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Medical and Biological Image Analysis - 2018-07-04

This book deals with medical image analysis methods. In particular, it contains two significant chapters on image segmentation as well as some selected examples of the application of image analysis and processing methods. Despite the significant development of information technology methods used in modern image analysis and processing algorithms, the segmentation process remains open. This is mainly due to intra-patient variability and/or scene diversity. Segmentation is equally difficult in the case of ultrasound imaging and depends on the location of the probe or the contact force. Regardless of the imaging method, segmentation must be tailored for a specific application in almost every case. These types of application areas for various imaging methods are included in this book.

Flash Imaging - Stephan Achenbach 2012-05-31

This book provides an introduction to Flash technology and to the basics of contrast media administration followed by 15 in-depth clinical scan and contrast media injection protocols. All were developed in consensus by selected physicians. Each protocol is complemented by

individual considerations, tricks and pitfalls, and by clinical examples from several of the world's best radiologists and cardiologists.

Co-morbidities in Heart Failure, An Issue of Heart Failure Clinics, E-Book - Faiez Zannad 2014-03-30

This issue of Heart Failure Clinics examines co-morbidities in patients with heart failure. Topics include hypertension, diabetes, pulmonary disorders, cardiorenal syndrome, anemia, depression, atrial fibrillation, obesity and cardiac cachexia, peripheral vascular disease, rheumatologic disorders, co-morbidities and polypharmacy, coronary artery disease, and clinical trials.

ASE's Comprehensive Strain Imaging, E-Book - Thomas H. Marwick 2021-05-01

Strain imaging (also known as speckle-tracking echocardiography or STE) is a rapidly growing, affordable, and versatile cardiac imaging technology of great interest to clinicians in both inpatient and outpatient settings. ASE's Comprehensive Strain Imaging is the first reference designed to help you master a wide range of strain imaging/STE applications, including screening, diagnosis, treatment, and follow up. Written and edited by a team of international experts from the American Society of Echocardiography (ASE), this new resource provides the information you need to optimize imaging acquisition and analysis using this important new echocardiography method. Covers step-by-step techniques on how to use strain imaging with expert tips on nuances, pitfalls, and clinical decision making. Discusses the growing range of strain imaging applications for assessing diastolic function, atrial function, heart failure, arterial disease, valve disease, hypertrophy, and other common cardiovascular conditions. Provides up-to-date information on screening and follow up of patients who receive cardio-toxic oncologic agents during cancer treatment and evaluation of patients with cardiomyopathy, heart failure, arterial disease, valve disease, implantable pacemakers, pericardial disease, hypertrophy, ischemic disease, and chest radiation. Includes more than 150 images using the latest strain imaging technology, as well as videos that depict evaluation and monitoring of patients with cardiomyopathies. Addresses future applications, including elastography.

Contrast Echocardiography - Harald Becher 2019-07-03

This book provides a comprehensive overview of the practical aspects of contrast echocardiography. It also covers all the material in the guidelines published by the American Society of Echocardiography (ASE) in 2018 and the recommendations set out by the European Association of Cardiovascular Imaging (EACVI) in 2017. Contrast echocardiography at present is only used in 5-10% of cases, but this is expected

to grow rapidly following the recommendations of the ASE and EACVI. The chapters cover the approved indications and provide practical advice on how to administer the contrast agents and how to optimize the recordings as well as how to deal with the pitfalls. The reader will find all the information on how to use contrast agents for assessment of shunts, LV volumes and function as well as myocardial diseases and masses. Detailed protocols are included for stress echocardiography and myocardial perfusion imaging. Other topics covered include the use of contrast agents for coronary sonography and transesophageal echocardiography. Contrast Echocardiography: Compendium for Clinical Practice comprehensively covers all aspects of the clinical use of contrast echocardiography and has been written by two cardiologists who share their experience from their high volume echo laboratories. One of the authors has been a member of both the ASE guidelines and EACVI recommendation writing groups. It is therefore, a critical text for echocardiographers and sonographers who perform echocardiography.

Cardiac Ultrasound - Peter Wilde 1993

This work provides readable yet comprehensive review of the current state of cardiac ultrasound. Together with its companion titles, Abdominal and General Ultrasound and Ultrasound in Obstetrics and Gynaecology it forms Clinical Ultrasound: a Comprehensive Text.

