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Advances on Theory and Practice of Robots and Manipulators Marco Ceccarelli 2014-06-02 This proceedings volume contains papers that have been selected after review for oral presentation at ROMANSY 2014, the 20th CISM-IFToMM Symposium on Theory and Practice of Robots and Manipulators. These papers cover advances on several aspects of the wide field of Robotics as concerning Theory and Practice of Robots and Manipulators. ROMANSY 2014 is the twentieth event in a series that started in 1973 as one of the first conference activities in the world on Robotics. The first event was held at CISM (International Centre for Mechanical Science) in Udine, Italy on 5-8 September 1973. It was also the first topic conference of IFToMM (International Federation for the Promotion of Mechanism and Machine Science) and it was directed not only to the IFToMM community. Proceedings volumes of ROMANSY have been always published to be available, also after the symposium, to a large public of scholars and designers with the aim to give an overview of new advances and trends in the theory, design and practice of robots. This proceedings volume, like previous ones of the series, contains contributions with achievements covering many fields of Robotics as Theory and Practice of Robots and Manipulators that can be an inspiration for future developments.
Advanced Studies of Flexible Robotic Manipulators
*STAR* 1988-11
New Trends in Robot Control Jawhar Ghommam 2020-02-13 This book presents solutions to control problems in a number of robotic systems and provides a wealth of worked-out examples with full analytical and numerical details, graphically illustrated to aid in reader comprehension. It also presents relevant studies on applications of robotic system control approaches, as well as the latest findings from interdisciplinary theoretical studies. Featuring chapters on advanced control (fuzzy, neural, backstepping, sliding mode, adaptive, predictive, diagnosis, and fault-tolerant control), the book will equip readers to easily tailor the techniques to their own applications. Accordingly, it offers a valuable resource for researchers, engineers, and students in the field of robotic systems.
Publications of the National Institute of Standards and Technology ... Catalog National Institute of Standards and Technology (U.S.) 1991
Serial and Parallel Robot Manipulators Serdar Küçük 2012-03-30 The robotics is an important part of modern engineering and is related to a group of branches such as electric
Advanced Studies of Flexible Robotic Manipulators Fei-Yue Wang 2003 Flexible robotic manipulators pose various challenges in research as compared to rigid robotic manipulators, ranging from system design, structural optimization, and construction to modeling, sensing, and control. Although significant progress has been made in many aspects over the last one-and-a-half decades, many issues are not resolved yet, and simple, effective, and reliable controls of flexible manipulators still remain an open quest. Clearly, further efforts and results in this area will contribute significantly to robotics (particularly automation) as well as its application and education in general control engineering. To accelerate this process, the leading experts in this important area present in this book the state of the art in advanced studies of the design, modeling, control and applications of flexible manipulators. Sample Chapter(s). Chapter 1: Flexible-link Manipulators: Modeling, Nonlinear Control and Observer (235 KB). Contents: Flexible-Link Manipulators: Modeling, Nonlinear Control and Observer (M A Arteaga & B Siciliano); Energy-Based Control of Flexible Link Robots (S S Ge); Trajectory Planning and Compliant Control for Two Manipulators to Deform Flexible Materials (O Al-Jarrah et al.); Force Control of Flexible Manipulators (F Matsuno); Experimental Study on the Control of Flexible Link Robots (D Wang); Sensor Output Feedback Control of Flexible Robot Arms (Z-H Luo); On GA Based Robust Control of Flexible Manipulators (Z-Q Xiao & L-L Cui); Analysis of Poles and Zeros for Tapered Link Designs (D L Girvin & W J Book); Optimum Shape Design of Flexible Manipulators with Tip Loads (J L Russell & Y-Q Gao); Mechatronic Design of Flexible Manipulators (P-X Zhou & Z-Q Xiao); A Comprehensive Study of Dynamic Behaviors of Flexible Robotic Links: Modeling and Analysis (Y-Q Gao & F-Y Wang). Readership: Researchers, lecturers and graduate students in robotics & automated systems, electrical & electronic engineering, and industrial engineering
Intelligent Vehicles and Materials Transportation in the Manufacturing Sector: Emerging Research and Opportunities Bandyopadhyay, Susmita 2017-07-12 The manufacturing industry has been optimized in recent years due to the rise of new technologies. These advances have paved the way for the development of intelligent vehicles. Intelligent Vehicles and Materials Transportation in the Manufacturing Sector: Emerging Research and Opportunities is a pivotal source of scholarly research on the various aspects of manufacturing vehicles with intelligent technology components. Including a range of perspectives on topics such as material handling, automated guided vehicles, and industrial robots, this book is ideally designed for engineers, academics, professionals, and practitioners actively involved in the manufacturing sector.
