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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.

A computer beats the reigning human champion of Go, a game harder than chess. Another is composing classical music. Labs are creating life-forms from synthetic DNA. A doctor designs an artificial trachea, uses a 3D printer to produce it, and implants it and saves a child's life. Astonishing technological advances like these are arriving in increasing numbers. Scholar and

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entrepreneur Vivek Wadhwa uses this book to alert us to dozens of them and raise important questions about what they may mean for us. Breakthroughs such as personalized genomics, self-driving vehicles, drones, and artificial intelligence could make our lives healthier, safer, and easier. But the same technologies raise the specter of a frightening, alienating future: eugenics, a jobless economy, complete loss of privacy, and ever-worsening economic inequality. As Wadhwa puts it, our choices will determine if our future is Star Trek or Mad Max. Wadhwa offers us three questions to ask about every emerging technology: Does it have the potential to benefit everyone equally? What are its risks and rewards? And does it promote autonomy or dependence? Looking at a broad array of advances in this light, he emphasizes that the future is up to us to create—that even if our hands are not on the wheel, we will decide the driverless car's destination.

“A clear and crisply written account of machine intelligence, big data and the sharing economy. But McAfee and Brynjolfsson also wisely acknowledge the limitations of their futurology and avoid over-simplification.” —Financial Times In *The Second Machine Age*, Andrew McAfee and Erik Brynjolfsson predicted some of the far-reaching effects of digital technologies on our lives and businesses. Now they've written a guide to help readers make the most of our collective future. *Machine | Platform | Crowd* outlines the opportunities and challenges inherent in the science fiction technologies that have come to life in recent years, like self-driving cars and 3D printers, online platforms for renting outfits and scheduling workouts, or crowd-sourced medical research and financial instruments.

Staying true to his trademark journalistic approach, Andrés Oppenheimer takes his readers on yet another journey, this time across the globe, in a thought-provoking search to understand

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what the future holds for today's jobs in the foreseeable age of automation. The Robots Are Coming! centers around the issue of jobs and their future in the context of rapid automation and the growth of online products and services. As two of Oppenheimer's interviewees -- both experts in technology and economics from Oxford University -- indicate, forty-seven percent of existing jobs are at risk of becoming automated or rendered obsolete by other technological changes in the next twenty years. Oppenheimer examines current changes in several fields, including the food business, legal work, banking, and medicine, speaking with experts in the field, and citing articles and literature on automation in various areas of the workforce. He contrasts the perspectives of "techno-optimists" with those of "techno-negativists" and generally attempts to find a middle ground between an alarmist vision of the future, and one that is too uncritical. A self-described "cautious optimist", Oppenheimer believes that technology will not create massive unemployment, but rather will drastically change what work looks like.

Some researchers constructed a measure of the use of robots--commonly referred to as "robot intensity"--to estimate trends in robot exposure across more than 250 metropolitan areas and over time, finding that: During the Great Recession, robot intensity plummeted. But since 2009, robot intensity has sharply increased nationwide. They felt that robots may influence recession in possible. How are robots going to affect our jobs? Most analysis tends to be prospective in nature, and estimates of future impacts on employment vary widely, with some studies predicting that as many as 50 percent of all workers are at risk of losing their jobs to automation. Even less is understood about the actual impacts of robots on jobs, wages, and workers today. If there are many low skillful jobs e.g. cleaner, warehouse deliver, cooker,

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restaurant waiter etc., even high skillful jobs, e.g. accountant, lawyer, doctors etc. occupations are replaced by robotics. Then, our societies will increase unemployed people number. Consequently, great recession will be caused by robotic workers because when our societies have many people lose jobs, then many people loss income, then our consumption desires may be influenced to reduce. Consequently, many businesses may lose many customers. Low consumption desires may bring serious recession to any countries, due to robotic workers number increases to replace human workers in global societies. The reason is that new technologies of the period have enabled people to be very productive while working part-time. Businesses do not need large numbers of employees, so individuals can devote most of their waking hours to hobbies, volunteering, and community service. In conjunction with periodic work stints, they have time to pursue new skills and personal identities that are independent of their jobs. Developed countries may be on the verge of a similar transition. Robotics and machine learning have improved productivity and enhanced the economies of many nations. Artificial intelligence (AI) has advanced into finance, transportation, defense, and energy management. The internet of things (IoT) is facilitated by high-speed networks and remote sensors to connect people and businesses. In all of this, there is a possibility of a new robotic society that could improve the lives of many people, but it also encourage future businesses apply robotics to replace human workers to do many jobs in finance, transportation, defense and energy management, medical health, hotel, tourism, cinema, theatre etc. entertainment service fields. So, robotics may bring reducing cost benefits to businessmen, but they can also increase workers losing jobs number in our societies if future many businesses make decision to apply robotics to replace human workers to do any simple or complex jobs in global job