Update on Hepatitis C - Martina Smolic 2017-10-04

In the past few years, remarkable progress has been made in our understanding of HCV biology, pathogenesis of infection, and structure-function relationships. This has led to quantum advances in clinical efficacy and tolerability. Yet, in spite of this amazing progress, there remain obstacles to widespread successful treatment. These issues include biological failures even with direct-acting agents, lack of options for individual with organ failures, drug-drug interactions, access to medications either due to lack of availability or affordability, and psychiatric and social issues. These problems are likely to remain in the future. Therefore, this book has been created by distinguished faculties from around the world to address the progress in our understanding of HCV infection and to review new treatment options, limitations, and accessibility of new therapeutic options.

The Visualization Toolkit - Will Schroeder 1998

This Java-built "Visualization Toolkit (VTK)" will enable readers to represent any set of data--medical, scientific, or financial--in 3D. Users will learn to build 3D Java applets with the VTK software on the CD-ROM. The book covers Web applications like VRML, Java, and Java3D.

Essential Echocardiography - Timothy M. Maus 2022-02-04

Building on the success of the previous edition,

this review book includes all of the original content plus several new chapters dedicated to the education and implementation of transthoracic echocardiography and point-of-care ultrasonography. Chapters feature board review-style questions and answers to assist readers with board exam preparation. This book also includes the most up-to-date echocardiography content and practice guidelines. This book fills an educational gap in the perioperative and critical care echocardiography landscape. It addresses essential perioperative and critical care echocardiography topics in an accessible manner for those who provide acute care and resuscitation in any environment, including the operating room, intensive care unit, and the emergency department. Essential Echocardiography, 2nd edition, is expertly written for the practitioner with limited knowledge of echocardiography preparing for either the Examination of Special Competence in Basic Perioperative TEE (Basic PTEeXAM) or the Examination of Special Competence in Critical Care Echocardiography (CCEeXAM).

Aneurysms-Osteoarthritis Syndrome - Denise van der Linde 2016-10-03

Aneurysms-Osteoarthritis Syndrome: SMAD3 Gene Mutations is a first-of-its-kind compilation of the genetic discovery, research, and care associated with AOS. With the field of genetically triggered aortopathies growing, this important reference will compile the newest discoveries in this field, allowing cardiologists, cardio-thoracic surgeons, clinical geneticists, vascular surgeons, orthopedic surgeons, and researchers to gain the knowledge they need without having to gather the data from various sources. Coverage includes genotype and phenotype correlations, the functional role of SMAD3, and insights into the role of TGFbeta signaling in aortic disease. The book will increase knowledge about AOS, providing awareness and better patient care for this aggressive disease. Covers Aneurysms-Osteoarthritis Syndrome, from genetic discovery to patient care Contains clinical management guidance on optimal cardiovascular treatments and surgery Explains the autosomal dominant syndromes caused by mutations in the SMAD3 gene Identifies the key features of this syndrome, including arterial aneurysms and tortuosity, early onset arthritis, and mild craniofacial features

Przekrój - 2005

Pocket Guide to Echocardiography - Andro G. Kacharava 2012-07-25

With its easy accessibility, low cost, and ability to deliver,essential bedside information about the cardiac structure andfunction, echocardiography has become one of the most relied-upondiagnostic tools in clinical medicine. As a result, more cliniciansthan ever before must be able to accurately interpretechocardiographic

information in order to administer appropriatetreatment. Based on the authors' experience teaching echocardiographyin busy clinical settings, this new pocketbook provides reliableguidance on everyday clinical cardiac ultrasound and theinterpretation of echocardiographic images. It has been designed tohelp readers develop a stepwise approach to the interpretation of astandard transthoracic echocardiographic study and teach how tomethodically gather and assemble the most important informationfrom each of the standard echocardiographic views in order togenerate a complete final report of the study performed. What's included: • A summary of TTE examination protocol and acomprehensive listing of useful formulas and normal values • Atrial and ventricular dimensions, LV and RVsystolic function, LV diastolic patterns • Echocardiographic findings in the most commonlyencountered cardiac diseases and disorders, including variouscardiomyopathies, cardiac tamponade, constrictive pericarditis,valvular heart disease, pulmonary hypertension, infectiveendocarditis, and congenital heart disease • Companion website with video clips and over 70self-assessment questions Packed with essential information and designed for quick look-up,this pocketbook will be of great assistance for anyone who works inbusy clinical settings and who needs a ready and reliable guide tointerpreting echocardiographic information to help deliver optimalpatient care.