Catalog of National Bureau of Standards Publications, 1966-1976: pt. 1-2. Citations and abstracts. v. 2. pt. 1-2. Key word index United States. National Bureau of Standards. Technical Information and Publications Division 1978
CAD/CAM, Robotics and Factories of the Future Dipak Kumar Mandal 2016-01-05 This volume is based on the proceedings of the 28th International Conference on CAD/CAM, Robotics and Factories of the Future. This book specially focuses on the positive changes made in the field of robotics, CAD/CAM and future outlook for emerging manufacturing units. Some of the important topics discussed in the conference are product development and sustainability, modeling and simulation, automation, robotics and handling systems, supply chain management and logistics, advanced manufacturing processes, human aspects in engineering activities, emerging scenarios in engineering education and training. The contents of this set of proceedings will prove useful to both researchers and practitioners.
Robot Manipulators Agustin Jimenez 2010-03-01 This book presents the most recent research advances in robot manipulators. It offers a complete survey to the kinematic and dynamic modelling, simulation, computer vision, software engineering, optimization and design of control algorithms applied for robotic systems. It is devoted for a large scale of applications, such as manufacturing, manipulation, medicine and automation. Several control methods are included such as optimal, adaptive, robust, force, fuzzy and neural network control strategies. The trajectory planning is discussed in details for point-to-point and path motions control. The results in obtained in this book are expected to be of great interest for researchers, engineers, scientists and students, in engineering studies and industrial sectors related to robot modelling, design, control, and application. The book also details theoretical, mathematical and practical requirements for mathematicians and control engineers. It surveys recent techniques in modelling, computer simulation and implementation of advanced and intelligent controllers.
Adaptive Control for Robotic Manipulators Dan Zhang 2017-02-03 The robotic mechanism and its controller make a complete system. As the robotic mechanism is reconfigured, the control system has to be adapted accordingly. The need for the reconfiguration usually arises from the changing functional requirements. This book will focus on the adaptive control of robotic manipulators to address the changed conditions. The aim of the book is to summarise and introduce the state-of-the-art technologies in the field of adaptive control of robotic manipulators in order to improve the methodologies on the adaptive control of robotic manipulators. Advances made in the past decades are described in the book, including adaptive control theories and design, and application of adaptive control to robotic manipulators.
Indexes and Bibliography I. Aleksander 2013-03-09
*Robot Manipulators* Etienne Dombre 2013-03-01 This book presents the most recent research results on modeling andcontrol of robot manipulators. Chapter 1 gives unified tools to derive direct andinverse geometric, kinematic and dynamic models of serial robotsand addresses the issue of identification of the geometric anddynamic parameters of these models. Chapter 2 describes the main features of serial robots,the different architectures and the methods used to obtain directand inverse geometric, kinematic and dynamic models, paying specialattention to singularity analysis. Chapter 3 introduces global and local tools forperformance analysis of serial robots. Chapter 4 presents an original optimization techniquefor point-to-point trajectory generation accounting for robotdynamics. Chapter 5 presents standard control techniques in thejoint space and task space for free motion (PID, computed torque,adaptive dynamic control and variable structure control) andconstrained motion (compliant force-position control). In Chapter 6, the concept of vision-based control isdeveloped and Chapter 7 is devoted to specific issue ofrobots with flexible links. Efficient recursive Newton-Euleralgorithms for both inverse and direct modeling are presented, aswell as control methods ensuring position setting and vibrationdamping.
Nonlinear Control of Vehicles and Robots Béla Lantos 2010-12-01 Nonlinear Control of Vehicles and Robots develops a unified approach to the dynamic modeling of robots in terrestrial, aerial and marine environments. The main classes of nonlinear systems and stability methods are summarized and basic nonlinear control methods, useful in manipulator and vehicle control, are presented. Formation control of ground robots and ships is discussed. The book also deals with the modeling and control of robotic systems in the presence of non-smooth nonlinearities. Robust adaptive tracking control of robotic systems with unknown payload and friction in the presence of uncertainties is treated. Theoretical and practical aspects of the control algorithms under discussion are detailed. Examples are included throughout the book allowing the reader to apply the control and modeling techniques in their own research and development work. Some of these examples demonstrate state estimation based on the use of advanced sensors as part of the control system.
