social geo-media analytics and retrieval, multimedia hyperlinking and retrieval.

Biomedical Engineering and Environmental Engineering David Chan 2015-05-06 This conference series is a forum for enhancing mutual understanding between Biomedical Engineering and Environmental Engineering field. This proceeding provides contributions from many experts representing industry and academic establishments worldwide. The researchers are from different countries and professional. The conference brought

Computational Intelligence in Communications and Business Analytics Somnath Mukhopadhyay 2022-07-21 This book constitutes the refereed proceedings of the 4th International Conference on Computational Intelligence, Communications, and Business Analytics, CICBA 2022, held

in Silchar, India, in January 2022. The 21 full papers and 13 short papers presented in this volume were carefully reviewed and selected from 107 submissions. The papers are organized in topical sections on computational intelligence; computational intelligence in communication; and computational intelligence in analytics.

Reasoning in Measurement Nicola Mößner 2017-03-16 This collection offers a new understanding of the epistemology of measurement. The interdisciplinary volume explores how measurements are produced, for example, in astronomy and seismology, in studies of human sexuality and ecology, in brain imaging and intelligence testing. It considers photography as a measurement technology and Henry David Thoreau's poetic measures as closing the gap between mind and world. By focusing on measurements as the hard-won results of conceptual as well as technical operations, the authors of the book no longer presuppose that measurement is always and exclusively a means of representing some feature of a target object or entity. Measurement also provides knowledge about the degree to which things have been standardized or harmonized - it is an indicator of how closely human practices are attuned to each other and the world.

A Primer on Scientific Programming with Python Hans Petter Langtangen 2016-07-28 The book serves as a first introduction to computer programming of scientific applications, using the high-level Python language. The exposition is example and problem-oriented, where the applications are taken from mathematics, numerical calculus, statistics, physics, biology and finance. The book teaches "Matlab-style" and procedural programming as well as object-oriented programming. High school mathematics is a required background and it is advantageous to study classical and numerical one-variable calculus in parallel with reading this book. Besides learning how to program computers, the reader will also learn how to solve mathematical problems, arising in various branches of science and engineering,

with the aid of numerical methods and programming. By blending programming, mathematics and scientific applications, the book lays a solid foundation for practicing computational science. From the reviews: Langtangen ... does an excellent job of introducing programming as a set of skills in problem solving. He guides the reader into thinking properly about producing program logic and data structures for modeling real-world problems using objects and functions and embracing the object-oriented paradigm. ... Summing Up: Highly recommended. F. H. Wild III, Choice, Vol. 47 (8), April 2010 Those of us who have learned scientific programming in Python 'on the streets' could be a little jealous of students who have the opportunity to take a course out of Langtangen's Primer." John D. Cook, The Mathematical Association of America, September 2011 This book goes through Python in particular, and programming in general, via tasks that scientists will likely perform. It contains valuable information for students new to scientific computing and would be the perfect bridge between an introduction to programming and an advanced course on numerical methods or computational science. Alex Small, IEEE, CiSE Vol. 14 (2), March /April 2012 "This fourth edition is a wonderful, inclusive textbook that covers pretty much everything one needs to know to go from zero to fairly sophisticated scientific programming in Python..." Joan Horvath, Computing Reviews, March 2015

A Biography of the Pixel Alvy Ray Smith 2021-08-03 The pixel as the organizing principle of all pictures, from cave paintings to Toy Story. The Great Digital Convergence of all media types into one universal digital medium occurred, with little fanfare, at the recent turn of the millennium. The bit became the universal medium, and the pixel--a particular packaging of bits--conquered the world. Henceforward, nearly every picture in the world would be composed of pixels--cell phone pictures, app interfaces, Mars Rover transmissions, book illustrations, videogames. In A Biography of the Pixel, Pixar cofounder Alvy Ray Smith

argues that the pixel is the organizing principle of most modern media, and he presents a few simple but profound ideas that unify the dazzling varieties of digital image making. Smith's story of the pixel's development begins with Fourier waves, proceeds through Turing machines, and ends with the first digital movies from Pixar, DreamWorks, and Blue Sky. Today, almost all the pictures we encounter are digital--mediated by the pixel and irretrievably separated from their media; museums and kindergartens are two of the last outposts of the analog. Smith explains, engagingly and accessibly, how pictures composed of invisible stuff become visible--that is, how digital pixels convert to analog display elements. Taking the special case of digital movies to represent all of Digital Light (his term for pictures constructed of pixels), and drawing on his decades of work in the field, Smith approaches his subject from multiple angles--art, technology, entertainment, business, and history. A Biography of the Pixel is essential reading for anyone who has watched a video on a cell phone, played a videogame, or seen a movie.