Coronary Angiography - Baskot Branislav 2011-09-15

In the intervening 10 years tremendous advances in the field of cardiac computed tomography have occurred. We now can legitimately claim that computed tomography angiography (CTA) of the coronary arteries is available. In the evaluation of patients with suspected coronary artery disease (CAD), many guidelines today consider CTA an alternative to stress testing. The use of CTA in primary prevention patients is more controversial in considering diagnostic test interpretation in populations with a low prevalence to disease. However the nuclear technique most frequently used by cardiologists is myocardial perfusion imaging (MPI). The combination of a nuclear camera with CTA allows for the attainment of coronary anatomic, cardiac function and MPI from one piece of equipment. PET/SPECT cameras can now assess perfusion, function, and metabolism. Assessing cardiac viability is now fairly routine with these enhancements to cardiac imaging. This issue is full of important information that every cardiologist needs to now.

Practical 3D Echocardiography - Joseph F. Maalouf 2021-10-21

This extensive clinically focused book is a detailed practical 3D echocardiography imaging reference that addresses the concerns and needs

of both the novice and experienced 3D echocardiographer. Chapters have been written in a highly instructive and practical disease- and problem-oriented approach supported by illustrative high-quality images (and corresponding 3D echo video clips where applicable) that demonstrate the incremental value of 3D echocardiography over 2D echocardiography in practice. Practical 3D Echocardiography is an intuitive guide to 3D imaging – what to look for, how to look for it, the best and special views, caveats and pitfalls when applicable, and clinical pearls and pointers – that can be used in daily practice. It is therefore of immense value to any practicing or trainee echocardiographer, cardiologist and internist.

Ultrasound in Cardiology - K. Schmailzl 1994-12-13

This is a comprehensive review of the differential diagnosis of heart and great vessel diseases using echocardiography and published to the highest production standards currently available. It embraces conventional and colour coded doppler echo, computer driven cardiac ultrasound and interventional echo. It includes perioperative transoesophageal techniques and ultrasound in emergency medicine and intensive care.

Echocardiography - Petros Nihoyannopoulos 2010-03-26

As increasing emphasis is placed on evidence-based medicine and the need to a rapid and clinically effective diagnosis of cardiac disease, so echocardiography is ever-more present at the forefront of cardiology. This book represents the current knowledge in the technique of cardiology and is designed to guide the resident and fellow through the most common applications of echocardiography while touching on some of the less often seen echocardiographic diagnoses.

JIMD Reports, Volume 18 - Johannes Zschocke 2015-03-16

JIMD Reports publishes case and short research reports in the area of inherited metabolic disorders. Case reports highlight some unusual or previously unrecorded feature relevant to the disorder, or serve as an important reminder of clinical or biochemical features of a Mendelian disorder.

Manual of 3D Echocardiography - Eduardo Casas Rojo 2017-03-15

This book is a practical guiding manual to explain critical clinical practice in three-dimensional (3D) echocardiography. The use of this technology has been limited to certain pioneer imaging units, but with the advent of lower cost hardware it is spreading and reaching more users that will start to use it often without previous experience or formal academic training. This title provides these readers with a full review of the features, clinical indications and methodological aspects of 3D echo in a practical, "how-to-do-it" way. 3D-echocardiography techniques are becoming more

diverse, as they are applied to transthoracic and transesophageal studies, 3D-wall motion tracking, fusion of echocardiographic and fluoroscopy navigation, fusion of wall motion tracking and coronary tomography. All these aspects are described and explained deeply in this book.