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market. A McKinsey Global Institute analysis of 750 jobs concluded that "45% of paid activities could be automated using 'currently demonstrated technologies' and . . . 60% of occupations could have 30% or more of their processes automated." [6] A more recent McKinsey report, "Jobs Lost, Jobs Gained," found that 30 percent of "work activities" could be automated by 2030 and up to 375 million workers worldwide could be affected by emerging technologies. Researchers at the Organization for Economic Cooperation and Development (OECD) focused on "tasks" as opposed to "jobs" and found fewer job losses. Using task-related data from 32 OECD countries, they estimated that 14 percent of jobs are highly automatable and another 32 have a significant risk of automation. Although their job loss estimates are below those of other experts, they concluded that "low qualified workers are likely to bear the brunt of the adjustment costs as the automatibility of their jobs is higher compared to highly qualified workers."

This state-of-the-art book focuses specifically on the current and emerging uses of robotics for knee and hip arthroplasty, with an expanding market anticipated, particularly as costs drop, data emerges and surgical efficiencies improve. It is divided into four main sections. Part one covers the background and basic principles of robotics in orthopedic surgery, discussing its history and evolution, current concepts and available technologies, perioperative protocols for recovery and pain management, economic considerations, and risks and complications. The second and third parts focus on the techniques themselves for the knee and hip respectively, including unicompartmental and bicompartamental knee arthroplasty, patellofemoral arthroplasty, and total knee and hip arthroplasty utilizing Navio, Mako, iThink, Omni and ROSA Knee robots. The final section presents the emerging use of robotics in spine surgery as well

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as for hospital process improvement. Presenting the most current techniques, technology and evidence, *Robotics in Knee and Hip Arthroplasty* will be a valuable resource for orthopedic surgeons, residents and fellows looking to implement and utilize these developing management strategies in their clinical practice.

Risk detection and cyber security play a vital role in the use and success of contemporary computing. By utilizing the latest technological advances, more effective prevention techniques can be developed to protect against cyber threats. *Detecting and Mitigating Robotic Cyber Security Risks* is an essential reference publication for the latest research on new methodologies and applications in the areas of robotic and digital security. Featuring extensive coverage on a broad range of topics, such as authentication techniques, cloud security, and mobile robotics, this book is ideally designed for students, researchers, scientists, and engineers seeking current research on methods, models, and implementations of optimized security in digital contexts.

Technology has become deeply integrated into modern society and various activities throughout everyday life. However, this increases the risk of vulnerabilities, such as hacking or system errors, among other online threats. *Cybersecurity Breaches and Issues Surrounding Online Threat Protection* is an essential reference source for the latest scholarly research on the various types of unauthorized access or damage to electronic data. Featuring extensive coverage across a range of relevant perspectives and topics, such as robotics, cloud computing, and electronic data diffusion, this publication is ideally designed for academicians, researchers, computer engineers, graduate students, and practitioners seeking current research on the threats that exist in the world of technology.

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This book analyses the legal, ethical and social aspects of using deep-learning AI robotic products. The collective effort of distinguished international researchers has been incorporated into one book suitable for the broader audience interested in the emerging scientific field of roboethics. The book has been edited by Prof. George Dekoulis, Aerospace Engineering Institute, Cyprus, expert on state-of-the-art implementations of robotic systems for unmanned spacecraft navigation and other aerospace applications. We hope this book will increase the sensitivity of all the community members involved with roboethics. The significance of incorporating all aspects of roboethics right at the beginning of the creation of a new deep-learning AI robot is emphasised and analysed throughout the book. AI robotic systems offer an unprecedented set of virtues to the society. However, the principles of roboethical design and operation of deep-learning AI robots must be strictly legislated, the manufacturers should apply the laws and the knowledge development of the AI robots should be closely monitored after sales. This will minimise the drawbacks of implementing such intelligent technological solutions. These devices are a representation of ourselves and form communities like us. Learning from them is also a way to improve ourselves.

