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Artificial Intelligence Stuart J. Russell 2010 Artificial intelligence: A Modern Approach, 3e, is ideal for one or two-semester, undergraduate or graduate-level courses in Artificial Intelligence. It is also a valuable resource for computer professionals, linguists, and cognitive scientists interested in artificial intelligence. The revision of this best-selling text offers the most comprehensive, up-to-date introduction to the theory and practice of artificial intelligence.

Stochastic Processes, Estimation, and Control George N. Saridis 1995-04-03 In this, the first introductory book on stochastic processes in twenty years, leading theoretician George Saridis provides a modern innovative approach that applies the most recent advances in probabilistic processes to such areas as communications and robotics technology. Stochastic Processes, Estimation, and Control: The Entropy Approach is designed as a text for graduate courses in dynamic programming and stochastic control, stochastic processes, or applied probability in the engineering or mathematical/computational science departments, and as a guide for the practicing engineer and researcher it offers a lucid discussion of parameter estimation based on least square techniques, an in-depth investigation of the estimation of the states of a stochastic linear and nonlinear dynamic system, and a modified derivation of the linear-quadratic Gaussian optimal control problem. Professor Saridis's presentation of estimation and control theory is thorough, but avoids the use of advanced mathematics. A new theory of approximation of the optimal solution for nonlinear stochastic systems is presented as a general engineering tool, and the whole area of stochastic processes, estimation, and control is recast using entropy as a measure.

Scientific and Technical Aerospace Reports 1995 Lists citations with abstracts for aerospace related reports obtained from world wide sources and announces documents that have recently been entered into the NASA Scientific and Technical Information Database.

AIAA Journal American Institute of Aeronautics and Astronautics 2007

Annual Workshop on Space Operations Automation and Robotics (SOAR ...). 1988

Robotics in Smart Manufacturing Pedro Neto 2013-06-12 This book constitutes the refereed proceedings of the International Workshop on Robotics in Smart Manufacturing, WRSM 2013, held in Porto, Portugal, in June 2013. The 20 revised full papers presented were carefully reviewed and selected from numerous submissions. The papers address issues such as robotic machining, off-line robot programming, robot calibration, new robotic hardware and software architectures, advanced robot teaching methods, intelligent warehouses, robot co-workers and application of robots in the textile industry.

Field and Service Robotics Luis Mejias 2014-07-15 FSR, the International Conference on Field and Service Robotics, is a robotics Symposium which has established over the past ten years the latest research and practical results towards the use of field and service robotics in the community with particular focus on proven technology. The first meeting was held in Canberra, Australia, in

1997. Since then the meeting has been held every two years in the pattern Asia, America, Europe. Field robots are non-factory robots, typically mobile, that operate in complex and dynamic environments; on the ground (of earth or planets), under the ground, underwater, in the air or in space. Service robots are those that work closely with humans to help them with their lives. This book presents the results of the ninth edition of Field and Service Robotics, FSR13, held in Brisbane, Australia on 9th-11th December 2013. The conference provided a forum for researchers, professionals and robot manufacturers to exchange up-to-date technical knowledge and experience. This book offers a collection of a broad range of topics including: Underwater Robots and Systems, Unmanned Aerial Vehicles technologies and applications, Agriculture, Space, Search and Rescue and Domestic Robotics, Robotic Vision, Mapping and Recognition.

Intelligent Decision Technologies Junzo Watada 2012-05-20 The Intelligent Decision Technologies (IDT) International Conference encourages an interchange of research on intelligent systems and intelligent technologies that enhance or improve decision making. The focus of IDT is interdisciplinary and includes research on all aspects of intelligent decision technologies, from fundamental development to real applications. IDT has the potential to expand their support of decision making in such areas as finance, accounting, marketing, healthcare, medical and diagnostic systems, military decisions, production and operation, networks, traffic management, crisis response, human-machine interfaces, financial and stock market monitoring and prediction, and robotics. Intelligent decision systems implement advances in intelligent agents, fuzzy logic, multi-agent systems, artificial neural networks, and genetic algorithms, among others. Emerging areas of active research include virtual decision environments, social networking, 3D human-machine interfaces, cognitive interfaces, collaborative systems, intelligent web mining, e-commerce, e-learning, e-business, bioinformatics, evolvable systems, virtual humans, and designer drugs. This volume contains papers from the Fourth KES International Symposium on Intelligent Decision Technologies (KES IDT'12), hosted by researchers in Nagoya University and other institutions in Japan. This book contains chapters based on papers selected from a large number of submissions for consideration for the conference from the international community. The volume represents the current leading thought in intelligent decision technologies.