Teaching English to Young Learners Janice Bland 2015-09-24 Aimed at student teachers, educators and practitioners, Teaching English Language to Young Learners outlines and explains the crucial issues, themes and scenarios relating to this area of teaching. Each chapter by a leading international scholar offers a thorough introduction to a central theme of English as a foreign language (EFL) with preteens, with clear presentation of the theoretical background and detailed references for further reading, providing access to the most recent scholarship. Exploring the essential issues critically and in-depth, including the disadvantages as well as advantages of Teaching English as a Foreign Language (TEFL) with young learners, topics include: - task-based learning in the primary school; - storytelling; - drama; - technology; - vocabulary development; - intercultural understanding; - Content and Language Integrated Learning (CLIL) scenarios; -

assessment. Innovative and rapidly emerging topics are covered, such as immersion teaching, picturebooks in the EFL classroom and English with pre-primary children.

Computational Intelligence in Communications and Business Analytics Paramartha Dutta 2021-05-25 This book constitutes the refereed proceedings of the Third International Conference on Computational Intelligence, Communications, and Business Analytics, CICBA 2021, held in Santiniketan, India, in January 2021. The 12 full papers and 8 short papers presented in this volume were carefully reviewed and selected from 84 submissions. The papers are organized in topical sections on computational forensic (privacy and security); computational intelligence; data science and advanced data analytics; and intelligent data mining and data warehousing.

Computer Vision - ACCV 2018 Workshops Gustavo Carneiro 2019-06-18 This LNCS workshop proceedings, ACCV 2018, contains carefully reviewed and selected papers from 11 workshops, each having different types or programs: Scene Understanding and Modelling (SUMO) Challenge, Learning and Inference Methods for High Performance Imaging (LIMHPI), Attention/Intention Understanding (AIU), Museum Exhibit Identification Challenge (Open MIC) for Domain Adaptation and Few-Shot Learning, RGB-D - Sensing and Understanding via Combined Colour and Depth, Dense 3D Reconstruction for Dynamic Scenes, AI Aesthetics in Art and Media (AIAM), Robust Reading (IWRR), Artificial Intelligence for Retinal Image Analysis (AIRIA), Combining Vision and Language, Advanced Machine Vision for Real-life and Industrially Relevant Applications (AMV).

Modern Approaches in Machine Learning and Cognitive Science: A Walkthrough Vinit Kumar Gunjan 2021-04-26 This book provides a systematic and comprehensive overview of machine learning with cognitive science methods and technologies which have played an important role at the core of practical solutions for a wide scope of tasks between handheld apps, industrial process control, autonomous vehicles, environmental policies,

life sciences, playing computer games, computational theory, and engineering development. The chapters in this book focus on readers interested in machine learning, cognitive and neuro-inspired computational systems - theories, mechanisms, and architecture, which underline human and animal behaviour, and their application to conscious and intelligent systems. In the current version, it focuses on the successful implementation and step-by-step explanation of practical applications of the domain. It also offers a wide range of inspiring and interesting cutting-edge contributions to applications of machine learning and cognitive science such as healthcare products, medical electronics, and gaming. Overall, this book provides valuable information on effective, cutting-edge techniques and approaches for students, researchers, practitioners, and academicians working in the field of AI, neural network, machine learning, and cognitive science. Furthermore, the purpose of this book is to address the interests of a broad spectrum of practitioners, students, and researchers, who are interested in applying machine learning and cognitive science methods in their respective domains.

Introduction to Programming Using Java David Eck 2009-09 This is a free, on-line textbook on introductory programming using Java. This book is directed mainly towards beginning programmers, although it might also be useful for experienced programmers who want to learn more about Java. It is an introductory text and does not provide complete coverage of the Java language. The text is a PDF and is suitable for printing or on-screen reading. It contains internal links for navigation and external links to source code files, exercise solutions, and other resources. Contents: 1) Overview: The Mental Landscape. 2) Programming in the Small I: Names and Things. 3) Programming in the Small II: Control. 4) Programming in the Large I: Subroutines. 5) Programming in the Large II: Objects and Classes. 6) Introduction to GUI Programming. 7) Arrays. 8) Correctness and Robustness. 9) Linked Data Structures and Recursion. 10)

Generic Programming and Collection Classes. 11) Files and Networking. 12) Advanced GUI Programming. Appendices: Source Code for All Examples in this Book, and News and Errata.