Gynecologic laparoscopy has evolved into a major surgical tool used to treat a multitude of gynecologic indications. Laparoscopy is the most common surgical procedure performed by gynecologists today. This book catalogs the full spectrum of laparoscopic procedures in gynecology, oncology, and infertility treatment. The authors describe different techniques in minimally invasive surgery and review the evidence-based medical literature supporting these techniques. Included are sections on the management of complications during laparoscopy, ranging from vascular injury to bladder or bowel injury. It contains expanded chapters on

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laparoscopic anatomy, operative hysteroscopy and pelvic floor repair. The editors have pioneered some of the most important laparoscopic procedures used today. Their work has opened up the video laparoscopy field for surgeons worldwide. The contributors have extensive experience in laparoscopy and hysteroscopy, and many of them have established some of the surgical techniques discussed. High-quality color pictures supplement many of the presentations.

This book represents the contributions of the top researchers in the field of robotics, automation and control and will serve as a valuable tool for professionals in these interdisciplinary fields. It consists of 25 chapter that introduce both basic research and advanced developments covering the topics such as kinematics, dynamic analysis, accuracy, optimization design, modelling , simulation and control. Without a doubt, the book covers a great deal of recent research, and as such it works as a valuable source for researchers interested in the involved subjects.

It is now 20 years since thoracoscopic surgery first entered everyday hospital practice, revolutionizing surgery and offering major benefits to patients. The intervening years have witnessed rapid progress, with the development of a variety of specialized techniques and equipment. This superbly illustrated book provides authoritative and comprehensive descriptions of the various minimally invasive techniques that are currently employed in thoracic and cardiac surgery. A wide range of thoracoscopic procedures are explained and discussed, and detailed attention is also paid to robotic and robot-assisted surgical techniques. Throughout, the emphasis is on clear description of procedures and identification of practical aspects of relevance in surgical practice. The authors are some of the world's most

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experienced thoracic and cardiac surgeons, and many of them have contributed greatly to the exploration and development of the field.

Features The book provides a compressive overview of the fundamental skills underlying the mechanism and control of manipulators. Detailed chapter on Velocity Transformations, jacobian and Singularities. Trajectory Planning is developed using both joint space and Cartesian space methods. Dynamic Modeling is treated by Lagrange-Euler and Euler-Newton formulations; complex derivations are put in the appendix to ensure a smooth flow for the reader. A comprehensive chapter on Robotic Control covering control strategies like PD, PID, computed torque control, force and impedance control at an appropriate level. A METLAB tutorial on using the package for Robotics is included as an appendix. A full chapter on the industrial applications of robots. All important industrial robot configurations with varying degrees of freedom are covered in various chapters and solved examples. An elaborate chapter (Chapter 9) devoted to Robotic Sensors and Vision. Includes over 50 solved examples and more than 270 simple-to-complex end-of-chapter exercises. Appendix on the underlying maths – Linear Algebra, Moment of Inertia Tensor and Equations of Motion

The New York Times-bestselling guide to how automation is changing the economy, undermining work, and reshaping our lives Winner of Best Business Book of the Year awards from the Financial Times and from Forbes "Lucid, comprehensive, and unafraid...;an indispensable contribution to a long-running argument."--Los Angeles Times What are the jobs of the future? How many will there be? And who will have them? As technology continues to accelerate and machines begin taking care of themselves, fewer people will be necessary. Artificial intelligence is already well on its way to making "good jobs" obsolete: many

