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Safe Management of Wastes from Health-care Activities A. Prüss 1999
Compressed Video Over Networks Ming-Ting Sun 2000-09-22 This volume details the essential elements for designing optimal end-to-end systems. It progresses from the fundamentals of both video compression and networking

technologies to an extensive summary of the constant and continuous interaction between the fields. The work seeks to respond to the proliferation of networked digital video applications in daily life with in-depth analyses of technical problems and solutions.

Electroluminescent Displays Yoshimasa A. Ono 1995 This book discusses recent developments in electroluminescent (EL) displays, in particular thin-film EL displays, which are all-solid emissive displays with fast response, wide viewing angle, high resolution, wide operating temperature ranges and good display qualities. First, the characteristics of four types of EL devices are presented, and the physics of ac thin-film EL devices are detailed, including ideal models, measuring and evaluation methods, high-field electronic transport and properties of phosphor materials. The book emphasizes recent developments in phosphor materials for color thin-film EL devices based on ZnS, SrS, CaS and CaGa2S4, and multicolor thin-film EL panels in four-panel structures. Other important features discussed are drive methods and reliability issues.

Magnetic Resonance Imaging Robert W. Brown 2014-06-23 New edition explores contemporary MRI principles and practices Thoroughly revised, updated and expanded, the second edition of Magnetic Resonance Imaging: Physical Principles and Sequence Design remains the preeminent text in its field. Using consistent nomenclature and mathematical notations throughout all the chapters, this new edition carefully explains the physical principles of magnetic resonance imaging design and implementation. In addition, detailed figures and MR images enable readers to better grasp core concepts, methods, and applications. Magnetic Resonance Imaging, Second Edition begins with an introduction to fundamental principles, with coverage of magnetization, relaxation, quantum mechanics, signal detection and acquisition, Fourier imaging, image reconstruction, contrast,

signal, and noise. The second part of the text explores MRI methods and applications, including fast imaging, water-fat separation, steady state gradient echo imaging, echo planar imaging, diffusion-weighted imaging, and induced magnetism. Lastly, the text discusses important hardware issues and parallel imaging. Readers familiar with the first edition will find much new material, including: New chapter dedicated to parallel imaging New sections examining off-resonance excitation principles, contrast optimization in fast steady-state incoherent imaging, and efficient lower-dimension analogues for discrete Fourier transforms in echo planar imaging applications Enhanced sections pertaining to Fourier transforms, filter effects on image resolution, and Bloch equation solutions when both rf pulse and slice select gradient fields are present Valuable improvements throughout with respect to equations, formulas, and text New and updated problems to test further the readers' grasp of core concepts Three appendices at the end of the text offer review material for basic electromagnetism and statistics as well as a list of acquisition parameters for the images in the book. Acclaimed by both students and instructors, the second edition of Magnetic Resonance Imaging offers the most comprehensive and approachable introduction to the physics and the applications of magnetic resonance imaging.

Handbook of Flexible and Stretchable Electronics Muhammad M. Hussain 2019-11-11 Flexibility and stretchability of electronics are crucial for next generation electronic devices that involve skin contact sensing and therapeutic actuation. This handbook provides a complete entrée to the field, from solid-state physics to materials chemistry, processing, devices, performance, and reliability testing, and integrated systems development. This work shows how microelectronics, signal processing, and wireless communications in the same

circuitry are impacting electronics, healthcare, and energy applications. Key Features: • Covers the fundamentals to device applications, including solid-state and mechanics, chemistry, materials science, characterization techniques, and fabrication; • Offers a comprehensive base of knowledge for moving forward in this field, from foundational research to technology development; • Focuses on processing, characterization, and circuits and systems integration for device applications; • Addresses the basic physical properties and mechanics, as well as the nuts and bolts of reliability and performance analysis; • Discusses various technology applications, from printed electronics to logic and memory devices, sensors, actuators, displays, and energy storage and harvesting. This handbook will serve as the one-stop knowledge base for readership who are interested in flexible and stretchable electronics.