About Face Alan Cooper 2014-09-02 The essential interaction design guide, fully revised and updated for the mobile age About Face: The Essentials of Interaction Design, Fourth Edition is the latest update to the book that shaped and evolved the landscape of interaction design. This comprehensive guide takes the worldwide shift to smartphones and tablets into account. New information includes discussions on mobile apps, touch interfaces, screen size considerations, and more. The new full-color interior and unique layout better illustrate modern design concepts. The interaction design profession is blooming with the success of design-intensive companies, priming customers to expect "design" as a critical ingredient of marketplace success. Consumers have little tolerance for websites, apps, and devices that don't live up to their expectations, and the responding shift in business philosophy has become widespread. About Face is the book that brought interaction design out of the research labs and into the everyday lexicon, and the updated Fourth Edition continues to lead the way with ideas and methods relevant to today's design practitioners and developers. Updated information includes: Contemporary interface, interaction, and product design methods Design for mobile platforms and consumer electronics State-of-the-art interface recommendations and up-to-date examples Updated Goal-Directed Design methodology Designers and developers looking to remain relevant through the current shift in consumer technology habits will find About Face to be a comprehensive, essential resource. *Graphics Interface 2014* Paul G. Kry 2020-11-26 This book is the proceedings of the 40th annual Graphics Interface conference—the oldest continuously scheduled conference in the field. The book includes high-quality papers on recent advances in interactive systems, human computer interaction, and graphics from around the world. It

covers the following topics: shading and rendering, geometric modeling and meshing, image-based rendering, image synthesis and realism, computer animation, real-time rendering, non-photorealistic rendering, interaction techniques, human interface devices, augmented reality, data and information visualization, mobile computing, haptic and tangible interfaces, and perception.

Creativity, Inc. Ed Catmull 2014-04-08 From a co-founder of Pixar Animation Studios—the Academy Award-winning studio behind *Coco*, *Inside Out*, and *Toy Story*—comes an incisive book about creativity in business and leadership for readers of Daniel Pink, Tom Peters, and Chip and Dan Heath. NEW YORK TIMES BESTSELLER | NAMED ONE OF THE BEST BOOKS OF THE YEAR BY The Huffington Post • Financial Times • Success • Inc. • Library Journal *Creativity, Inc.* is a manual for anyone who strives for originality and the first-ever, all-access trip into the nerve center of Pixar Animation—into the meetings, postmortems, and “Braintrust” sessions where some of the most successful films in history are made. It is, at heart, a book about creativity—but it is also, as Pixar co-founder and president Ed Catmull writes, “an expression of the ideas that I believe make the best in us possible.” For nearly twenty years, Pixar has dominated the world of animation, producing such beloved films as the *Toy Story* trilogy, *Monsters, Inc.*, *Finding Nemo*, *The Incredibles*, *Up*, *WALL-E*, and *Inside Out*, which have gone on to set box-office records and garner thirty Academy Awards. The joyousness of the storytelling, the inventive plots, the emotional authenticity: In some ways, Pixar movies are an object lesson in what creativity really is. Here, in this book, Catmull reveals the ideals and techniques that have made Pixar so widely admired—and so profitable. As a young man, Ed Catmull had a dream: to make the first computer-animated movie. He nurtured that dream as a Ph.D. student at the University of Utah, where many computer science pioneers got their start, and then forged a partnership with George Lucas that led, indirectly, to his co-founding

Pixar in 1986. Nine years later, Toy Story was released, changing animation forever. The essential ingredient in that movie's success—and in the thirteen movies that followed—was the unique environment that Catmull and his colleagues built at Pixar, based on leadership and management philosophies that protect the creative process and defy convention, such as:

- Give a good idea to a mediocre team, and they will screw it up. But give a mediocre idea to a great team, and they will either fix it or come up with something better.
- If you don't strive to uncover what is unseen and understand its nature, you will be ill prepared to lead.
- It's not the manager's job to prevent risks. It's the manager's job to make it safe for others to take them.
- The cost of preventing errors is often far greater than the cost of fixing them.
- A company's communication structure should not mirror its organizational structure.

Everybody should be able to talk to anybody.

Compressed Sensing and its Applications Holger Boche
2015-07-04 Since publication of the initial papers in 2006, compressed sensing has captured the imagination of the international signal processing community, and the mathematical foundations are nowadays quite well understood. Parallel to the progress in mathematics, the potential applications of compressed sensing have been explored by many international groups of, in particular, engineers and applied mathematicians, achieving very promising advances in various areas such as communication theory, imaging sciences, optics, radar technology, sensor networks, or tomography. Since many applications have reached a mature state, the research center MATHEON in Berlin focusing on "Mathematics for Key Technologies", invited leading researchers on applications of compressed sensing from mathematics, computer science, and engineering to the "MATHEON Workshop 2013: Compressed Sensing and its Applications" in December 2013. It was the first workshop specifically focusing on the applications of compressed sensing. This book features contributions by the plenary and invited speakers of this workshop. To make this book accessible

for those unfamiliar with compressed sensing, the book will not only contain chapters on various applications of compressed sensing written by plenary and invited speakers, but will also provide a general introduction into compressed sensing. The book is aimed at both graduate students and researchers in the areas of applied mathematics, computer science, and engineering as well as other applied scientists interested in the potential and applications of the novel methodology of compressed sensing. For those readers who are not already familiar with compressed sensing, an introduction to the basics of this theory will be included.