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paralegals, journalists, office workers, and even computer programmers are poised to be replaced by robots and smart software. As progress continues, blue and white collar jobs alike will evaporate, squeezing working- and middle-class families ever further. At the same time, households are under assault from exploding costs, especially from the two major industries-education and health care-that, so far, have not been transformed by information technology. The result could well be massive unemployment and inequality as well as the implosion of the consumer economy itself. The past solutions to technological disruption, especially more training and education, aren't going to work. We must decide, now, whether the future will see broad-based prosperity or catastrophic levels of inequality and economic insecurity. Rise of the Robots is essential reading to understand what accelerating technology means for our economic prospects-not to mention those of our children-as well as for society as a whole. The volume LNAI 12228 constitute the refereed proceedings of the 21th Annual Conference "Towards Autonomous Robotics," TAROS 20120, held in Nottingham, UK, in September 2020.* The 30 full papers and 11 short papers presented were carefully reviewed and selected from 63 submissions. The papers present and discuss significant findings and advances in autonomous robotics research and applications. They are organized in the following topical sections: soft and compliant robots; mobile robots; learning, mapping and planning; human-robot interaction; and robotic systems and applications. * The conference was held virtually due to the COVID-19 pandemic.

In this second, revised edition of Robotic Urology, leading robotic surgeons from around the world pool their knowledge to provide an updated manual that covers all the oncologic and reconstructive procedures in urologic surgery that are performed with robotic assistance. Each

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operation is described in detail, with careful explanation of the different surgical steps and numerous high-quality anatomic illustrations and color surgical photos. An additional feature is the inclusion of extensive references to the scientific literature. As well as offering excellent guidance on the application of robotic surgery in urology, the book will serve as an ideal reference work for all urologists and should contribute in supporting new robotic teams and further popularizing robotic surgery.

This book addresses knowledge gaps in RARP in 3 key sections: 1) Step-by-step approach including multiple technique options and innovations, 2) Patient selection, safety, outcomes, and 3) Preparing the patient for surgery. The order is more based upon knowledge priority rather than a chronologic sequence in which part 3 would go first. Part two allows more summary and commentary on evidence and part three allows some creative content that is otherwise hard to find in one place—medical evaluations, imaging, clinical trials, patient education, etc. This textbook emphasizes content for the advanced skills surgeon in that multiple techniques are presented as well as state of the art evidence. The learning curve is addressed and the authors clarify how this text is useful for learners. The caveat is that they should be careful in patient selection and stick with what their mentors are showing them. With experience, they can then branch out into the many techniques presented here. Robot-Assisted Radical Prostatectomy: Beyond the Learning Curve will also have cross-over appeal for surgical assistants, physician assistants, nurses, and anyone else involved in the surgical care of prostate cancer.

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This book examines the considerations, drawbacks, and advancements minimally invasive techniques have provided in the evaluation, management, and outcomes across a broad range of colorectal disease and procedures. For some readers of this book, a minimally invasive approach to colorectal disease may add a new dimension to the management of these patients. For others, it is the opportunity to learn helpful tips, specifics about a certain procedure, or to fine tune what has already become a routine part of their practice. Even if you have successfully overcome many of the technical challenges of minimally invasive surgery, the preoperative evaluation, perioperative decision-making, and management of postoperative complications can be demanding and consuming. Wherever you may be on this spectrum, *Robotic Approaches to Colorectal Surgery* is a useful resource to surgeons.

This book constitutes the refereed proceedings of the 4th International Conference on Interactive Collaborative Robotics, ICR 2019, held in Istanbul, Turkey, in August 2019. The 32 papers presented in this volume were carefully reviewed and selected from 46 submissions. They deal with challenges of human-robot interaction; robot control and behavior in social robotics and collaborative robotics; and applied robotic and cyber-physical systems.

"Digital technology will bring globalisation and robotics (globotics) to previously shielded professional and service sectors. Jobs will be displaced at the eruptive pace of digital technology while they will be replaced at a normal historical pace. The mismatch will

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produce a backlash - the globotics upheaval"--

Lung cancer continues to be the leading cause of cancer mortality worldwide among both men and women. Recent advances in prevention, screening and management in the past decade have led to significant improvements in survival and quality of life. Local treatments like minimally invasive surgery, radiotherapy, and image-guided ablation have contributed to improving the effectiveness and tolerability of potentially curative treatments in early-stage, locally advanced, and oligometastatic/oligoprogressive disease. Chemotherapy, targeted therapy, immunotherapy, and palliative local therapy options have expanded rapidly, with new regimens showing improved outcomes even for those with widely metastatic disease. This book comprehensively reviews the evidence that has driven personalized medicine, based on a variety of multidisciplinary perspectives by international lung cancer experts.