Case-Based Textbook of Echocardiography - Anita Sadeghpour 2018-10-24

This volume is a step-by-step educational echocardiography textbook from basic principles to advanced concepts. It is designed to rationalise and instruct readers on the rapid development in echocardiographic techniques, including real-time three-dimensional echocardiography, strain/strain rate imaging, and speckle tracking, which have greatly expanded the capabilities of cardiac imaging while overshadowing the importance of the basics of echocardiography. Case-Based Textbook of Echocardiography offers a comprehensive review of echocardiography from basic skills to advanced techniques, including practical information from recently published ASE/EACVI guidelines and explanatory movies and figures. Providing balance between the science and clinical pearls, it is of great interest for all trainee cardiologists and echocardiographers and helpful to all clinicians in cardiology, internal medicine, cardiac surgery, interventio nal cardiology and paediatric cardiology.

Medical Image Understanding and Analysis - Bart□omiej W. Papie□ 2021-07-06

This book constitutes the refereed proceedings of the 25th Conference on Medical Image Understanding and Analysis, MIUA 2021, held in July 2021. Due to COVID-19 pandemic the conference was held virtually. The 32 full papers and 8 short papers presented were carefully reviewed and selected from 77 submissions. They were organized according to following topical sections: biomarker detection; image registration, and reconstruction; image segmentation; generative models, biomedical simulation and modelling; classification; image enhancement, quality assessment, and data privacy; radiomics, predictive models, and quantitative imaging.

Ultrasound in Oncology: Application of Big Data and Artificial Intelligence - Hui-Xiong Xu 2022-02-09

Transvenous Lead Extraction - Maria Grazia Bongiorni 2011-09-06

In the last years, indications for defibrillators and cardiac resynchronization therapy have expanded enormously; for this reason, and also due to the extension of human life length, the number of patients with implanted cardiac devices have steadily increased. The leads implanted for the functioning of these devices, however, have a limited duration in time and more and more their extraction will be a frequent issue in clinical practice, in order to treat short- and long-term

complications, such as infections and failures. Aim of this book is to provide readers with a state-of-the-art on lead extraction techniques. The chapters deal with leads characteristics, indications to lead removal, patient preparation, tools and techniques for extraction, and prevention and management of complications. In addition, a series of tips and tricks on how to treat some particular conditions (tight cost-clavicular space, fractured leads, ICD leads, dangered leads...etc.), are given. A new extracting technique, according to which the extraction is performed through the internal jugular vein is described; several examples are included and many figures provide a thorough depiction of this innovative procedure. The volume will be an excellent resource for all those involved in the management of cardiac patients: cardiologists, arrhythmologists, cardiac surgeons, GPs, pediatricians, and post-graduate students in these disciplines.

Perioperative Care of the Elderly - Gabriella Bettelli 2017-11-16

This innovative, comprehensive book covers the key elements of perioperative management of older patients. The book's chapter structure coincides with the clinical path patients tread during their treatment, from preoperative evaluation to post-hospital care. Epidemiological aspects and aging processes are illustrated, providing keys to understanding the quick expansion of geriatric surgery and defining the clinical profile of older surgical patients in a cybernetic perspective. Preoperative evaluation and preparation for surgery, including medication reconciliation and pre-habilitation, are developed in the light of supporting decision-making about surgery in an evidence-based and patient-focused way. Intra- and postoperative management are discussed, aiming to tailor anesthetic, surgical and nursing approaches to specific patients' needs, in order to prevent both general and age-related complications. This volume also addresses issues relevant to geriatric surgery, from different organizational models to clinical risk management and systems engineering applied to hospital organization.

Shape Analysis in Medical Image Analysis - Shuo Li 2014-01-28

This book contains thirteen contributions from invited experts of international recognition addressing important issues in shape analysis in medical image analysis, including techniques for image segmentation, registration, modelling and classification and applications in biology, as well as in cardiac, brain, spine, chest, lung and clinical practice. This volume treats topics such as for example, anatomic and functional shape representation and matching; shape-based medical image segmentation; shape registration; statistical shape analysis; shape deformation; shape-based abnormity detection; shape tracking

and longitudinal shape analysis; machine learning for shape modeling and analysis; shape-based computer-aided-diagnosis; shape-based medical navigation; benchmark and validation of shape representation, analysis and modeling algorithms. This work will be of interest to researchers, students and manufacturers in the fields of artificial intelligence, bioengineering, biomechanics, computational mechanics, computational vision, computer sciences, human motion, mathematics, medical imaging, medicine, pattern recognition and physics.