Digital Forensics and Watermarking Christian Kraetzer
2017-08-09 This book constitutes the refereed proceedings of the 16th International Workshop on Digital Forensics and Watermarking, IWDW 2017, held in Magdeburg, Germany, in August 2017. The 30 papers presented in this volume were carefully reviewed and selected from 48 submissions. The contributions are covering the state-of-the-art theoretical and practical developments in the fields of digital watermarking, steganography and steganalysis, forensics and anti-forensics, visual cryptography, and other multimedia-related security issues. Also included are the papers on two special sessions on biometric image tampering detection and on emerging threats of criminal use of information hiding : usage scenarios and detection approaches.

Real-Time Rendering Tomas Akenine-Möller 2019-01-18
Thoroughly revised, this third edition focuses on modern techniques used to generate synthetic three-dimensional images in a fraction of a second. With the advent of programmable shaders, a wide variety of new algorithms have arisen and evolved over the past few years. This edition discusses current, practical rendering methods used in games and other applications. It also presents a solid theoretical framework and relevant mathematics for the field of interactive computer graphics, all in an approachable style. The authors have made the figures

used in the book available for download for fair use.:Download Figures. Reviews Rendering has been a required reference for professional graphics practitioners for nearly a decade. This latest edition is as relevant as ever, covering topics from essential mathematical foundations to advanced techniques used by today's cutting edge games. -- Gabe Newell, President, Valve, May 2008 Rendering ... has been completely revised and revamped for its updated third edition, which focuses on modern techniques used to generate three-dimensional images in a fraction of the time old processes took. From practical rendering for games to math and details for better interactive applications, it's not to be missed. -- The Bookwatch, November 2008 You'll get brilliantly lucid explanations of concepts like vertex morphing and variance shadow mapping—as well as a new respect for the incredible craftsmanship that goes into today's PC games. -- Logan Decker, PC Gamer Magazine , February 2009

Ashfall Legacy Pittacus Lore 2021-08-17 Pittacus Lore finished telling the story of the Lorien Nine in the New York Times bestselling *I Am Number Four* and *Lorien Legacies Reborn* series. Now he's back to recount an all-new adventure rooted in the real mysteries surrounding Roswell, New Mexico, that will enthrall fans of Brandon Sanderson, Jay Kristoff, and Amie Kaufman. We have waited generations for you... Syd Chambers knows that there's life on other planets because he's descended from it. His father was from a distant world called Denza and has been missing—presumed dead—for years. When Syd discovers a device his father left behind which shows not only that he's alive, but where he is, Syd must set out on a mission of his own. But along the way, he discovers a deadly, unbearable secret that could destroy Denza, Earth, and the universe.

Hesitant Fuzzy Sets Theory Zeshui Xu 2014-01-30 This book provides the readers with a thorough and systematic introduction to hesitant fuzzy theory. It presents the

most recent research results and advanced methods in the field. These includes: hesitant fuzzy aggregation techniques, hesitant fuzzy preference relations, hesitant fuzzy measures, hesitant fuzzy clustering algorithms and hesitant fuzzy multi-attribute decision making methods. Since its introduction by Torra and Narukawa in 2009, hesitant fuzzy sets have become more and more popular and have been used for a wide range of applications, from decision-making problems to cluster analysis, from medical diagnosis to personnel appraisal and information retrieval. This book offers a comprehensive report on the state-of-the-art in hesitant fuzzy sets theory and applications, aiming at becoming a reference guide for both researchers and practitioners in the area of fuzzy mathematics and other applied research fields (e.g. operations research, information science, management science and engineering) characterized by uncertain ("hesitant") information. Because of its clarity and self contained explanations, the book can also be adopted as a textbook from graduate and advanced undergraduate students.

Visualization in the Age of Computerization Annamaria Carusi 2014-08-21 Digitalization and computerization are now pervasive in science. This has deep consequences for our understanding of scientific knowledge and of the scientific process, and challenges longstanding assumptions and traditional frameworks of thinking of scientific knowledge. Digital media and computational processes challenge our conception of the way in which perception and cognition work in science, of the objectivity of science, and the nature of scientific objects. They bring about new relationships between science, art and other visual media, and new ways of practicing science and organizing scientific work, especially as new visual media are being adopted by science studies scholars in their own practice. This volume reflects on how scientists use images in the computerization age, and how digital technologies are affecting the study of science.