Decision Theory Models for Applications in Artificial Intelligence: Concepts and Solutions Sucar, L. Enrique 2011-10-31 One of the goals of artificial intelligence (AI) is creating autonomous agents that must make decisions based on uncertain and incomplete information. The goal is to design rational agents that must take the best action given the information available and their goals. Decision Theory Models for Applications in Artificial Intelligence: Concepts and Solutions provides an introduction to different types of decision theory techniques, including MDPs, POMDPs, Influence Diagrams, and Reinforcement Learning, and illustrates their application in artificial intelligence. This book provides insights into the advantages and challenges of using decision theory models for developing intelligent systems.

Intelligent Components and Instruments for Control Applications 1994 Cs. Banyasz 2014-05-23 Advances in computer technology and sensor development have led to increasingly successful control operations. In order to maximize future potential it is vital for academics and practitioners in the field to have an international forum for discussion and evaluation of the latest developments. The IFAC Symposia on intelligent components and instruments provide this opportunity and the latest in the series gives rise to this invaluable publication which provides an authoritative assessment of the present state and future directions of these key technologies.

Virtual and Augmented Reality Applications in Manufacturing S.K. Ong 2013-04-17 Written by experts from the world's leading institutions in the field, this is the only book to cover virtual and augmented reality in manufacturing from a manufacturing perspective, rather than a computer science angle. It details applications of state-of-the-art technologies in real industrial situations.

Springer Handbook of Geographic Information Wolfgang Kresse 2012-02-21 Computer science provides a powerful tool that was virtually unknown three generations ago. Some of the classical fields of knowledge are geodesy (surveying), cartography, and geography. Electronics have

revolutionized geodetic methods. Cartography has faced the dominance of the computer that results in simplified cartographic products. All three fields make use of basic components such as the Internet and databases. The Springer Handbook of Geographic Information is organized in three parts, Basics, Geographic Information and Applications. Some parts of the basics belong to the larger field of computer science. However, the reader gets a comprehensive view on geographic information because the topics selected from computer science have a close relation to geographic information. The Springer Handbook of Geographic Information is written for scientists at universities and industry as well as advanced and PhD students.

Software Engineering and Formal Methods Peter Csaba Ölveczky 2019-09-09 This book constitutes the refereed proceedings of the 17th International Conference on Software Engineering and Formal Methods, SEFM 2019, held in Oslo, Norway, in September 2019. The 27 full papers presented were carefully reviewed and selected from 89 submissions. The papers cover a large variety of topics, including testing, formal verification, program analysis, runtime verification, malware and attack detection, and software development and evolution and address a wide range of systems, such as cyber-physical systems, UAVs, autonomous robots, and feature-oriented and operating systems. They are organized in the following topical sections: cooperative asynchronous systems; cyber-physical systems; feature-oriented and versioned systems; model-based testing; model inference; ontologies and machine learning; operating systems; program analysis; relating models and implementations; runtime verification; security; and verification.

Proceedings of the 8th International Probabilistic Workshop 2010

Monthly Catalogue, United States Public Documents 1995-02

Information Fusion in Signal and Image Processing Isabelle Bloch 2013-03-01 The area of information fusion has grown considerably during the last few years, leading to a rapid and impressive evolution. In such fast-moving times, it is important to take stock of the changes that have occurred. As such, this book offers an overview of the general principles and specificities of information fusion in signal and image processing, as well as covering the main numerical methods (probabilistic approaches, fuzzy sets and possibility theory and belief functions).