This book provides a holistic view of the key technologies that are expected to revolutionise military affairs and change the nature of warfare tactics and the existing concept of the 'battlefield' itself in the near future. It addresses five key technologies- near-space technology, robotics, directed energy weapons, nanotechnology and biotechnology-and explains why they are being considered for military applicability worldwide. It highlights how they would contribute to the future warfare tactics and defence mechanisms of various countries. In addition, it also discusses the possible

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military utilities of two other technologies-ambient intelligence and cognitive technology. Written in an easy-to-understand style, the book presents a social-scientific approach. It describes the nuances of technological development in a purely scientific manner and provides a social perspective to their relevance for future warfare and for issues such as disarmament and arms control, as well as their impact on the environment. The book begins with a focus on the researches going on in several developed countries in the last decade-some of them for nearly two decades now-and then narrows its focus on India and a few developing countries. It concludes with a few India-specific recommendations, which would help policy-makers and military leadership to methodically incorporate the recent technological developments in the future warfare and defence tactics of the country. Strategic Technologies for the Military: Breaking New Frontiers, as can be gauged from the title, will be immensely useful for students and academics working in the fields of defence and strategic studies, politics and international relations.

This updated volume provides a comprehensive guide to the recent developments of digital and intelligent technologies related to genitourinary surgery. New topics include the adaptation of simulators, training programs, standardized credentialing, evidence-based practice, as well as the economics of robotic surgery. The impact on public and global health is also covered. Robotics in Genitourinary Surgery aims to help surgeons and patients adopt the techniques and procedures discussed, and in turn educate and

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expand research activities within the field.

This book initiates the descriptions of the practical performance of different hysterectomies with conventional and robotically assisted laparoscopy, laparotomy and vaginal surgery. Laparoscopic hysterectomy has been out as an additional technique for hysterectomies for the last couple of decades. As the necessary light, augmentation and advanced skill has only been introduced into this already 200 year old surgical procedure within the last few decades by laparoscopy, the editors aim to look at the laparoscopic procedures followed by the traditional techniques of hysterectomy with laparotomy and vaginal surgery.

From the simple to the complex, *Complications of Urologic Surgery, 5th Edition*, by Drs. Samir S. Taneja and Ojas Shah, offers concise, to-the-point information on prevention and management strategies that help you provide the best patient care. Covering both office-based complications as well as common and uncommon surgical complications arising from open and minimally invasive urologic surgery, this updated, full-color volume is an invaluable resource for exam study or for convenient reference in everyday practice. Contains 14 new chapters including Management of Urine Leak, Urologic Surgery in the Pregnant Female, Complications of Gender Assignment Surgery, Urologic Surgery in the Previously Radiated Field, Complications of Robotic Pelvic Floor Reconstruction, and Complications of Robotic Cystectomy. Keeps you up to date with current preoperative management concerns including complications with effusion, hydrothorax, hemothorax, diaphragm injury, pneumonia, and air embolus. Features more than 180 superb new illustrations, graphs, and tables for easier

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understanding of complex concepts. Reviews new anticoagulant drugs and their risks and benefits. Provides thoroughly updated content on oncology, endourology, and pediatric surgeries – all areas experiencing tremendous changes since the previous edition.

Shows the science and science strategies behind robots that are used in high-risk situations.

Rise of the Robots Technology and the Threat of a Jobless Future Basic Books

This book is not only a compilation of the knowledge and experiences of the best robotic surgeons around the world, but it has also incorporated the recent advances and updates in Gynaecological surgery. It is designed to provide a detailed guide to common robotic Gynaecologic procedures for the purpose of helping novice surgeons in their transition to robotic surgery and seasoned robotic surgeons to refine their surgical technique and expand their repertoire of robotic procedures. The descriptive, step-by-step, text is complimented by figures, intraoperative photographs and videos detailing the nuances of each procedure.