Scientific and Technical Aerospace Reports 1990
Advances in Swarm and Computational Intelligence Ying Tan 2015-06-01 This book and its companion volumes, LNCS volumes 9140, 9141 and 9142, constitute the proceedings of the 6th International Conference on Swarm Intelligence, ICSI 2015 held in conjunction with the Second BRICS Congress on Computational Intelligence, CCI 2015, held in Beijing, China in June 2015. The 161 revised full papers presented were carefully reviewed and selected from 294 submissions. The papers are organized in 28 cohesive sections covering all major topics of swarm intelligence and computational intelligence research and development, such as novel swarm-based optimization algorithms and applications; particle swarm opt8imization; ant colony optimization; artificial bee colony algorithms; evolutionary and genetic algorithms; differential evolution; brain storm optimization algorithm; biogeography based optimization; cuckoo search; hybrid methods; multi-objective optimization; multi-agent systems and swarm robotics; Neural networks and fuzzy methods; data mining approaches; information security; automation control; combinatorial optimization algorithms; scheduling and path planning; machine learning; blind sources separation; swarm interaction behavior; parameters and system optimization; neural networks; evolutionary and genetic algorithms; fuzzy systems; forecasting algorithms; classification; tracking analysis; simulation; image and texture analysis; dimension reduction; system optimization; segmentation and detection system; machine translation; virtual management and disaster analysis.
Fractional Order Control and Synchronization of Chaotic Systems Ahmad Taher Azar 2017-02-27 The book reports on the latest advances in and applications of fractional order control and synchronization of chaotic systems, explaining the concepts involved in a clear, matter-of-fact style. It consists of 30 original contributions written by eminent scientists and active researchers in the field that address theories, methods and applications in a number of research areas related to fractional order control and synchronization of chaotic systems, such as: fractional chaotic systems, hyperchaotic systems, complex systems, fractional order discrete chaotic systems, chaos control, chaos synchronization, jerk circuits, fractional chaotic systems with hidden attractors, neural network, fuzzy logic controllers, behavioral modeling, robust and adaptive control, sliding mode control, different types of synchronization, circuit realization of chaotic systems, etc. In addition to providing readers extensive information on chaos fundamentals, fractional calculus, fractional differential equations, fractional control and stability, the book also discusses key applications of fractional order chaotic systems, as well as multidisciplinary solutions developed via control modeling. As such, it offers the perfect reference guide for graduate students, researchers and practitioners in the areas of fractional order control systems and fractional order chaotic systems.
Dynamics of Parallel Robots Sébastien Briot 2015-06-22 This book starts with a short recapitulation on basic concepts, common to any types of robots (serial, tree structure, parallel, etc.), that are also necessary for computation of the dynamic models of parallel robots. Then, as dynamics requires the use of geometry and kinematics, the general equations of geometric and kinematic models of parallel robots are given. After, it is explained that parallel robot dynamic models can be obtained by decomposing the real robot into two virtual systems: a tree-structure robot (equivalent to the robot legs for which all joints would be actuated) plus a free body corresponding to the platform. Thus, the dynamics of rigid tree-structure robots is analyzed and algorithms to obtain their dynamic models in the most compact form are given. The dynamic model of the real rigid parallel robot is obtained by closing the loops through the use of the Lagrange multipliers. The problem of the dynamic model degeneracy near singularities is treated and optimal trajectory planning for crossing singularities is proposed. Lastly, the approach is extended to flexible parallel robots and the algorithms for computing their symbolic model in the most compact form are given. All theoretical developments are validated through experiments.
Robot Motion and Control 2011 Krzysztof Kozłowski 2012-01-13 Robot Motion Control 2011 presents very recent results in robot motion and control. Forty short papers have been chosen from those presented at the sixth International Workshop on Robot Motion and Control held in Poland in June 2011. The authors of these papers have been carefully selected and represent leading institutions in this field. The following recent developments are discussed: Design of trajectory planning schemes for holonomic and nonholonomic systems with optimization of energy, torque limitations and other factors. New control algorithms for industrial robots, nonholonomic systems and legged robots. Different applications of robotic systems in industry and everyday life, like medicine, education, entertainment and others. Multiagent systems consisting of mobile and flying robots with their applications The book is suitable for graduate students of automation and