Energy Abstracts for Policy Analysis 1987

Prototyping of Robotic Systems: Applications of Design and Implementation Sobh, Tarek 2012-02-29 As a segment of the broader science of automation, robotics has achieved tremendous progress in recent decades due to the advances in supporting technologies such as computers, control systems, cameras and electronic vision, as well as micro and nanotechnology. Prototyping a design helps in determining system parameters, ranges, and in structuring an overall better system. Robotics is one of the industrial design fields in which prototyping is crucial for improved functionality. Prototyping of Robotic Systems: Applications of Design and Implementation provides a framework for conceptual, theoretical, and applied research in robotic prototyping and its applications. Covering the prototyping of various robotic systems including the complicated industrial robots, the tiny and delicate nanorobots, medical robots for disease diagnosis and treatment, as well as the simple robots for educational purposes, this book is a useful tool for those in the field of robotics prototyping and as a general reference tool for those in related fields.

Intelligent Robotics and Applications Honghai Liu 2010-11-10 The market demand for skills, knowledge and adaptability have positioned robotics to be an important field in both engineering and science. One of the most highly visible applications of robotics has been the robotic automation of many industrial tasks in factories. In the future, a new era will come in which we will see a greater success for robotics in non-industrial environments. In order to anticipate a wider deployment of intelligent and autonomous robots for tasks such as manufacturing, healthcare, entertainment, search and rescue, surveillance, exploration, and security missions, it is essential to push the frontier of robotics into a new dimension, one in which motion and intelligence play equally important roles. The 2010 International Conference on Intelligent Robotics and Applications (ICIRA 2010) was held in Shanghai, China, November 10–12, 2010. The theme of the conference was “Robotics Harmonizing Life,” a theme that reflects the ever-growing interest in

research, development and applications in the dynamic and exciting areas of intelligent robotics. These volumes of Springer's Lecture Notes in Artificial Intelligence and Lecture Notes in Computer Science contain 140 high-quality papers, which were selected at least for the papers in general sessions, with a 62% acceptance rate. Traditionally, ICIRA 2010 holds a series of plenary talks, and we were fortunate to have two such keynote speakers who shared their expertise with us in diverse topic areas spanning the range of intelligent robotics and application activities.

Springer Handbook of Robotics Bruno Siciliano 2016-07-27 The second edition of this handbook provides a state-of-the-art overview on the various aspects in the rapidly developing field of robotics. Reaching for the human frontier, robotics is vigorously engaged in the growing challenges of new emerging domains. Interacting, exploring, and working with humans, the new generation of robots will increasingly touch people and their lives. The credible prospect of practical robots among humans is the result of the scientific endeavour of a half a century of robotic developments that established robotics as a modern scientific discipline. The ongoing vibrant expansion and strong growth of the field during the last decade has fueled this second edition of the Springer Handbook of Robotics. The first edition of the handbook soon became a landmark in robotics publishing and won the American Association of Publishers PROSE Award for Excellence in Physical Sciences & Mathematics as well as the organization's Award for Engineering & Technology. The second edition of the handbook, edited by two internationally renowned scientists with the support of an outstanding team of seven part editors and more than 200 authors, continues to be an authoritative reference for robotics researchers, newcomers to the field, and scholars from related disciplines. The contents have been restructured to achieve four main objectives: the enlargement of foundational topics for robotics, the enlightenment of design of various types of robotic systems, the extension of the treatment on robots moving in the environment, and the enrichment of advanced robotics applications. Further to an extensive update, fifteen new chapters have been introduced on emerging topics, and a new generation of authors have joined the handbook's team. A novel addition to the second edition is a comprehensive collection of multimedia references to more than 700 videos, which bring valuable insight into the contents. The videos can be viewed directly augmented into the text with a smartphone or tablet using a unique and specially designed app. Springer Handbook of Robotics Multimedia Extension Portal: <http://handbookofrobotics.org/>

Second Annual Workshop on Space Operations Automation and Robotics (SOAR 1988) Sandy Griffin 1988