Emphasis is placed on operative setup, instrument and equipment needs and surgical techniques for both the primary surgeon as well as the operative assistant. This volume will provide unique insights into robotic Gynaecologic surgery and reduce the learning curve of accomplishing these increasingly popular procedures.

This volume is an edition of the papers selected from the 13 International Conference on Advanced Robotics, ICAR 2007, held in Jeju, Korea, August 22-25, 2007, with the theme: “Viable Robotics Service to Human.” It is intended to deliver readers the most recent technical progress in robotics, in particular, toward the advancement of robotic service to human. To ensure its quality, this volume took only 28 papers out of the 214 papers accepted for publication for ICAR 2007. The selection was based mainly on the technical merit, but also

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took into consideration whether the subject represents a theme of current interest. For the final inclusion, authors of the selected papers were requested for another round of revision and expansion. In this volume, we organize the 28 contributions into three chapters. Chapter 1 covers Novel Mechanisms, Chapter 2 deals with perception guided navigation and manipulation, and Chapter 3 addresses human-robot interaction and intelligence. Chapters 1, 2 and 3 consist of 7, 13 and 8 contributions, respectively. For the sake of clarity, Chapter 2 is divided further into two parts with Part 1 for Perception Guided Navigation and Part 2 for Perception Guided Manipulation. Chapter 3 is also divided into two parts with Part 1 for Human- Robot Interaction and Part 2 for Intelligence. For the convenience of readers, a chapter summary is introduced as an overview in the beginning of each chapter. The chapter summaries were prepared by Dr. Munsang Kim for Chapter 1, Prof.

Looking for ways to handle the transition to a digital economy Robots, artificial intelligence, and driverless cars are no longer things of the distant future. They are with us today and will become increasingly common in coming years, along with virtual reality and digital personal assistants. As these tools advance deeper into everyday use, they raise the question—how will they transform society, the economy, and politics? If companies need fewer workers due to automation and robotics, what happens to those who once held those jobs and don't have the skills for new jobs? And since many social benefits are delivered through jobs, how are people outside the workforce for a lengthy period of time going to earn a living and get health care and social benefits? Looking past today's headlines, political scientist and cultural observer Darrell M. West argues that society needs to rethink the concept of jobs, reconfigure the social contract, move toward a system of lifetime learning, and develop a new kind of politics that can

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deal with economic dislocations. With the U.S. governance system in shambles because of political polarization and hyper-partisanship, dealing creatively with the transition to a fully digital economy will vex political leaders and complicate the adoption of remedies that could ease the transition pain. It is imperative that we make major adjustments in how we think about work and the social contract in order to prevent society from spiraling out of control. This book presents a number of proposals to help people deal with the transition from an industrial to a digital economy. We must broaden the concept of employment to include volunteering and parenting and pay greater attention to the opportunities for leisure time. New forms of identity will be possible when the "job" no longer defines people's sense of personal meaning, and they engage in a broader range of activities. Workers will need help throughout their lifetimes to acquire new skills and develop new job capabilities. Political reforms will be necessary to reduce polarization and restore civility so there can be open and healthy debate about where responsibility lies for economic well-being. This book is an important contribution to a discussion about tomorrow—one that needs to take place today.

The field of hernia repair, in general, has evolved over the last 25 years. The changes that have followed the introduction of this technique have continued and have even increased in the last few years. There is a need to inform the practicing general surgeon about these advances. This text will seek to present the most up to date and important considerations to date. The book will open with a brief history and evolution of the technology surrounding the repair of incisional and ventral hernias laparoscopically and include the introduction of the robotic technology. Prosthetic biomaterials are an integral part of the successful repair of hernias and a comprehensive presentation of these products will be presented. Preoperative preparation of

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the patient has now been recognized as a method to improve outcomes in these patients and will be addressed. Technical aspects of the repair of these hernias will then follow in an orderly fashion to include the general considerations of the methodology. The “best practices” of these methods will be presented with appropriate figures and illustrations. The management of difficult situations as well as expected outcomes will be discussed. It is the intent of this text that any surgeon interested in the use of the minimally invasive techniques to repair the incisional and ventral hernias of the abdominal wall will have this resource presenting current opinions and methods. The “thought leaders” in these methods will be the authors of these chapters. This title differs from the Springer related title Novitsky, Hernia Surgery. The Novinsky is more comprehensive at 530 pages. It contains many more illustrations and video. The LeBlanc focuses on Laparoscopic and Robotic Hernia surgery with an estimated page count of 300-350. The LeBlanc presents current opinions of the thought leaders. Therefore, the subtitle: Current Considerations.