Allogeneic Stem Cell Transplantation Hillard M. Lazarus 2010-03-02 Since the original publication of Allogeneic Stem Cell Transplantation: Clinical Research and Practice, Allogeneic hematopoietic stem cell transplantation (HSC) has undergone several fast-paced changes. In this second edition, the editors have focused on topics relevant to evolving knowledge in the field in order to better guide clinicians in decision-making and management of their patients, as well as help lead laboratory investigators in new directions emanating from clinical observations. Some of the most respected clinicians and scientists in this discipline have responded to the recent advances in the field by providing state-of-the-art discussions addressing these topics in the second edition. The text covers the scope of human genomic variation, the methods of HLA typing and interpretation of high-resolution HLA results. Comprehensive and up-to-date, Allogeneic Stem Cell Transplantation: Clinical Research and Practice, Second Edition offers concise advice on today's best clinical practice

and will be of significant benefit to all clinicians and researchers in allogeneic HSC transplantation.

The Fingerprint U. S. Department Justice 2014-08-02 The idea of The Fingerprint Sourcebook originated during a meeting in April 2002. Individuals representing the fingerprint, academic, and scientific communities met in Chicago, Illinois, for a day and a half to discuss the state of fingerprint identification with a view toward the challenges raised by Daubert issues. The meeting was a joint project between the International Association for Identification (IAI) and West Virginia University (WVU). One recommendation that came out of that meeting was a suggestion to create a sourcebook for friction ridge examiners, that is, a single source of researched information regarding the subject. This sourcebook would provide educational, training, and research information for the international scientific community.

Video Microscopy Shinya Inoue 1986-05 Ever since television became practical in the early 1950s, closed-circuit television (CCTV) in conjunction with the light microscope has provided large screen display, raised image contrast, and made the images formed by ultraviolet and infrared rays visible. With the introduction of large-scale integrated circuits in the last decade, TV equipment has improved by leaps and bounds, as has its application in microscopy. With modem CCTV, sometimes with the help of digital computers, we can distill the image from a scene that appears to be nothing but noise; capture fluorescence too dim to be seen; visualize structures far below the limit of resolution; crispen images hidden in fog; measure, count, and sort objects; and record in time-lapsed and high-speed sequences through the light microscope without great difficulty. In fact, video is becoming indispensable for harnessing the fullest capacity of the light microscope, a capacity that itself is much greater than could have been envisioned just a

few years ago. The time seemed ripe then to review the basics of video, and of microscopy, and to examine how the two could best be combined to accomplish these tasks. The Marine Biological Laboratory short courses on Analytical and Quantitative Light Microscopy in Biology, Medicine, and the Materials Sciences, and the many inquiries I received on video microscopy, supported such an effort, and Kirk Jensen of Plenum Press persuaded me of its worth.

Applications of Intelligent Optimization in Biology and Medicine Aboul-Ella Hassanien 2015-07-18 This volume provides updated, in-depth material on the application of intelligent optimization in biology and medicine. The aim of the book is to present solutions to the challenges and problems facing biology and medicine applications. This Volume comprises of 13 chapters, including an overview chapter, providing an up-to-date and state-of-the research on the application of intelligent optimization for bioinformatics applications, DNA based Steganography, a modified Particle Swarm Optimization Algorithm for Solving Capacitated Maximal Covering Location Problem in Healthcare Systems, Optimization Methods for Medical Image Super Resolution Reconstruction and breast cancer classification. Moreover, some chapters that describe several bio-inspired approaches in MEDLINE Text Mining, DNA-Binding Proteins and Classes, Optimized Tumor Breast Cancer Classification using Combining Random Subspace and Static Classifiers Selection Paradigms, and Dental Image Registration. The book will be a useful compendium for a broad range of readers—from students of undergraduate to postgraduate levels and also for researchers, professionals, etc.—who wish to enrich their knowledge on Intelligent Optimization in Biology and Medicine and applications with one single book.

Science and Applications of Coastal Remote Sensing Kevin Ross Turpie 2021-06-01 IN MEMORIAL: This Research Topic is dedicated to

our co-editor Dr. Tiffany Moisan, a well-regarded ocean color remote sensing scientist, who unexpectedly passed away during its preparation. Dr. Moisan was a dear friend, and upbeat and enthusiastic colleague and a scientist committed to the use of remote sensing to improve our understanding of marine microbiology and phytoplankton ecology. She was a strong supporter of the development of remote sensing capabilities and applications for coastal and inland waters, and we know that she would have wanted this Research Topic to provide her colleagues an opportunity to share and promote their work in this area. A voice in our community is now quiet. Let the chorus of our shared song continue with her memory. Dr. Tiffany Moisan is survived by her loving family, including her husband, Dr. John Moisan and her two daughters.

