
Read PDF Recent Advances In Mechatronics 2008 2009

If you ally infatuation such a referred **Recent Advances In Mechatronics 2008 2009** book that will have the funds for you worth, get the very best seller from us currently from several preferred authors. If you desire to witty books, lots of novels, tale, jokes, and more fictions collections are plus launched, from best seller to one of the most current released.

You may not be perplexed to enjoy all ebook collections Recent Advances In Mechatronics 2008 2009 that we will extremely offer. It is not in relation to the costs. Its more or less what you need currently. This Recent Advances In Mechatronics 2008 2009, as one of the most enthusiastic sellers here will agreed be accompanied by the best options to review.

KEY=RECENT - REBEKAH BLAKE

RECENT ADVANCES IN MECHATRONICS

2008 - 2009

Springer Science & Business Media Mechatronics is a synergic discipline integrating precise mechanics, electrotechnics, electronics and IT technologies. The main goal of mechatronical approach to design of complex products is to achieve new quality of their utility value at reasonable price. Successful accomplishment of this task would not be possible without application of advanced software and hardware tools for simulation of design, technologies and production control and also for simulation of behavior of these products in order to provide the highest possible level of spatial and functional integration of the final product. This book brings a review of the current state of the art in mechatronics, as presented at the 8th International Conference Mechatronics 2009, organized by the Brno Technical University, Faculty of Mechanical Engineering, Czech Republic. The specific topics of the conference are Modelling and Simulation, Metrology & Diagnostics, Sensorics & Photonics, Control & Robotics, MEMS Design & Mechatronic Products, Production Machines and Biomechanics. The selected contributions provide an insight into the current development of these scientific disciplines, present the new results of research and development and indicate the trends of development in the interdisciplinary field of mechatronic systems. Therefore, the book provides the latest and helpful information both for the R&D specialists and for the designers working in mechatronics and related fields.

MECHATRONICS 2019: RECENT ADVANCES TOWARDS INDUSTRY 4.0

Springer Nature This book gathers papers presented at Mechatronics 2019, an international conference held in Warsaw, Poland, from September 16 to 18, 2019. The contributions discuss the numerous, multidisciplinary technological advances in the field of applied mechatronics that the emerging Industry 4.0 has already yielded. Each chapter presents a particular example of interdisciplinary theoretical knowledge, numerical modelling and simulation, or the application of artificial intelligence techniques. Further, the papers show how both software and physical devices can be incorporated into mechatronic systems to increase production efficiency and resource savings. The results and guidelines presented here will benefit both scientists and engineers looking for solutions to specific industrial and research problems.

MECHATRONICS 2013

RECENT TECHNOLOGICAL AND SCIENTIFIC ADVANCES

Springer Science & Business Media Mechatronics, as the integrating framework of mechanical engineering, electrical engineering, computer technology, control engineering and automation forms a crucial part in the design, manufacture and maintenance of a wide range of engineering products and processes. The mechatronics itself changes rapidly in last decade, from original mixture of subfields into original approach in engineering as a technical discipline. The book you are holding is aimed to help the reader to orient in this evolving field of science and technology. "Mechatronics 2013: Recent Technological and Scientific Advances" is the fourth volume following the previous editions in 2007, 2009 and 2011, providing the comprehensive and accessible coverage of advances in mechatronics presented on the 10th International Conference Mechatronics 2013, hosted this year at the Brno University of Technology, Czech Republic. The contributions, that passed the thorough review process, give an insight into current trends in research and development among Mechatronics 2013 contributing countries, with paper topics covering design and modeling of mechatronic systems, control and automation, signal processing, robotics and others, keeping in mind the innovation benefits of mechatronics design approach, leading to the development, production and daily use of machines and devices possessing a certain degree of computer based intelligence.

PROGRESS IN AUTOMATION, ROBOTICS AND MEASURING TECHNIQUES

VOLUME 2 ROBOTICS

Springer This book presents recent progresses in control, automation, robotics and measuring techniques. It includes contributions of top experts in the fields, focused on both theory and industrial practice. The particular chapters present a deep analysis of a specific technical problem which is in general followed by a numerical analysis and simulation and results of an implementation for the solution of a real world problem. The presented theoretical results, practical solutions and guidelines will be useful for both researchers working in the area of engineering sciences and for practitioners solving industrial problems.

AUTOMATION 2020: TOWARDS INDUSTRY OF THE FUTURE

PROCEEDINGS OF AUTOMATION 2020, MARCH 18-20, 2020, WARSAW, POLAND

Springer Nature This book presents the scientific outcomes of the International Conference AUTOMATION 2020, held on March 18-20, 2020 in Warsaw, Poland. The next 30 years will see radical innovations in production processes, transportation management and social life. The changes brought about by the transformation to zero-emission industry require advances in many fields, but especially in industrial automation, robotics and measurement techniques associated with the cyber-physical systems employing artificial intelligence that will be key to reducing costs and enabling European society to maintain its quality of live. In this context, the book features the latest research toward further developing these fields of engineering, and also offers solutions and guidelines that are useful for both researchers and engineers addressing problems associated with the world of ongoing radical changes.

OPTOELECTRONIC DEVICES AND PROPERTIES

BoD - Books on Demand Optoelectronic devices impact many areas of society, from simple household appliances and multimedia systems to communications, computing, spatial scanning, optical monitoring, 3D measurements and medical instruments. This is the most complete book about optoelectromechanic systems and semiconductor optoelectronic devices; it provides an accessible, well-organized overview of optoelectronic devices and properties that emphasizes basic principles.