robotics, informatics and management, mechatronics, electronics and production engineering systems as well as scientists and researchers working in these fields.

*Automation and Control Trends* Pedro Ponce 2016-10-12 This book is an overview of the different paths automation and control engineering have taken lately, from a modern point of view. Built up with example chapters, this book provides some insight into the use of artificial intelligence and control theory on manufacturing, comfort analysis, reliability of modern digital systems, and the use of unusual reference and feedback signals as those coming from the brain. Nonetheless, some chapters are also devoted to a more traditional point of view of control theory, addressing complex problems where human intervention must be limited. Overall, this book is an effort to show that modern automation and control engineering are comprised by many diverse areas, which should interact in order to provide a complete result. In this way, as the systems become more complex and the control objectives more subjective, both, formal analytic and intelligent approaches, should be seen as complementary tools, not unrelated competitors. This books aim is precisely that of showing how broad and diverse the control objectives have become and how the abilities of the control engineer should be extended.

*Informatics in Control, Automation and Robotics* Oleg Gusikhin 2019-04-18 The book focuses the latest endeavours relating researches and developments conducted in fields of Control, Robotics and Automation. Through more than twenty revised and extended articles, the present book aims to provide the most up-to-date state-of-art of the aforementioned fields allowing researcher, PhD students and engineers not only updating their knowledge but also benefiting from the source of inspiration that represents the set of selected articles of the book. The deliberate intention of editors to cover as well theoretical facets of those fields as their practical accomplishments and implementations offers the benefit of gathering in a same volume a factual and well-balanced prospect of nowadays research in those topics. A special attention toward "Intelligent Robots and Control" may characterize another benefit of this book.

Applied Mechanics Reviews 1989

*Flexible Robot Manipulators* M.O. Tokhi 2017-06-28 Industrial automation is driving the development of robot manipulators in various applications, with much of the research effort focussed on flexible manipulators and their advantages compared to their rigid counterparts. This book reports recent advances and new developments in the analysis and control of these robot manipulators. After a general overview of flexible manipulators the book introduces a range of modelling and simulation techniques based on the Lagrange equation formulation, parametric approaches based on linear input/output models using system identification techniques, neuro-modelling approaches, and numerical techniques for dynamic characterisation using finite difference and finite element techniques. Control techniques are then discussed, including a range of open-loop and closed-loop control techniques based on classical and modern control methods including neuro and iterative control, and a range of soft-computing control techniques based on fuzzy logic, neural networks, and evolutionary and bio-inspired optimisation paradigms. Finally the book presents SCEFMAS, a software environment for analysis, design, simulation and control of flexible manipulators. Flexible Robot Manipulators is essential reading for advanced students of robotics, mechatronics and control engineering and will serve as a source of reference for research in areas of modelling, simulation and control of dynamic flexible structures in general and, specifically, of flexible robotic manipulators.

*Advances in Robot Kinematics* Jadran Lenarčič 2014-05-19 The topics addressed in this book cover the whole range of kinematic analysis, synthesis and design and consider robotic systems possessing serial, parallel and cable driven mechanisms. The robotic systems range from being less than fully mobile to kinematically redundant to over constrained. The fifty-six contributions report the latest results in robot kinematics with emphasis on emerging areas such as design and control of humanoids or humanoid subsystems. The book is of interest to researchers wanting to bring their knowledge up to date regarding modern topics in one of the basic disciplines in robotics, which relates to the essential property of robots, the motion of mechanisms.

*Adaptive Robot Contact Planning and Control* Zafer Abdul-Rahman Wazzan 2000 This thesis relies on modeling, control and dynamic analysis of robotic manipulators. The objective is to introduce a way to control an unknown robot manipulator utilizing an adaptive, Lyapunov based controller. Relying on this controller, we are able to respecify the desired task in the joint space despite of parameters uncertainties.--Robot manipulators can be reprogrammed to perform multi-task performance, where parameters can change according to the given task. Generating the desired trajectories in the joint space of the manipulator that are essential to any kind of controller is unachievable in these very realistic settings.

*Global Product Development* Alain Bernard 2011-05-05 This book of proceedings is the synthesis of all the papers, including keynotes presented during the 20th CIRP Design conference. The book is structured with respect to several topics, in fact the main topics that serve at structuring the program. For each of them, high quality papers are provided. The main topic of the conference was Global Product Development. This includes technical, organizational, informational, theoretical, environmental, performance evaluation, knowledge management, and collaborative aspects. Special sessions were related to innovation, in particular extraction of knowledge from patents.