Science Comics: Polar Bears Jason Viola 2018-12-31 Do you have what it takes to live in one of the harshest places in the world? What if you had just a couple years to gain the knowledge you'll need to survive on your own? Join two curious polar bear cubs as they play, hunt, and navigate life in the Arctic. With each season, they learn polar bear biology and behavior, as well as strategies and skills that will help them thrive in a landscape that is rapidly changing beyond their control. Living with super insulated bodies in a world that's melting? For polar bears, keeping cool is the name of the game! Get ready to explore the depths of the ocean, the farthest reaches of space, and everything in between! These gorgeously illustrated graphic novels offer wildly entertaining views of their subjects. Whether you're a fourth grader doing a natural science unit at school or a thirty-year-old with a secret passion for airplanes, Science Comics is for you!

Membrane Protein Crystallization 2009-05-29 This volume of Current Topics in Membranes focuses on Membrane Protein Crystallization, beginning with a review of past

successes and general trends, then further discussing challenges of mebranes protein crystallization, cell free production of membrane proteins and novel lipids for membrane protein crystallization. This publication also includes tools to enchance membrane protein crystallization, technique advancements, and crystallization strategies used for photosystem I and its complexes, establishing Membrane Protein Crystallization as a needed, practical reference for researchers.

Archaeology, Anthropology, and Interstellar Communication National Aeronautics Administration 2014-09-06 Addressing a field that has been dominated by astronomers, physicists, engineers, and computer scientists, the contributors to this collection raise questions that may have been overlooked by physical scientists about the ease of establishing meaningful communication with an extraterrestrial intelligence. These scholars are grappling with some of the enormous challenges that will face humanity if an information-rich signal emanating from another world is detected. By drawing on issues at the core of contemporary archaeology and anthropology, we can be much better prepared for contact with an extraterrestrial civilization, should that day ever come.

The impact of disasters and crises on agriculture and food security: 2021 Food and Agriculture Organization of the United Nations 2021-03-17 On top of a decade of exacerbated disaster loss, exceptional global heat, retreating ice and rising sea levels, humanity and our food security face a range of new and unprecedented hazards, such as megafires, extreme weather events, desert locust swarms of magnitudes previously unseen, and the COVID-19 pandemic. Agriculture underpins the livelihoods of over 2.5 billion people – most of them in low-income developing countries – and remains a key driver of development. At no other point in history has agriculture been faced with such an array of

familiar and unfamiliar risks, interacting in a hyperconnected world and a precipitously changing landscape. And agriculture continues to absorb a disproportionate share of the damage and loss wrought by disasters. Their growing frequency and intensity, along with the systemic nature of risk, are upending people's lives, devastating livelihoods, and jeopardizing our entire food system. This report makes a powerful case for investing in resilience and disaster risk reduction – especially data gathering and analysis for evidence informed action – to ensure agriculture's crucial role in achieving the future we want.

Autonomous Horizons Greg Zacharias 2019-04-05 Dr. Greg Zacharias, former Chief Scientist of the United States Air Force (2015-18), explores next steps in autonomous systems (AS) development, fielding, and training. Rapid advances in AS development and artificial intelligence (AI) research will change how we think about machines, whether they are individual vehicle platforms or networked enterprises. The payoff will be considerable, affording the US military significant protection for aviators, greater effectiveness in employment, and unlimited opportunities for novel and disruptive concepts of operations. Autonomous Horizons: The Way Forward identifies issues and makes recommendations for the Air Force to take full advantage of this transformational technology.

Genomic Signal Processing Ilya Shmulevich 2014-09-08 Genomic signal processing (GSP) can be defined as the analysis, processing, and use of genomic signals to gain biological knowledge, and the translation of that knowledge into systems-based applications that can be used to diagnose and treat genetic diseases. Situated at the crossroads of engineering, biology, mathematics, statistics, and computer science, GSP requires the development of both nonlinear dynamical models that adequately represent genomic regulation,

and diagnostic and therapeutic tools based on these models. This book facilitates these developments by providing rigorous mathematical definitions and propositions for the main elements of GSP and by paying attention to the validity of models relative to the data. Ilya Shmulevich and Edward Dougherty cover real-world situations and explain their mathematical modeling in relation to systems biology and systems medicine. Genomic Signal Processing makes a major contribution to computational biology, systems biology, and translational genomics by providing a self-contained explanation of the fundamental mathematical issues facing researchers in four areas: classification, clustering, network modeling, and network intervention.

