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New Trends in Medical and Service Robots Routledge
How can America's

healthcare system be transformed to provide consistently higher-quality and lower-cost care? Nothing else in healthcare matters more. Prescription for the Future identifies some standout medical organizations that have achieved higher-quality, more patient-focused, and lower-cost care, and from their examples distills twelve transformational practices that could transform the entire healthcare sector. Ezekiel J. Emanuel looks at individual physician practices and organizations who are already successfully driving change, and the specific practices they have instituted. They are not the titans everyone seems to know and assume to be the "best"; instead, Emanuel has chosen a select group -- from small physician offices to large multi-specialty group practices, accountable care organizations, and even for-profit companies--that are genuinely transforming care. Prescription for the Future shines a bright diagnostic light on the state of American healthcare and provides invaluable insights for healthcare workers, investors, and patients. The book gives all of us the tools to recognize the places that will deliver high-quality, effective care when we need it.

Medical and Healthcare Robotics Springer Nature

This book covers recent trends in the field of devices, wireless

communication and networking. It gathers selected papers presented at the International Conference on Communication, Devices and Networking (ICCDN 2020), which was organized by the Department of Electronics and Communication Engineering, Sikkim Manipal Institute of Technology, Sikkim, India, on 19–20 December 2020. Gathering cutting-edge research papers prepared by researchers, engineers and industry professionals, it helps young and experienced scientists and developers alike to explore new perspectives, and offer them inspirations on how to address real-world problems in the areas of electronics, communication, devices and networking.

Robotics in Surgery

Springer Nature

This volume introduces engineers and healthcare professionals to the latest in neurosurgical robotic technology. The chapters in this book are organized into two parts and cover basic engineering concepts that underpin surgical robotics; various robotic platforms and how these systems make their way to the clinic; popular applications of surgical robots in neurosurgery within subspecialties; and a discussion on the future development of neurosurgical robotic systems. In the Neuromethods series style, chapters include

the kind of detail and key advice from the specialists needed to get successful results in your clinic. Cutting-edge and thorough, Neurosurgical Robotics is a valuable resources for scientists and engineers interested in learning more about this fascinating and developing field.

Robotic Technologies in Biomedical and Healthcare Engineering Medical Robotics

Medical and Service Robotics integrate the most recent achievements in mechanics, mechatronics, computer science, haptic and teleoperation devices together with adaptive control algorithms. The book includes topics such as surgery robotics, assist devices, rehabilitation technology, surgical instrumentation and Brain-Machine Interface (BMI) as examples for medical robotics. Autonomous cleaning, tending, logistics, surveying and rescue robots, and elderly and healthcare robots are typical examples of topics from service robotics. This is the Proceedings of the Third International Workshop on Medical and Service Robots, held in Lausanne, Switzerland in 2014. It presents an overview of current research directions and fields of interest. It is divided into three sections, namely 1) assistive and rehabilitation devices; 2) surgical robotics; and 3) educational and service robotics. Most

contributions are strongly anchored on collaborations between technical and medical actors, engineers, surgeons and clinicians. Biomedical robotics and the rapidly growing service automation fields have clearly overtaken the “classical” industrial robotics and automatic control centered activity familiar to the older generation of roboticists.

Neurosurgical Robotics Bentham Science Publishers

Robot-assisted healthcare offers benefits for repetitive, intensive and task specific training compared to traditional manual manipulation performed by physiotherapists. However, a majority of existing rehabilitation devices use rigid actuators such as electric motors or hydraulic cylinders which cannot guarantee the safety of patients. This book provides biomedical engineering and robotics professionals and students with the fundamental mechatronic engineering knowledge to analyze and design new soft robotic devices. The authors present a systematic investigation of the design, modelling, methods, and control methods, implementation and novel applications of mechatronics to provide better clinical rehabilitation services and new insights into emerging technologies utilized in soft robots for healthcare.