Interactive Collaborative Robotics Andrey Ronzhin 2020-09-30 This book constitutes the proceedings of the 5th International Conference on Interactive Collaborative Robotics, ICR 2020, held in St. Petersburg, Russia, in October 2020. The 31 papers presented were carefully reviewed and selected from 62 submissions. Challenges of human-robot interaction, robot control and behavior in social robotics and collaborative robotics, as well as applied robotic and cyber-physical systems are mainly discussed in the papers.

*Fractional Modeling and Controller Design of Robotic Manipulators* Abhaya Pal Singh 2020-10-15 This book at hand is an appropriate addition to the field of fractional calculus applied to control systems. If an engineer or a researcher wishes to delve into fractional-order systems, then this book has many collections of such systems to work upon, and this book also tells the reader about how one can convert an integer-order system into an appropriate fractional-order one through an efficient and simple algorithm. If the reader further wants to explore the controller design for the fractional-order systems, then for them, this book provides a variety of controller design strategies. The use of fractional-order derivatives and integrals in control theory leads to better results than integer-order approaches and hence provides solid motivation for further development of control theory. Fractional-order models are more useful than the integer-order models when accuracy is of paramount importance. Real-time experimental validation of controller design strategies for the fractional-order plants is available. This book is beneficial to the academic institutes for postgraduate and advanced research-level that need a specific textbook on fractional control and its applications in srobotic manipulators. The book is also a valuable teaching and learning resource for undergraduate and postgraduate students.

*Ground and Air Robotic Manipulation Systems in Agriculture* Andrey Ronzhin 2021-09-10 Problems of joint application of heterogeneous ground and air robotic means while performing the agricultural technological tasks that require physical interaction with agricultural products and the environment are discussed in the book. Proposed solutions for the exchange of energy and physical resources of unmanned aerial vehicles on ground service platforms, automation of the process of collecting agricultural products and ensuring the stability of the air manipulation system at physical interaction with a ground object are important for the transport and agricultural industry robotization. The book addresses the researchers investigating interdisciplinary issues of agricultural production robotization, problems of information, physical and energy interaction of ground and air robots; recommended to postgraduates and students studying "Mechatronics and robotics" and "Technologies, mechanization and power equipment in agriculture, forestry and fisheries."

*Modelling and Simulation of Robot Manipulators* Albert Y Zomaya 1993-01-29 This book aims to describe how parallel computer architectures can be used to enhance the performance of robots, and their great impact on future generations of robots. It provides an in-depth, consistent and rigorous treatment of the topic. A clear definition of tools with results is given which can be applied to parallel processing for robot kinematics and dynamics. Another advantageous feature is that the algorithms presented have been implemented using a parallel processing system, unlike many publications in the field which have presented results in only theoretical terms. This book also includes "benchmark" results that can be used for the development of future work, or can serve as a basis for comparison with other work. In addition, it surveys useful material to aid readers in pursuing further research. Contents:IntroductionThe Parallel Processing ApproachRobot KinematicsComputing the JacobianInverse Jacobian ComputationRobot DynamicsParallel Computations of Robot DynamicsTuning of Robot DynamicsConcluding RemarksAppendix AAppendix BAppendix CAppendix D Readership: Engineers and computer scientists.

*New Developments and Advances in Robot Control* Nabil Derbel 2019-01-24 This book highlights relevant studies and applications in the area of robotics, which reflect the latest research, from interdisciplinary theoretical studies and computational algorithm development, to representative applications. It presents chapters on advanced control, such as fuzzy, neural, backstepping, sliding mode, adaptive, predictive, diagnosis and fault tolerant control etc. and addresses topics including cloud robotics, cable-driven robots, two-wheeled robots, mobile robots, swarm robots, hybrid vehicle, and drones. Each chapter employs a uniform structure: background, motivation, quantitative development (equations), case studies/illustration/tutorial (simulations, experiences, curves, tables, etc.), allowing readers to easily tailor the techniques to their own applications.

*Automation for Robotics* Luc Jaulin 2015-02-23 In order to enable a better understanding of the key concepts of automation, this book develops the fundamental aspects of the field while also proposing numerous concrete exercises and their solutions. The theoretical approach that it presents fundamentally uses the state space and makes it possible to process general and complex systems in a simple way, involving several switches and sensors of different types. This approach requires the use of developed theoretical tools such as linear algebra, analysis and physics, generally taught in preparatory classes for specialist engineering courses.