Advanced Programmer's Guide to the EGA/VGA George Sutty 1988 Provides detailed explanation of techniques for drawing text, downloading custom fonts, drawing algorithms for lines, arcs, and ellipses, and sprite animation

TOVPIX D. M. O'Brien 1985

Neural Network Design Martin T. Hagan 2003

X3D Don Brutzman 2010-07-19 In the early days of the Web a need was recognized for a language to display 3D objects through a browser. An HTML-like language, VRML, was proposed in 1994 and became the standard for describing interactive 3D objects and worlds on the Web. 3D Web courses were started, several best-selling books were published, and VRML continues to be used today. However VRML, because it was based on HTML, is a stodgy language that is not easy to incorporate with other applications and has been difficult to add features to. Meanwhile, applications for interactive 3D graphics have been exploding in areas such as medicine, science, industry, and entertainment. There is a strong need for a set of modern Web-based technologies, applied within a standard extensible framework, to enable a new generation of modeling & simulation applications to emerge, develop, and

interoperate. X3D is the next generation open standard for 3D on the web. It is the result of several years of development by the Web 3D Consortium's X3D Task Group. Instead of a large monolithic specification (like VRML), which requires full adoption for compliance, X3D is a component-based architecture that can support applications ranging from a simple non-interactive animation to the latest streaming or rendering applications. X3D replaces VRML, but also provides compatibility with existing VRML content and browsers. Don Brutzman organized the first symposium on VRML and is playing a similar role with X3D; he is a founding member of the consortium. Len Daly is a professional member of the consortium and both Len and Don have been involved with the development of the standard from the start. The first book on the new way to present interactive 3D content over the Web, written by two of the designers of the standard Plentiful illustrations and screen shots in the full color text Companion website with extensive content, including the X3D specification, sample code and applications, content creation tools, and demos of compatible Web browsers

Designing for Emerging Technologies Jonathan Follett 2014-11-07 The recent digital and mobile revolutions are a minor blip compared to the next wave of technological change, as everything from robot swarms to skin-top embeddable computers and bio printable organs start appearing in coming years. In this collection of inspiring essays, designers, engineers, and researchers discuss their approaches to experience design for groundbreaking technologies. Design not only provides the framework for how technology works and how it’s used, but also places it in a broader context that includes the total ecosystem with which it interacts and the possibility of unintended consequences. If you’re a UX designer or engineer open to complexity and dissonant ideas, this book is a revelation. Contributors

include: Stephen Anderson, PoetPainter, LLC Lisa Caldwell, Brazen UX Martin Charlier, Independent Design Consultant Jeff Faneuff, Carbonite Andy Goodman, Fjord US Camille Goudeseune, Beckman Institute, University of Illinois at Urbana-Champaign Bill Hartman, Essential Design Steven Keating, MIT Media Lab, Mediated Matter Group Brook Kennedy, Virginia Tech Dirk Knemeyer, Involution Studios Barry Kudrowitz, University of Minnesota Gershom Kutliroff, Omek Studio at Intel Michal Levin, Google Matt Nish-Lapidus, Normative Erin Rae Hoffer, Autodesk Marco Righetto, SumAll Juhan Sonin, Involution Studios Scott Stropkay, Essential Design Scott Sullivan, Adaptive Path Hunter Whitney, Hunter Whitney and Associates, Inc. Yaron Yanai, Omek Studio at Intel

Discovering Wavelets Edward Aboufadel 1999-10-05 An accessible and practical introduction to wavelets With applications in image processing, audio restoration, seismology, and elsewhere, wavelets have been the subject of growing excitement and interest over the past several years. Unfortunately, most books on wavelets are accessible primarily to research mathematicians. Discovering Wavelets presents basic and advanced concepts of wavelets in a way that is accessible to anyone with only a fundamental knowledge of linear algebra. The basic concepts of wavelet theory are introduced in the context of an explanation of how the FBI uses wavelets to compress fingerprint images. Wavelet theory is further developed in the setting of function spaces. The book then moves on to present more advanced topics such as filters, multiresolution analysis, Daubechies' wavelets, and further applications. The book concludes with a series of projects and problems that introduce advanced topics and offer starting points for research. Sample projects that demonstrate real wavelet applications include image compression, a wavelet-based search engine, processing with Daubechies' wavelets,

and more. Among the special features of Discovering Wavelets are: * Real-life, hands-on examples that involve actual wavelet applications * A companion Web site containing Pixel Images software and Maple files to be used with the projects in the book * Challenging problems that reinforce and expand on the ideas being developed * An appendix containing the linear algebra needed to understand wavelets as presented in the book