Advances in Computer Vision Elsevier

Transcultural Artificial Intelligence and Robotics in Health and Social Care provides healthcare professionals with a deeper understanding of the incredible opportunities brought by the emerging field of AI robotics. In addition, it provides robotic researchers with the point-of-view of healthcare professionals to understand what the healthcare sector – as well as the market – really needs from robotics technology. By doing so, the book fills an important gap between both fields in order to leverage new developments and collaborative work in favor of global patients. The book is aimed at the non-technical reader, especially health and social care professionals, and explains in a simple way the technological principles applied in the development of socially assistive humanoid AI robots (SAHR), the values which guide such developments, the ethics related to them, and research approaches in the field, with a focus on achieving a culturally competent SAHR. 2023 PROSE Awards - Winner: Category: Nursing and Allied Health: Association of American Publishers Presents user-friendly and stage-by-stage information to help readers appreciate how AI robots work and how they can be integrated in their work environments Explains why AI and socially assistive robotics need

to be culturally competent Helps reduce readers' fears and change negative prejudices they may have about robots as a relevant tool for healthcare Written by experts in AI robotics and the creators of transcultural health/social robotics Informed by the largest trial conducted with real patients Emerging Technologies for Health and Medicine Springer Nature Handbook of Robotic and Image-Guided Surgery provides state-of-the-art systems and methods for robotic and computer-assisted surgeries. In this masterpiece, contributions of 169 researchers from 19 countries have been gathered to provide 38 chapters. This handbook is 744 pages, includes 659 figures and 61 videos. It also provides basic medical knowledge for engineers and basic engineering principles for surgeons. A key strength of this text is the fusion of engineering, radiology, and surgical principles into one book. A thorough and in-depth handbook on surgical robotics and image-guided surgery which includes both fundamentals and advances in the field A comprehensive reference on robot-assisted laparoscopic, orthopedic, and head-and-neck surgeries Chapters are contributed by worldwide experts from both engineering and surgical backgrounds **Essentials of Robotic Surgery** Elsevier

This book constitutes the refereed proceedings of the 11th International Conference on Social Robotics, ICSR 2019, held in Madrid, Spain, in November 2019.The 69 full papers presented were carefully reviewed and selected from 92 submissions. The theme of the 2018 conference is: Friendly Robotics.The papers focus on the following topics: perceptions and expectations of social robots; cognition and social values for social robots; verbal interaction with social robots; social cues and design of social robots; emotional and expressive interaction with social robots; collaborative SR and SR at the workplace; game approaches and applications to HRI; applications in health domain; robots at home and at public spaces; robots in education; technical innovations in social robotics; and privacy and safety of the social robots.

YY/T 1686-2020: Translated English of Chinese Standard. (YYT 1686-2020, YY/T1686-2020, YYT1686-2020) IGI Global

The text presents the conclusions of four years joint work of 12 European laboratories on mobile robotics technology for healthcare services. The book bridges the human factors and the demands of real-life applications to the achievements of the robotics technology. It is organize d in 15 chapters analyzing topics covering all the

related fields and including but not limited to: user - application requirements, human machine interfacing, mobile robots' and mobile manipulators' control architectures, navigation and sensing strategies, and robot - smart building interconnection. It also provides technical details and hints to the reader on how to address real-life problems. The book also performs a historical review and includes an overview of the contemporary developments worldwide.

Exoskeleton Robots for Rehabilitation and Healthcare Devices https://www.chinesestandard.net

What is artificial intelligence (AI)? What is healthcare robotics? How can AI and healthcare robotics assist in contemporary medicine? Robotics and AI can offer society unimaginable benefits, such as enabling wheelchair users to walk again, performing surgery in a highly automated and minimally invasive way, and delivering care more efficiently. AI for Healthcare Robotics explains what healthcare robots are and how AI empowers them in achieving the goals of contemporary medicine.