Intelligent Robotics and Applications Haibin Yu 2019-08-02 The volume set LNAI 11740 until LNAI 11745 constitutes the proceedings of the 12th International Conference on Intelligent Robotics and Applications, ICIRA 2019, held in Shenyang, China, in August 2019. The total of 378 full and 25 short papers presented in these proceedings was carefully reviewed and selected from 522 submissions. The papers are organized in topical sections as follows: Part I: collective and social robots; human biomechanics and human-centered robotics; robotics for cell manipulation and characterization; field robots; compliant mechanisms; robotic grasping and manipulation with incomplete information and strong disturbance; human-centered robotics; development of high-performance joint drive for robots; modular robots and other mechatronic systems; compliant manipulation learning and control for lightweight robot. Part II: power-assisted system and control; bio-inspired wall climbing robot; underwater acoustic and optical signal processing for environmental cognition; piezoelectric actuators and micro-nano manipulations; robot vision and scene understanding; visual and motional learning in robotics; signal processing and underwater bionic robots; soft locomotion robot; teleoperation robot; autonomous control of unmanned aircraft systems. Part III: marine bio-inspired robotics and soft robotics: materials, mechanisms, modelling, and control; robot intelligence technologies and system integration; continuum mechanisms and robots; unmanned underwater vehicles; intelligent robots for environment detection or fine manipulation; parallel robotics; human-robot collaboration; swarm intelligence and multi-robot cooperation; adaptive and learning control system; wearable and assistive devices and robots for

healthcare; nonlinear systems and control. Part IV: swarm intelligence unmanned system; computational intelligence inspired robot navigation and SLAM; fuzzy modelling for automation, control, and robotics; development of ultra-thin-film, flexible sensors, and tactile sensation; robotic technology for deep space exploration; wearable sensing based limb motor function rehabilitation; pattern recognition and machine learning; navigation/localization. Part V: robot legged locomotion; advanced measurement and machine vision system; man-machine interactions; fault detection, testing and diagnosis; estimation and identification; mobile robots and intelligent autonomous systems; robotic vision, recognition and reconstruction; robot mechanism and design. Part VI: robot motion analysis and planning; robot design, development and control; medical robot; robot intelligence, learning and linguistics; motion control; computer integrated manufacturing; robot cooperation; virtual and augmented reality; education in mechatronics engineering; robotic drilling and sampling technology; automotive systems; mechatronics in energy systems; human-robot interaction.

Technical Reports Awareness Circular : TRAC. 1988

Procurement Finance Bernardo Nicoletti 2018-12-24 This book presents a business model on how to structure the relationship between financial services and procurement. The need for new models is particularly important to support small and medium enterprises (SMEs) where there is an evident difficulty in accessing credit. Due to this context, innovative solutions must be introduced. The objective of this book is to determine how innovation can support the dynamic and volatile international context and the increasingly relevant function of procurement. It is becoming more and more important to take into account complex international transactions with notably long payment terms. Organizations need to manage the best way to handle the financial relationships and the risks related to credit provision and payments. This book presents an end-to-end support to procurement, including trade finance, supply chain finance, and related payments. In addition, the enterprises need to keep sufficient liquidity levels in the short and medium term. This is a constant challenge today, with the turbulence of financial markets and a continuing climate of economic uncertainty making it harder to obtain external funding. Businesses need to optimize the working capital. This can be done through the innovative concept of procurement finance, which allows SMEs to benefit by the new vision of collaborative procurement. This book provides several practical examples of advanced procurement finance solutions. It demonstrates how the use of process improvement and technology can help in overcoming the current financially difficult situation. In addition, based on the business model presented, the integrated approach to procurement finance allows sustainable solutions which will be of interest to academics, researchers, managers, and practitioners in both buyer and vendor companies, as well as in banks and other financial institutions.

Applied Mechanics Reviews 1948

Joyce in the Belly of the Big Truck; Workbook Joyce A. Cascio 2005-05

Assistive Technology and Artificial Intelligence Vibhu O. Mittal 1998-07-15 This book constitutes a carefully arranged selection of revised papers on assistive technology, first presented at related AAAI workshops between 1995 and 1998. The book is devoted to the advancement and use of AI stimulated technology that can help users extend their current range of cognitive and sensory abilities or overcome their motor disabilities. Among various issues in the interdisciplinary area of assistive technology, the papers address topics from natural language processing, planning, robotics, user interface design, computer vision, and learning.