Deep Learning In Biology And Medicine Davide Bacciu 2022-01-17 Biology, medicine and biochemistry have become data-centric fields for which Deep Learning methods are delivering groundbreaking results. Addressing high impact challenges, Deep Learning in Biology and Medicine provides an accessible and organic collection of Deep Learning essays on bioinformatics and medicine. It caters for a wide readership, ranging from machine learning practitioners and data scientists seeking methodological knowledge to address biomedical applications, to life science specialists in search of a gentle reference for advanced data analytics.With contributions from internationally renowned experts, the book covers foundational methodologies in a wide spectrum of life sciences applications, including electronic health record processing, diagnostic imaging, text processing, as well as omics-data processing. This survey of consolidated problems is complemented by a selection of advanced applications, including cheminformatics and biomedical interaction network analysis. A modern and mindful approach to the use of data-driven methodologies in the life sciences also requires careful consideration of the associated societal, ethical, legal and transparency challenges, which are covered in the concluding chapters of this book.

Understanding Magnetic Resonance Imaging Robert C. Smith 1997-11-20 Magnetic resonance imaging (MRI) is the most technically dependent imaging technique in radiology. To

perform and interpret MRI studies correctly, an understanding of the basic underlying principles is essential. Understanding Magnetic Resonance Imaging explains the pulse sequences, imaging options, and coils used to produce MR images, providing a strong foundation for performing and interpreting imaging studies. The text is complemented by more than 100 figures and 25 photomicrographs illustrating the techniques discussed. Radiology residents, MR technologists, and radiologists should not be without Understanding Magnetic Resonance Imaging-the only single resource that explains all technical aspects of MRI, including recent advances, and presents all imaging options.

Chaos & Complexity Brian Howard Kaye 1993

Parallel Supercomputing in SIMD Architectures R. Michael Hord 1990-04-30 Parallel Supercomputing in SIMD Architectures is a survey book providing a thorough review of Single-Instruction-Multiple-Data machines, a type of parallel processing computer that has grown to importance in recent years. It was written to describe this technology in depth including the architectural concept, its history, a variety of hardware implementations, major programming languages, algorithmic methods, representative applications, and an assessment of benefits and drawbacks. Although there are numerous books on parallel processing, this is the first volume devoted entirely to the massively parallel machines of the SIMD class. The reader already familiar with low order parallel processing will discover a different philosophy of parallelism--the data parallel paradigm instead of the more familiar program parallel scheme. The contents are organized into nine chapters, rich with illustrations and tables. The first two provide introduction and background covering fundamental concepts and a description of early SIMD computers. Chapters 3 through 8 each address specific machines from the first SIMD supercomputer (Illiac IV) through several contemporary designs to some example

research computers. The final chapter provides commentary and lessons learned. Because the test of any technology is what it can do, diverse applications are incorporated throughout, leading step by step to increasingly ambitious examples. The book is intended for a wide range of readers. Computer professionals will find sufficient detail to incorporate much of this material into their own endeavors. Program managers and applications system designers may find the solution to their requirements for high computational performance at an affordable cost. Scientists and engineers will find sufficient processing speed to make interactive simulation a practical adjunct to theory and experiment. Students will find a case study of an emerging and maturing technology. The general reader is afforded the opportunity to appreciate the power of advanced computing and some of the ramifications of this growing capability.

Program Synthesis Sumit Gulwani 2017-07-11

Program synthesis is the task of automatically finding a program in the underlying programming language that satisfies the user intent expressed in the form of some specification. Since the inception of artificial intelligence in the 1950s, this problem has been considered the holy grail of Computer Science. Despite inherent challenges in the problem such as ambiguity of user intent and a typically enormous search space of programs, the field of program synthesis has developed many different techniques that enable program synthesis in different real-life application domains. It is now used successfully in software engineering, biological discovery, compute-raided education, end-user programming, and data cleaning. In the last decade, several applications of synthesis in the field of programming by examples have been deployed in mass-market industrial products. This monograph is a general overview of the state-of-the-art approaches to program synthesis, its applications, and subfields. It discusses the general principles common to all

modern synthesis approaches such as syntactic bias, oracle-guided inductive search, and optimization techniques. We then present a literature review covering the four most common state-of-the-art techniques in program synthesis: enumerative search, constraint solving, stochastic search, and deduction-based programming by examples. It concludes with a brief list of future horizons for the field.