Internet of Things and Big Data Technologies for Next Generation Healthcare Springer Nature

Medical and Healthcare Robotics: New Paradigms and Recent Advances provides an overview and exclusive insights into current

trends, the most recent innovations, and concerns in medical robotics. The book covers the major areas of medical robotics, including rehabilitation devices, artificial organs, assistive technologies, service robotics, and robotic devices for surgery, exploration, diagnosis, therapy, and training. It highlights the limitations and the importance of robotics and artificial intelligence for medical and healthcare applications. The book is a timely and comprehensive reference guide for undergraduate-level students, graduate students, and researchers in the fields of electrical engineering, mechanical engineering, mechatronics, control systems engineering, and biomedical engineering. It can be useful for master's programs, leading consultants, and industrial companies. The book can be of high interest for physicians and physiotherapists and all technical people in the medical and biomedical fields. Covers the main areas of medical and healthcare robotics Presents the most recent innovations and trends in medical and healthcare robotics Contains chapters written by eminent researchers in the field *Handbook of Robotic and Image-Guided Surgery* Springer Medical robots are increasingly being used in the healthcare profession, particularly

for surgical operations. Compared to traditional surgery techniques, robotic surgery results in smaller incisions, greater accuracy, and shortened recovery time. Medical robots can also be used to transport blood from one place to another, prepare substances in a hazardous environment, diagnose illnesses, care for patients, and more. As such, it is likely that robots will replace certain medical personnel in the future, leading to social consequences that are not yet fully understood. This book presents the latest developments in medical robotics and innovative designs of the future. It also examines current medical robotic systems and applications.

Robotics for Pandemics Springer

This book addresses cutting-edge topics in robotics and related technologies for rehabilitation, covering basic concepts and providing the reader with the information they need to solve various practical problems. Intended as a reference guide to the application of robotics in rehabilitation, it covers e.g. musculoskeletal modelling, gait analysis, biomechanics, robotics modelling and simulation, sensors, wearable devices, and the Internet of Medical Things.

Soft Robots for Healthcare Applications IOS Press

The integration of robotic systems and artificial intelligence into healthcare settings is accelerating. As these technological developments interact socially with children, the elderly, or the disabled, they may raise concerns besides mere physical safety; concerns that include data protection, inappropriate use of emotions, invasion of privacy, autonomy suppression, decrease in human interaction, and cognitive safety. Given the novelty of these technologies and the uncertainties surrounding the impact of care automation, it is unclear how the law should respond. This book investigates the legal and regulatory implications of the growing use of personal care robots for healthcare purposes. It explores the interplay between various aspects of the law, including safety, data protection, responsibility, transparency, autonomy, and dignity; and it examines different robotic and AI systems, such as social therapy robots, physical assistant robots for rehabilitation, and wheeled passenger carriers. Highlighting specific problems and challenges in regulating complex cyber-physical systems in concrete healthcare applications, it critically assesses the adequacy of current industry standards and emerging regulatory initiatives for robots and AI. After analyzing the potential legal and

ethical issues associated with personal care robots, it concludes that the primarily principle-based approach of recent law and robotics studies is too abstract to be as effective as required by the personal care context. Instead, it recommends bridging the gap between general legal principles and their applicability in concrete robotic and AI technologies with a risk-based approach using impact assessments. As the first book to compile both legal and regulatory aspects of personal care robots, this book will be a valuable addition to the literature on robotics, artificial intelligence, human–robot interaction, law, and philosophy of technology.

Medical Robotics - New Achievements

IET

The field of robotic surgery is dynamic and fascinating. Surgical robots currently perform a wide range of procedures across a diverse group of specialties, and they have proven to exhibit a number of significant advantages over manual surgeries, including increased precision, less blood loss and pain, and shorter recovery times. In a rapidly changing world of technology, healthcare organizations may find it difficult to determine how to incorporate robotically-assisted surgical techniques into their systems.. Essentials of Robotic Surgery provides

comprehensive, detailed analysis of the current developments in robotically assisted surgery. Covered in the book are the most notable, current surgical applications, from coronary revascularization to prostate surgery, from the lungs and esophagus to the uterus, from sleep apnea to head and neck cancer.. Edited by Drs. Manak Sood and Stefan W. Leichtle, this book details the history of robotic surgical technologies and techniques, while looking ahead to the possibilities contained within future applications. Essentials of Robotic Surgery is an ideal resource for healthcare professionals who are considering whether robotic surgeries may be right for their organization.

Mobile Robotics in Healthcare Springer

The 24 chapters in this book provides a deep overview of robotics and the application of AI and IoT in robotics. It contains the exploration of AI and IoT based intelligent automation in robotics. The various algorithms and frameworks for robotics based on AI and IoT are presented, analyzed, and discussed. This book also provides insights on application of robotics in education, healthcare, defense and many other fields which utilize IoT and AI. It also introduces the idea of smart cities using robotics.