Advances in Healthcare Technology - Gerhard Spekowius 2006-07-06

Improving healthcare and staying healthy is one of the most discussed and important issues in our society. Technology has played and will play an important role in many aspects of the healthcare system, and it offers new and better ways to solve the key health problems of the new century. This book describes valued contributions of technology for improving hospital and home healthcare, and gives a perspective on how they will influence critical aspects of future medical care. It provides an overview and discussion of trends, presents the state-of-the-art of important research areas, and highlights recent breakthrough results in selected fields, giving an outlook on game-changing developments in the coming decades. The material is arranged in 6 parts and a total of 31 chapters. The healthcare areas addressed are: General advances and trends in healthcare technology, diagnostic imaging, integration of imaging and therapy, molecular medicine, medical information technology and personal healthcare.

Ultrafast Ultrasound Imaging - Hideyuki Hasegawa 2018-09-21

This book is a printed edition of the Special Issue "Ultrafast Ultrasound Imaging" that was published in Applied Sciences

Diagnosis and Management of Pediatric Diseases - Consolato M. Sergi 2019-12-10

A screenshot of some the most rapidly evolving fields in Neonatology and Pediatrics with articles reviewing some metabolic dysregulations as well as non-oncologic diseases that may occur in infancy, childhood, youth. The illustrative material with original photographs and drawings highlighting some pathogenetic concepts are keystones of this book.

Cardiac Resynchronization Therapy - Martin St. John Sutton 2007-09-19

Cardiac resynchronization therapy (CRT) is one of the most exciting new advances in the treatment of chronic severe (NYHA symptom class) heart failure associated with dyssynchronous ventricular contraction that is refractory to medical treatment. In all randomized trials CR has resulted in improved NYHA symptom class, exercise capacity and quality

The Right Ventricle - Marvin A. Konstam

2012-12-06

It is quite natural that literature related to car heart disease, cardiomyopathy, pulmonary and diac structure, function, pathology, and patho pulmonary vascular disease, trauma, acquired valvular disease, congenital disease, and surgi physiology has emphasized the left heart and systemic circulation. The relative lack of im cal considerations. The pathologic and clinical relevance of myocardial infarction of the right portance of the right ventricle was supported by studies performed in the 1940s and 1950s ventricle has only been documented over the which suggested that the right ventricular free last 15 years. The chapter on right ventricular wall could be effectively destroyed in an animal infarction integrates clinical, functional, patho model without detectable untoward hemody physiologic, and pathologic observations to pro namic consequences. The relative inadequacy vide the reader with a thorough review, equally of noninvasive tools to study right ventricular relevant to the clinician and investigator. The contribution on dilated cardiomyopathy pro structure and function obviated detailed and systematic investigation. However, over the vides novel insight into the impact of right ventricular performance on the functional in past 15 years there has been a resurgence of interest in the right ventricle by a variety of capacity accompanying left heart failure. A book dealing with the right ventricle would investigators. The skeptic would argue that this renewed interest resulted from an exhaustion be incomplete without at least cursory reference we have of clinically-related observations that could be to the pulmonary circulation.

Textbook of Three-Dimensional Echocardiography - Luigi P. Badano 2019-08-14

This thoroughly revised textbook provides a practically applicable guide to three-dimensional echocardiography (3DE). Background is provided on the evolution of the technology and physics that support the implementation of both transthoracic and transesophageal approaches to 3DE. The incremental value of 3DE to assess cardiac chambers is also described. Moreover, a range of cardiac valvular diseases including the mitral, aortic, and tricuspid valve have been portrayed and illustrated in depth.These include congenital abnormalities, regurgitation and stenosis. Emphasis is also placed on technical aspects of the technique and where it can provide added value, including post-surgery assessments and evaluation of cardiac masses. Textbook of Three-Dimensional Echocardiography enables readers to develop a deep understanding of how to use this imaging modality. It provides a valuable resource for the echocardiography trainee looking to develop their knowledge and for the experienced practitioner seeking a comprehensive up-to-date reference.