Parallel Algorithms for Regular Architectures Russ Miller 1996 Parallel-Algorithms for Regular Architectures is the first book to concentrate exclusively on algorithms and paradigms for programming parallel computers such as the hypercube, mesh, pyramid, and mesh-of-trees.

Multiple Myeloma Morie A. Gertz 2013-10-01 This is a comprehensive, state-of-the-art guide to the diagnosis, treatment, and biology of multiple myeloma and related plasma disorders. Edited and written by a multidisciplinary group of recognized authorities from the Mayo Clinic, it presents clear guidelines on diagnosis and therapy and covers all aspects of multiple myeloma, from molecular classification and diagnosis, to risk stratification and therapy. Closely related plasma cell disorders such as solitary plasmacytoma, Waldenstrom macroglobulinemia, and light chain amyloidosis are discussed in detail as well. The book addresses often overlooked topics, including the role of radiation therapy, vertebral augmentation, and supportive care. Our understanding of this group of disorders is developing at an unprecedented rate, and Multiple Myeloma meets the need among oncologists and hematologists for a clear, timely, and authoritative resource on their biology, diagnosis, and treatment.

From Indra's Net to Internet Daniel Veidlinger 2018-08-31 In this sweeping and ambitious intellectual history, Daniel Veidlinger traces the affinity between Buddhist ideas and communications media back to the efflorescence of Buddhism in the Axial Age of the mid-first

millennium BCE. He uses both communications theory and the idea of convergent evolution to show how Buddhism arose in the largely urban milieu of Axial Age northeastern India and spread rapidly along the transportation and trading nodes of the Silk Road, where it appealed to merchants and traders from a variety of backgrounds. Throughout, he compares early phases of Buddhism with contemporary developments in which rapid changes in patterns of social interaction were also experienced and brought about by large-scale urbanization and growth in communication and transportation. In both cases, such changes supported the expansive consciousness needed to allow Buddhism to germinate. Veidlinger argues that Buddhist ideas tend to fare well in certain media environments; through a careful analysis of communications used in these contexts, he finds persuasive parallels with modern advances in communications technology that amplify the conditions and effects found along ancient trade routes. From Indra's Net to Internet incorporates historical research as well as data collected using computer-based analysis of user-generated web content to demonstrate that robust communication networks, which allow for relatively easy contact among a variety of people, support a de-centered understanding of the self, greater compassion for others, an appreciation of interdependence, a universal outlook, and a reduction in emphasis on the efficacy of ritual—all of which lie at the heart of the Buddha's teachings. The book's interdisciplinary approach should appeal to those interested in not only Buddhism, media studies and history, but also computer science, cognitive science, and cultural evolution.

Pattern Models Narendra Ahuja 1983

Cardiovascular and Neurovascular Imaging Carlo Cavedon 2015-08-22 Cardiovascular and Neurovascular Imaging: Physics and Technology explains the underlying physical and technical principles behind a range of cardiovascular and

neurovascular imaging modalities, including radiography, nuclear medicine, ultrasound, and magnetic resonance imaging (MRI). Examining this interdisciplinary branch of medical imaging from a

Omics Data Integration towards Mining of Phenotype Specific Biomarkers in Cancer - Volume II Liang Cheng 2022-11-29

4D Visualization of Matter Ahmed H Zewail 2014-09-12 Ever since the beginning of mankind's efforts to pursue scientific inquiry into the laws of nature, visualization of the very distant and the very small has been paramount. The examples are numerous. A century ago, the atom appeared mysterious, a “raisin or plum pie of no structure,” until it was visualized on the appropriate length and time scales. Similarly, with telescopic observations, a central dogma of the cosmos was changed and complexity yielded to simplicity of the heliocentric structure and motion in our solar system. For matter, in over a century of developments, major advances have been made to explore the inner microscopic structures and dynamics. These advances have benefited many fields of endeavor, but visualization was incomplete; it was limited either to the 3D spatial structure or to the 1D temporal evolution. However, in systems with myriads of atoms, 4D spatiotemporal visualization is essential for dissecting their complexity. The biological world is rich with examples, and many molecular diseases cannot be fully understood without such direct visualization, as, for example, in the case of Alzheimer's and Parkinson's. The same is true for phenomena in materials science, chemistry, and nanoscience. This anthology is an account of the collected works that have emerged over the past decade from Caltech. Through recent publications, the volume provides overviews of the principles, the electron-based techniques, and the applications made. Thanks to advances in imaging principles and technology, it is now possible with 4D electron microscopy to reach