Handbook of Research on Advancements in Robotics and Mechatronics Habib, Maki K. 2014-12-31 The field of mechatronics integrates modern engineering science and technologies with new ways of thinking, enhancing the design of products and manufacturing processes. This synergy enables the creation and evolution of new intelligent human-oriented machines. The Handbook of Research on Advancements in Robotics and Mechatronics presents new findings, practices, technological innovations, and theoretical perspectives on the the latest advancements in the field of mechanical engineering. This book is of great use to engineers and scientists, students,

researchers, and practitioners looking to develop autonomous and smart products and systems for meeting today's challenges.

Simultaneous Localization and Mapping for Mobile Robots: Introduction and Methods Fernández-Madrigal, Juan-Antonio 2012-09-30 As mobile robots become more common in general knowledge and practices, as opposed to simply in research labs, there is an increased need for the introduction and methods to Simultaneous Localization and Mapping (SLAM) and its techniques and concepts related to robotics. **Simultaneous Localization and Mapping for Mobile Robots: Introduction and Methods** investigates the complexities of the theory of probabilistic localization and mapping of mobile robots as well as providing the most current and concrete developments. This reference source aims to be useful for practitioners, graduate and postgraduate students, and active researchers alike.

Beyond Databases, Architectures and Structures. Towards Efficient Solutions for Data Analysis and Knowledge Representation Stanisław Kozielski 2017-05-16 This book constitutes the refereed proceedings of the 13th International Conference entitled **Beyond Databases, Architectures and Structures, BDAS 2017**, held in Ustroń, Poland, in May/June 2017. It consists of 44 carefully reviewed papers selected from 118 submissions. The papers are organized in topical sections, namely big data and cloud computing; artificial intelligence, data mining and knowledge discovery; architectures, structures and algorithms for efficient data processing; text mining, natural language processing, ontologies and semantic web; bioinformatics and biological data analysis; industrial applications; data mining tools, optimization and compression.

Robotics Research Makoto Kaneko 2010-11-07 The International Symposium of Robotics Research (ISRR) continues to be the premiere meeting of the International Foundation of Robotics Research (IFRR). The 13th International Symposium of Robotics Research took place November 26-29, 2007, in Hiroshima, Japan, and was organized by the two editors of this book. This volume brings a collection of a broad range of topics in robotics. The content of these contributions provides a wide coverage of the current state of robotics research: the advances and challenges in its theoretical foundation and technology basis, and the developments in its traditional and novel areas of applications. Historically, the proceedings of the ISRR have featured ground-breaking work of the highest caliber, which influenced generations to come. The present volume promises to be no exception. The collection of scientific articles in this volume provides new insights to important problems in robotics, written by some of the leaders in the field.

Energy Research Abstracts 1993

Monthly Catalog of United States Government Publications 1995

Robotics Research Paolo Dario 2005-08-29 ISRR, the "International Symposium on Robotics Research", is one of robotics' pioneering symposia, which has established some of the field's most fundamental and lasting contributions over the past two decades. This book presents the results of the eleventh edition of "Robotics Research" ISRR03, offering a broad range of topics in robotics. The contributions provide a wide coverage of the current state of robotics research: the advances and challenges in its theoretical foundation and technology basis, and the developments in its traditional and new emerging areas of applications. The diversity, novelty, and span of the work unfolding in these areas reveal the field's increased maturity and expanded scope, and define the state of the art of robotics and its future direction.

Probabilistic Graphical Models Daphne Koller 2009-07-31 A general framework for constructing and using probabilistic models of complex systems that would enable a computer to use available information for making decisions. Most tasks require a person or an automated system to reason—to reach conclusions based on available information. The framework of probabilistic graphical models, presented in this book, provides a general approach for this task. The approach is model-based, allowing interpretable models to be constructed and then manipulated by reasoning algorithms. These models can also be learned automatically from data, allowing the approach to be used in cases where manually constructing a model is difficult or even impossible. Because uncertainty is an inescapable aspect of most real-world applications, the book focuses on

probabilistic models, which make the uncertainty explicit and provide models that are more faithful to reality. Probabilistic Graphical Models discusses a variety of models, spanning Bayesian networks, undirected Markov networks, discrete and continuous models, and extensions to deal with dynamical systems and relational data. For each class of models, the text describes the three fundamental cornerstones: representation, inference, and learning, presenting both basic concepts and advanced techniques. Finally, the book considers the use of the proposed framework for causal reasoning and decision making under uncertainty. The main text in each chapter provides the detailed technical development of the key ideas. Most chapters also include boxes with additional material: skill boxes, which describe techniques; case study boxes, which discuss empirical cases related to the approach described in the text, including applications in computer vision, robotics, natural language understanding, and computational biology; and concept boxes, which present significant concepts drawn from the material in the chapter. Instructors (and readers) can group chapters in various combinations, from core topics to more technically advanced material, to suit their particular needs.