Intracardiac Echocardiography - Frank E. Silvestry 2021-09-02

Intracardiac Echocardiography is the first echocardiographic textbook of its kind to specifically cover ICE. Discussing all aspects of intracardiac ultrasound, it allows readers to perfect ICE image acquisition and helps to guide interpretation of this information during interventional and electrophysiologic procedures. Unique and informative, the text explores: introductory echo physics currently available intracardiac ultrasound systems basic image acquisition the role of ICE in both the interventional and electrophysiology laboratory, as well as in the diagnostic setting. Featuring expert commentary by leaders in the field, the book also includes high quality echocardiographic images illustrating how ICE is used in a wide variety of procedures such as transseptal catheterization, PFO and ASD closure, atrial fibrillation ablation procedures, and many others.

Echocardiography in Ischemic Heart Disease - Eugenio Picano 1996

Exploration of the Physiological Effects of Exercise in Cardiovascular Diseases - Markos Klonizakis 2020-11-18

This eBook is a collection of articles from a Frontiers Research Topic. Frontiers Research Topics are very popular trademarks of the Frontiers Journals Series: they are collections of at least ten articles, all centered on a particular subject. With their unique mix of varied contributions from Original Research to Review Articles, Frontiers Research Topics unify the most influential researchers, the latest key findings and historical advances in a hot research area! Find out more on how to host your own Frontiers Research Topic or contribute to one as an author by contacting the Frontiers Editorial Office: frontiersin.org/about/contact.

Echocardiography in ICU - Michel Slama 2020-05-28

This book offers readers a better understanding of how to perform echocardiography in their daily intensive care unit (ICU) work. With numerous practical examples highlighting the indices and hemodynamic monitoring profiles that physicians could encounter, it considers echocardiography not merely as a simple imaging technique, but as a practical diagnostic and hemodynamic monitoring tool. The booklet is richly illustrated with figures explaining how to perform echo, and includes numerous tables, simple equations and normal and abnormal values. Echocardiography in ICU, a pocket guide written by the leading international experts in the field, is an excellent source of information and guidance for all residents and physicians working in ICU, emergency medicine, anesthesia and cardiology as well.

Medical Computer Vision. Large Data in Medical

Imaging - Bjoern Menze 2014-03-31

This book constitutes the thoroughly refereed post-workshop proceedings of the Third International Workshop on Medical Computer Vision, MCV 2013, held in Nagoya, Japan, in September 2013 in conjunction with the 16th International Conference on Medical Image Computing and Computer-Assisted Intervention, MICCAI 2013. The 7 revised full papers and 12 poster papers presented were selected from 25 submissions. They have been organized in topical sections on registration and visualization, segmentation, detection and localization, and features and retrieval. In addition, the volume contains two invited papers describing segmentation task and data set of the VISCERAL benchmark challenge.

Medical Image Computing and Computer Assisted Intervention – MICCAI 2019 - Dinggang Shen 2019-10-10

The six-volume set LNCS 11764, 11765, 11766, 11767, 11768, and 11769 constitutes the refereed proceedings of the 22nd International Conference on Medical Image Computing and Computer-Assisted Intervention, MICCAI 2019, held in Shenzhen, China, in October 2019. The 539 revised full papers presented were carefully reviewed and selected from 1730 submissions in a double-blind review process. The papers are organized in the following topical sections: Part I: optical imaging; endoscopy; microscopy. Part II: image segmentation; image registration; cardiovascular imaging; growth, development, atrophy and progression. Part III: neuroimage reconstruction and synthesis; neuroimage segmentation; diffusion weighted magnetic resonance imaging; functional neuroimaging (fMRI); miscellaneous neuroimaging. Part IV: shape; prediction; detection and localization; machine learning; computer-aided diagnosis; image reconstruction and synthesis. Part V: computer assisted interventions; MIC meets CAI. Part VI: computed tomography; X-ray imaging.