Alexander’s Care of the Patient in Surgery is the most dependable source for comprehensive perioperative information. Well-known author and educator, Jane C. Rothrock, continues to provide step-by-step instructions for over 400 surgical procedures, including many minimally invasive methods, all backed by the latest research. More than 1,000 full-color illustrations and photos depict current techniques, as well as surgical anatomy and instrumentation. This edition adds cutting-edge information to reflect new concepts for both invasive and non-invasive surgical procedures, whether the location is in a hospital, outpatient clinic, or doctor’s office. The first edition of Robotic Surgery was written only a decade after the introduction of robotic technology. It was the first comprehensive robotic surgery reference and

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represented the early pioneering look ahead to the future of surgery. Building upon its success, this successor edition serves as a complete multi-specialty sourcebook for robotic surgery. It seeks to explore an in-depth look into surgical robotics and remote technologies leading to the goal of achieving the benefits of traditional surgery with the least disruption to the normal functions of the human body. Written by experts in the field, chapters cover the fundamental principles of robotic surgery and provide clear instruction on their clinical application and long term results. Most notably, one chapter on “The Blueprint for the Establishment of a Successful Robotic Surgery Program: Lessons from Admiral Hymen R. Rickover and the Nuclear Navy” outlines the many valuable lessons from the transformative change which was brought about by the introduction of nuclear technology into the conventional navy with Safety as the singular goal of the change process. Robotics represents a monumental triumph of surgical technology. Undoubtedly, the safety of the patient will be the ultimate determinant of its success. The second edition of Robotic Surgery aims to erase the artificial boundaries of specialization based on regional anatomy and serves as a comprehensive multispecialty reference for all robot surgeons. It allows them to contemplate crossing boundaries which are historically defined by traditional open surgery.

A New York Times technology columnist's timely, counterintuitive, and highly practical guide to success in the age of A.I. and automation. The machines are here. After decades of sci-fi doomsaying and marketing hype, advanced A.I. and automation

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technologies have leapt out of research labs and Silicon Valley engineering departments and into the center of our lives. Robots once primarily threatened blue-collar manufacturing jobs, but today's machines are being trained to do the work of lawyers, doctors, investment bankers, and other white-collar jobs previously considered safe from automation's reach. The world's biggest corporations are racing to automate jobs, and some experts predict that A.I could put millions of people out of work. Meanwhile, runaway algorithms have already changed the news we see, the politicians we elect, and the ways we interact with each other. But all is not lost. With a little effort, we can become futureproof. In *Futureproof: 9 Rules for Machine-Age Humans*, New York Times technology columnist Kevin Roose lays out an optimistic vision of how people can thrive in the machine age by rethinking their relationship with technology, and making themselves irreplaceably human. In nine pragmatic, accessible lessons, Roose draws on interviews with leading technologists, trips to the A.I. frontier, and centuries' worth of history to prepare readers to live, work, and thrive in the coming age of intelligent machines. He shares the secrets of people and organizations that have successfully survived technological change, including a nineteenth-century rope-maker and a Japanese auto worker, and explains how people, organizations, and communities can apply their lessons to safeguard their own futures. The lessons include: - Do work that is surprising, social, and scarce (the types of work machines can't do) - Break your phone addiction with the help of a rubber band - Work in an office - Treat A.I. like the

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office gorilla - Resist "hustle porn" and efficiency culture and do less, slower

Roose's examination of the future rejects the conventional wisdom that in order to compete with machines, we have to become more like them--hyper-efficient, data-driven, code-writing workhorses. Instead, he says, we should let machines be machines, and focus on doing the kinds of creative, inspiring, and meaningful work only humans can do. This book constitutes the refereed proceedings of the 19th Annual Conference on Towards Autonomous Robotics, TAROS 2018, held in Bristol, UK, in July 2018. The 38 full papers presented together with 14 short papers were carefully reviewed and selected from 68 submissions. The papers focus on presentation and discussion of the latest results and methods in autonomous robotics research and applications. The conference offers a friendly environment for robotics researchers and industry to take stock and plan future progress.