*Analysis and Software for the Development of an Inertially Aided Robot Manipulator* 1989 This report documents the results of a technical support task performed for the U.S. Army Missile Command (MICOM). U.S. Army Missile Command (MICOM) is interested in the use of inertial sensors for the guidance and control of robot manipulators. A project has been launched to conduct a preliminary control system. This task was to provide technical support for the project, including dynamic and error analysis, modeling, data reduction, control scheme establishment, algorithm development, and performance evaluation.

*Parallel PnP Robots* Guanglei Wu 2020-08-08 This book discusses the parametric modeling, performance evaluation, design optimization and comparative study of the high-speed, parallel pick-and-place robots. It collects the modeling methodology, evaluation criteria and design guidelines for parallel PnP robots to provide a systematic analysis method for robotic developers. Furthermore, it gathers the research results previously scattered in many prestigious international journals and conference proceedings and methodically edits them and presents them in a unified form. The book is of interest to researchers, R&D engineers and graduate students in industrial parallel robotics who wish to learn the core principles, methods, algorithms, and applications.

Autonomous Robots Farbod Fahimi 2008-10-25 It is at least two decades since the conventional robotic manipulators have become a common manufacturing tool for different industries, from automotive to pharmaceutical. The proven benefits of utilizing robotic manipulators for manufacturing in different industries motivated scientists and researchers to try to extend the applications of robots to many other areas by inventing several new types of robots other than conventional manipulators. The new types of robots can be categorized in two groups; redundant (and hyper-redundant) manipulators, and mobile (ground, marine, and aerial) robots. These groups of robots, known as advanced robots, have more freedom for their mobility, which allows them to do tasks that the conventional manipulators cannot do. Engineers have taken advantage of the extra mobility of the advanced robots to make them work in constrained environments, ranging from limited joint motions for redundant (or hyper-redundant) manipulators to obstacles in the way of mobile (ground, marine, and aerial) robots. Since these constraints usually depend on the work environment, they are variable. Engineers have had to invent methods to allow the robots to deal with a variety of constraints automatically. A robot that is equipped with those methods is called an Autonomous Robot. Autonomous Robots: Kinematics, Path Planning, and Control covers the kinematics and dynamic modeling/analysis of Autonomous Robots, as well as the methods suitable for their control. The text is suitable for mechanical and electrical engineers who want to familiarize themselves with methods of modeling/analysis/control that have been proven efficient through research.

*Reliable Robot Localization* Simon Rohou 2020-01-02 Localization for underwater robots remains a challenging issue. Typical sensors, such as Global Navigation Satellite System (GNSS) receivers, cannot be used under the surface and other inertial systems suffer from a strong integration drift. On top of that, the seabed is generally uniform and unstructured, making it difficult to apply Simultaneous Localization and Mapping (SLAM) methods to perform localization. Reliable Robot Localization presents an innovative new method which can be characterized as a raw-data SLAM approach. It differs from extant methods by considering time as a standard variable to be estimated, thus raising new opportunities for state estimation, so far underexploited. However, such temporal resolution is not straightforward and requires a set of theoretical tools in order to achieve the main purpose of localization. This book not only presents original contributions to the field of mobile robotics, it also offers new perspectives on constraint programming and set-membership approaches. It provides a reliable contractor programming framework in order to build solvers for dynamical systems. This set of tools is illustrated throughout this book with realistic robotic applications.

*Artificial Intelligence and Neural Networks* F. Acar Savaci 2006-07-25 This book constitutes the thoroughly refereed post-proceedings of the 14th Turkish Symposium on Artificial Intelligence and Neural Networks, TAINN 2005, held in Izmir, Turkey, June 2005. The book presents 26 revised full papers categorized in topical sections on robotics, image processing, classification, learning theory and support vector machines, fuzzy neural networks, robotics, fuzzy logic, machine learning, engineering applications, and neural networks architecture.

Proceedings 1987

*Robot Manipulators* Alex Lazinica 2010-04-01 Robot manipulators are developing more in the direction of industrial robots than of human workers. Recently, the applications of robot manipulators are spreading their focus, for example Da Vinci as a medical robot, ASIMO as a humanoid robot and so on. There are many research topics within the field of robot manipulators, e.g. motion planning, cooperation with a human, and fusion with external sensors like vision, haptic and force, etc. Moreover, these include both technical problems in the industry and theoretical problems in the academic fields. This book is a collection of papers presenting the latest research issues from around the world.