State of the Art Techniques in Critical Care Echocardiography - Konstantin Yastrebov 2019-11-22

This book covers all aspects of modern techniques used in the rapidly developing field of adult critical care echocardiography, 3D transthoracic and transesophageal echocardiography, myocardial tissue velocity and deformation assessment, and contrast echocardiography. Featuring multiple color illustrations and echocardiographic images, it provides essential information on the technical aspects and current specifics of the equipment, anatomical imaging guidance, and physiological and pathological approaches with a focus on critically ill population. This book helps practitioners to not only understand the techniques and the applicability of these new technologies in various disease states, but also to

apply them in a clinical setting. 3D echo, tissue deformation and contrast are opening tremendous new horizons for intensive care practitioners, offering them previously unimaginable insights into cardiac mechanics and anatomy and using non-invasive approaches for central hemodynamic diagnostic and monitoring management of intensive care patients. It also opens the way for completely new areas in clinical research. This book is useful for intensive care physicians, cardiologists, anesthesiologists, emergency physicians and sonographers involved in the provision of advanced echocardiographic services in intensive care units and in critical care environments. It is also suitable for students undertaking a Diploma of Diagnostic Ultrasound (Critical Care) with the Australasian Society of Ultrasound Medicine, adding to the existing literature used to prepare for the second and third parts examinations.

Wprost - 2005

Internet of Things: A Hands-On Approach - Arshdeep Bahga 2014-08-09

Internet of Things (IoT) refers to physical and virtual objects that have unique identities and are connected to the internet to facilitate intelligent applications that make energy, logistics, industrial control, retail, agriculture and many other domains "smarter". Internet of Things is a new revolution of the Internet that is rapidly gathering momentum driven by the advancements in sensor networks, mobile devices, wireless communications, networking and cloud technologies. Experts forecast that by the year 2020 there will be a total of 50 billion devices/things connected to the internet. This book is written as a textbook on Internet of Things for educational programs at colleges and universities, and also for IoT vendors and service providers who may be interested in offering a broader perspective of Internet of Things to accompany their own customer and developer training programs. The typical reader is expected to have completed a couple of courses in programming using traditional high-level languages at the college-level, and is either a senior or a beginning graduate student in one of the science, technology, engineering or mathematics (STEM) fields. Like our companion book on Cloud Computing, we have tried to write a comprehensive book that transfers knowledge through an immersive "hands on" approach, where the reader is provided the necessary guidance and knowledge to develop working code for real-world IoT applications. Additional support is available at the book's website: www.internet-of-things-book.com Organization The book is organized into 3 main parts, comprising of a total of 11 chapters. Part I covers the building blocks of Internet of Things (IoTs) and their characteristics. A taxonomy of IoT

systems is proposed comprising of various IoT levels with increasing levels of complexity. Domain specific Internet of Things and their real-world applications are described. A generic design methodology for IoT is proposed. An IoT system management approach using NETCONF-YANG is described. Part II introduces the reader to the programming aspects of Internet of Things with a view towards rapid prototyping of complex IoT applications. We chose Python as the primary programming language for this book, and an introduction to Python is also included within the text to bring readers to a common level of expertise. We describe packages, frameworks and cloud services including the WAMP-AutoBahn, Xively cloud and Amazon Web Services which can be used for developing IoT systems. We chose the Raspberry Pi device for the examples in this book. Reference architectures for different levels of IoT applications are examined in detail. Case studies with complete source code for various IoT domains including home automation, smart environment, smart cities, logistics, retail, smart energy, smart agriculture, industrial control and smart health, are described. Part III introduces the reader to advanced topics on IoT including IoT data analytics and Tools for IoT. Case studies on collecting and analyzing data generated by Internet of Things in the cloud are described.

Medical Imaging and Radiotherapy - William Lewis 2019-03-15

Medical Imaging reviews the scientific basis and physical principles underpinning imaging in medicine. It covers the major imaging methods of x-radiology, nuclear medicine, ultrasound, and nuclear magnetic resonance, and considers promising new techniques. Computed tomography (CT) is an integral component of the general radiography department. Radiographers are health professionals who facilitate patient diagnosis and management through the creation of medical images using X-rays, ultrasound and magnetic resonance. They play a pivotal role in selecting and implementing the most appropriate examination protocols which will answer the clinical question. When utilizing x-radiation radiographers must implement appropriate radiation protection measures and act at all times to keep the radiation dose as low as practicable. Radiographers work in collaboration with radiologists and other specialist medical practitioners to provide patients with a range of diagnostic examinations. Throughout the book, the author encourages readers to consider key questions concerning imaging. This profusely illustrated and extensively indexed text is accessible to graduate physical scientists, advanced undergraduates, and research students.