ten orders of magnitude improvement in time resolution while simultaneously conserving the atomic spatial resolution in visualization. This is certainly a long way from Robert Hooke's microscopy, which was recorded in his 1665 masterpiece Micrographia.

The Science of Interstellar Kip Thorne 2014-11-07 A journey through the otherworldly science behind Christopher Nolan’s award-winning film, Interstellar, from executive producer and Nobel Prize-winning physicist Kip Thorne. Interstellar, from acclaimed filmmaker Christopher Nolan, takes us on a fantastic voyage far beyond our solar system. Yet in The Science of Interstellar, Kip Thorne, the Nobel prize-winning physicist who assisted Nolan on the scientific aspects of Interstellar, shows us that the movie’s jaw-dropping events and stunning, never-before-attempted visuals are grounded in real science. Thorne shares his experiences working as the science adviser on the film and then moves on to the science itself. In chapters on wormholes, black holes, interstellar travel, and much more, Thorne’s scientific insights—many of them triggered during the actual scripting and shooting of Interstellar—describe the physical laws that govern our universe and the truly astounding phenomena that those laws make possible. Interstellar and all related characters and elements are trademarks of and © Warner Bros. Entertainment Inc. (s14).

Brainware Tsutomu Miki 2001 The human brain, the ultimate intelligent processor, can handle ambiguous and uncertain information adequately. The implementation of such a human-brain architecture and function is called ?brainware?. Brainware is a candidate for the new tool that will realize a human-friendly computer society. As one of the LSI implementations of brainware, a ?bio-inspired? hardware system is discussed in this book.Consisting of eight enriched versions of papers selected from IIZUKA '98, this volume

provides wide coverage, from neuronal function devices to vision systems, chaotic systems, and also an effective design methodology of hierarchical large-scale neural systems inspired by neuroscience. It can serve as a reference for graduate students and researchers working in the field of brainware. It is also a source of inspiration for research towards the realization of a silicon brain.

Epic Content Marketing: How to Tell a Different Story, Break through the Clutter, and Win More Customers by Marketing Less Joe Pulizzi 2013-09-27 Reach more customers than ever with TARGETED CONTENT Epic Content Marketing helps you develop strategies that seize the competitive edge by creating messages and "stories" tailored for instant, widespread distribution on social media, Google, and the mainstream press. It provides a step-by-step plan for developing powerful content that resonates with customers and describes best practices for social media sharing and search engine discoverability. Joe Pulizzi is a content marketing strategist, speaker and founder of the Content Marketing Institute, which runs the largest physical content marketing event in North America, Content Marketing World.

Parallel and Distributed Discrete Event Simulation Carl Tropper 2002 Discrete-event simulation has long been an integral part of the design process of complex engineering systems and the modelling of natural phenomena. Many of the systems that we seek to understand or control can be modelled as digital systems. In a digital model, we view the system at discrete instants of time, in effect taking snapshots of the system at these instants. For example, in a computer network simulation an event can be the sending of a message from one node to another node while in a VLSI logic simulation, the arrival of a signal at a gate may be viewed as an event. Digital systems such as computer systems are naturally susceptible to this approach. However, a variety of other systems

may also be modelled this way. These include transportation systems such as air-traffic control systems, epidemiological models such as the spreading of a virus, and military war-gaming models. This book is representative of the advances in this field.

Color Hard Copy and Graphic Arts III Jan Bareš 1994

Computer Vision -- ACCV 2014 Daniel Cremers 2015-04-15 The five-volume set LNCS 9003--9007 constitutes the thoroughly refereed post-conference proceedings of the 12th Asian Conference on Computer Vision, ACCV 2014, held in Singapore, Singapore, in November 2014. The total of 227 contributions presented in these volumes was carefully reviewed and selected from 814 submissions. The papers are organized in topical sections on recognition; 3D vision; low-level vision and features; segmentation; face and gesture, tracking; stereo, physics, video and events; and poster sessions 1-3.