Robotics in Healthcare Humana

[After payment, write to & get a FREE-of-

charge, unprotected true-PDF from: Sales@ChineseStandard.net] This Standard specifies terms and definitions, classification of medical electrical equipment employing robotic technology or medical electrical system.

Design, Development, and Integration of Reliable Electronic Healthcare Platforms

Routledge

Advances in research have led to the use of robotics in a range of surgical applications. Medical robotics: Minimally invasive surgery provides authoritative coverage of the core principles, applications and future potential of this enabling technology. Beginning with an introduction to robot-assisted minimally invasive surgery (MIS), the core technologies of the field are discussed, including localization and tracking technologies for medical robotics. Key applications of robotics in laparoscopy, neurology, cardiovascular interventions, urology and orthopaedics are considered, as well as applications for ear, nose and throat (ENT) surgery, vitreoretinal surgery and natural orifice transluminal endoscopic surgery (NOTES). Microscale mobile robots for the circulatory system and mesoscale robots for the gastrointestinal tract are investigated, as is MRI-based navigation for in vivo magnetic microrobots. Finally, the book concludes with a

discussion of ethical issues related to the use of robotics in surgery. With its distinguished editor and international team of expert contributors, Medical robotics: Minimally invasive surgery is a comprehensive guide for all those working in the research, design, development and application of medical robotics for surgery. It also provides an authoritative introduction for academics and medical practitioners working in this field. Provides authoritative coverage of the core principles, applications and future potential of medical robotics Introduces robot-assisted minimally invasive surgery (MIS), including the core technologies of the field and localization and tracking technologies for medical robotics Considers key applications of robotics in laparoscopy, neurology, cardiovascular interventions, urology and orthopaedics

Advanced Technologies, Systems, and Applications II

Hachette UK

AI is poised to disrupt our work and our lives. We can harness these technologies rather than fall captive to them—but only through wise regulation. Too many CEOs tell a simple story about the future of work: if a machine can do what you do, your job will be automated. They envision everyone from doctors to soldiers rendered superfluous

by ever-more-powerful AI. They offer stark alternatives: make robots or be replaced by them. Another story is possible. In virtually every walk of life, robotic systems can make labor more valuable, not less. Frank Pasquale tells the story of nurses, teachers, designers, and others who partner with technologists, rather than meekly serving as data sources for their computerized replacements. This cooperation reveals the kind of technological advance that could bring us all better health care, education, and more, while maintaining meaningful work. These partnerships also show how law and regulation can promote prosperity for all, rather than a zero-sum race of humans against machines. How far should AI be entrusted to assume tasks once performed by humans? What is gained and lost when it does? What is the optimal mix of robotic and human interaction? New Laws of Robotics makes the case that policymakers must not allow corporations or engineers to answer these questions alone. The kind of automation we get—and who it benefits—will depend on myriad small decisions about how to develop AI. Pasquale proposes ways to democratize that decision making, rather than centralize it in unaccountable firms. Sober yet optimistic, New Laws of Robotics offers an inspiring vision of technological

progress, in which human capacities and expertise are the irreplaceable center of an inclusive economy. Emerging Technologies in Women's Health-Robotic Surgery in Gynecology Walter de Gruyter GmbH & Co KG This book presents a remarkable collection of chapters covering a wide range of topics in the areas of Computer Vision, both from theoretical and application perspectives. It gathers the proceedings of the Computer Vision Conference (CVC 2019), held in Las Vegas, USA from May 2 to 3, 2019. The conference attracted a total of 371 submissions from pioneering researchers, scientists, industrial engineers, and students all around the world. These submissions underwent a double-blind peer review process, after which 118 (including 7 poster papers) were selected for inclusion in these proceedings. The book's goal is to reflect the intellectual breadth and depth of current research on computer vision, from classical to intelligent scope. Accordingly, its respective chapters address state-of-the-art intelligent methods and techniques for solving real-world problems, while also outlining future research directions. Topic areas covered include Machine Vision and Learning, Data Science, Image Processing, Deep Learning, and Computer Vision Applications.

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