This new edition catalogs the full spectrum of laparoscopic and hysteroscopic procedures used in gynecology, gynecologic oncology and infertility surgery. Robotic-assisted laparoscopic urologic surgery is a major evolution in the field and has now become a major subspecialty. This issue of Urologic Clinics of North America aims to provide comprehensive, state-of-the-art information about the recent developments in the areas of Uro-Oncology, Reconstructive Urology, and Female Urology. Topics such as issue of training, evidence-based practice, the economics of robotic surgery, and the impact on public and global health are also covered. The contributors are truly

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pioneers and the best experts in the field.

This book focuses on the importance of human factors in the development of reliable and safe unmanned systems. It discusses current challenges such as how to improve perceptual and cognitive abilities of robots, develop suitable synthetic vision systems, cope with degraded reliability of unmanned systems, predict robotic behavior in case of a loss of communication, the vision for future soldier-robot teams, human-agent teaming, real-world implications for human-robot interaction, and approaches to standardize both display and control of technologies across unmanned systems. Based on the AHFE 2016 International Conference on Human Factors in Robots and Unmanned Systems, held on July 27-31, 2016, in Walt Disney World®, Florida, USA, this book is expected to foster new discussion and stimulate new ideas towards the development of more reliable, safer, and functional devices for carrying out automated and concurrent tasks.

How to educate the next generation of college students to invent, to create, and to discover—filling needs that even the most sophisticated robot cannot. Driverless cars are hitting the road, powered by artificial intelligence. Robots can climb stairs, open doors, win Jeopardy, analyze stocks, work in factories, find parking spaces, advise oncologists. In the past, automation was considered a threat to low-skilled labor. Now, many high-skilled functions, including interpreting medical images, doing legal research, and analyzing data, are within the skill sets of machines. How can higher

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education prepare students for their professional lives when professions themselves are disappearing? In *Robot-Proof*, Northeastern University president Joseph Aoun proposes a way to educate the next generation of college students to invent, to create, and to discover—to fill needs in society that even the most sophisticated artificial intelligence agent cannot. A “robot-proof” education, Aoun argues, is not concerned solely with topping up students' minds with high-octane facts. Rather, it calibrates them with a creative mindset and the mental elasticity to invent, discover, or create something valuable to society—a scientific proof, a hip-hop recording, a web comic, a cure for cancer. Aoun lays out the framework for a new discipline, humanics, which builds on our innate strengths and prepares students to compete in a labor market in which smart machines work alongside human professionals. The new literacies of Aoun's humanics are data literacy, technological literacy, and human literacy. Students will need data literacy to manage the flow of big data, and technological literacy to know how their machines work, but human literacy—the humanities, communication, and design—to function as a human being. Life-long learning opportunities will support their ability to adapt to change. The only certainty about the future is change. Higher education based on the new literacies of humanics can equip students for living and working through change.

The abilities that will prove most essential to our success are no longer the technical, classroom-taught left-brain skills that economic advances have demanded from

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workers in the past. Instead, our greatest advantage lies in what we humans are most powerfully driven to do for and with one another, arising from our deepest, most essentially human abilities: empathy, creativity, social sensitivity, storytelling, humor, building relationships, and expressing ourselves with greater power than logic can ever achieve. This is how we create durable value that is not easily replicated by technology because we're hardwired to want it from humans. These high-value skills create tremendous competitive advantage, more devoted customers, stronger cultures, breakthrough ideas, and more effective teams. And while many of us regard these abilities as innate traits - he's a real people person, she's naturally creative - they can all be developed. As technology advances, we shouldn't focus on beating computers at what they do, we'll lose that contest. Instead, we must develop our most essential human abilities and teach our kids to value not just technology but also the richness of interpersonal experience. They will be the most valuable people in our world because of it.

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