Robot Intelligence Technology and Applications 2 Jong-Hwan Kim 2014-03-21 We are facing a new technological challenge on how to store and retrieve knowledge and manipulate intelligence for autonomous services by intelligent systems which should be capable of carrying out real world tasks autonomously. To address this issue, robot researchers have been developing intelligence technology (InT) for “robots that think” which is in the focus of this book. The book covers all aspects of intelligence from perception at sensor level and reasoning at cognitive level to behavior planning at execution level for each low level segment of the machine. It also presents the technologies for cognitive reasoning, social interaction with humans, behavior generation, ability to cooperate with other robots, ambience awareness and an artificial genome that can be passed on to other robots. These technologies are to materialize cognitive intelligence, social intelligence, behavioral intelligence, collective intelligence, ambient intelligence and genetic intelligence. The book aims at serving researchers and practitioners with a timely dissemination of the recent progress on robot intelligence technology and its applications, based on a collection of papers presented at the at the 2nd International Conference on Robot Intelligence Technology and Applications (RiTA), held in Denver, USA, December 18-20, 2013.

Robotic Systems Ashish Dutta 2012-02-03 This book brings together some of the latest research in robot applications, control, modeling, sensors and algorithms. Consisting of three main sections, the first section of the book has a focus on robotic surgery, rehabilitation, self-assembly, while the second section offers an insight into the area of control with discussions on exoskeleton control and robot learning among others. The third section is on vision and ultrasonic sensors which is followed by a series of chapters which include a focus on the programming of intelligent service robots and systems adaptations.

Intelligent Autonomous Systems 14 Weidong Chen 2017-02-10 This book describes the latest research advances, innovations, and visions in the field of robotics as presented by leading researchers, engineers, and practitioners from around the world at the 14th International Conference on Intelligent Autonomous Systems (IAS-14), held in Shanghai, China in July 2016. The contributions amply demonstrate that robots, machines and systems are rapidly achieving intelligence and autonomy, attaining more and more capabilities such as mobility and manipulation, sensing and perception, reasoning, and decision-making. They cover a wide range of research results and applications, and particular attention is paid to the emerging role of autonomous robots and intelligent systems in industrial production, which reflects their maturity and robustness. The contributions were selected by means of a rigorous peer-review process and highlight many exciting and visionary ideas that will further galvanize the research community and spur novel research directions. The series of biennial IAS conferences, which began in 1986, represents a premiere event in the field of robotics.

Control Systems Design of Bio-Robotics and Bio-Mechatronics with Advanced Applications Ahmad Taher Azar 2019-11-30 Control Systems Design of Bio-Robotics and Bio-Mechatronics with

Advanced Applications delivers essential and advanced bioengineering information on the application of control and robotics technologies in the life sciences. Judging by what we have witnessed so far, this exciting field of control systems and robotics in bioengineering is likely to produce revolutionary breakthroughs over the next decade. While this book is intended for senior undergraduate or graduate students in both control engineering and biomedical engineering programs, it will also appeal to medical researchers and practitioners who want to enhance their quantitative understanding of physiological processes. Focuses on the engineering and scientific principles underlying the extraordinary performance of biomedical robotics and bio-mechatronics Demonstrates the application of principles for designing corresponding algorithms Presents the latest innovative approaches to medical diagnostics and procedures, as well as clinical rehabilitation from the point-of-view of dynamic modeling, system analysis and control

Advances in Design Optimization H. Adeli 2002-09-11 This book summarizes advances in a number of fundamental areas of optimization with application in engineering design. The selection of the 'best' or 'optimum' design has long been a major concern of designers and in recent years interest has grown in applying mathematical optimization techniques to design of large engineering and industrial systems, and in using the computer-aided design packages with optimization capabilities which are now available.