MEASUREMENT IN MACHINING AND TRIBOLOGY

Springer This book presents the research advances in the science of measurement, giving special focus to the field of machining and tribology. Topics such as dimensional metrology, precision measurements, industrial metrology, accuracy and precision in

measurement are covered. Also theoretical aspects such as modelling and simulation are highlighted.

RECENT ADVANCES IN OPTIMIZATION AND ITS APPLICATIONS IN ENGINEERING

Springer Science & Business Media Mathematical optimization encompasses both a rich and rapidly evolving body of fundamental theory, and a variety of exciting applications in science and engineering. The present book contains a careful selection of articles on recent advances in optimization theory, numerical methods, and their applications in engineering. It features in particular new methods and applications in the fields of optimal control, PDE-constrained optimization, nonlinear optimization, and convex optimization. The authors of this volume took part in the 14th Belgian-French-German Conference on Optimization (BFG09) organized in Leuven, Belgium, on September 14-18, 2009. The volume contains a selection of reviewed articles contributed by the conference speakers as well as three survey articles by plenary speakers and two papers authored by the winners of the best talk and best poster prizes awarded at BFG09. Researchers and graduate students in applied mathematics, computer science, and many branches of engineering will find in this book an interesting and useful collection of recent ideas on the methods and applications of optimization.

ADVANCED MECHATRONICS SOLUTIONS

Springer Focusing on the most rapidly changing areas of mechatronics, this book discusses signals and system control, mechatronic products, metrology and nanometrology, automatic control & robotics, biomedical engineering, photonics, design manufacturing and testing of MEMS. It is reflected in the list of contributors, including an international group of 302 leading researchers representing 12 countries. The book is intended for use in academic, government and industry R&D departments, as an indispensable reference tool for the years to come. This volume can serve a global community as the definitive reference source in Mechatronics. The book comprises carefully selected 93 contributions presented at the 11th International Conference Mechatronics 2015, organized by Faculty of Mechatronics, Warsaw University of Technology, on September 21-23, in Warsaw, Poland.

XIII MEDITERRANEAN CONFERENCE ON MEDICAL AND BIOLOGICAL ENGINEERING AND COMPUTING 2013

MEDICON 2013, 25-28 SEPTEMBER 2013, SEVILLE, SPAIN

Springer Science & Business Media The general theme of MEDICON 2013 is "Research and Development of Technology for Sustainable Healthcare". This decade is being characterized by the appearance and use of emergent technologies under development. This situation has produced a tremendous impact on Medicine and Biology from which it is expected an unparalleled evolution in these disciplines towards novel concept and practices. The consequence will be a significant improvement in health care and well-fare, i.e. the shift from a reactive medicine to a preventive medicine. This shift implies that the citizen will play an important role in the healthcare delivery process, what requires a comprehensive and personalized assistance. In this context, society will meet emerging media, incorporated to all objects, capable of providing a seamless, adaptive, anticipatory, unobtrusive and pervasive assistance. The challenge will be to remove current barriers related to the lack of knowledge required to produce new opportunities for all the society, while new paradigms are created for this inclusive society to be socially and economically sustainable, and respectful with the environment. In this way, these proceedings focus on the convergence of biomedical engineering topics ranging from formalized theory through experimental science and technological development to practical clinical applications.

RECENT ADVANCES IN ROBOTICS AND AUTOMATION

Springer There isn't a facet of human life that has not been touched and influenced by robots and automation. What makes robots and machines versatile is their computational intelligence. While modern intelligent sensors and powerful hardware capabilities have given a huge fillip to the growth of intelligent machines, the progress in the development of algorithms for smart interaction, collaboration and pro-activeness will result in the next quantum jump. This book deals with the recent advancements in design methodologies, algorithms and implementation techniques to incorporate intelligence in robots and automation systems. Several articles deal with navigation, localization and mapping of mobile robots, a problem that engineers and researchers are grappling with all the time. Fuzzy logic, neural networks and neuro-fuzzy based techniques for real world applications have been detailed in a few articles. This edited volume is targeted to present the latest state-of-the-art computational intelligence techniques in Robotics and Automation. It is a compilation of the extended versions of the very best papers selected from the many that were presented at the 5th International Conference on Automation, Robotics and Applications (ICARA 2011) which was held in Wellington, New Zealand from 6-8 December, 2011. Scientists and engineers who work with robots and automation systems will find this book very useful and stimulating.

RECENT ADVANCES IN ROBUST CONTROL

THEORY AND APPLICATIONS IN ROBOTICS AND ELECTROMECHANICS

BoD - Books on Demand Robust control has been a topic of active research in the last three decades culminating in H_2/H_∞ and μ design methods followed by research on parametric robustness, initially motivated by Kharitonov's theorem, the extension to non-linear time delay systems, and other more recent methods. The two volumes of Recent Advances in Robust Control give a selective overview of recent theoretical developments and present selected application examples. The volumes comprise 39 contributions covering various theoretical aspects as well as different application areas. The first volume covers selected problems in the theory of robust control and its application to robotic and electromechanical systems. The second volume is dedicated to special topics in robust control and problem specific solutions. Recent Advances in Robust Control will be a valuable reference for those interested in the recent theoretical advances and for researchers working in the broad field of robotics and mechatronics.

FORMAL METHODS IN MANUFACTURING SYSTEMS: RECENT ADVANCES

RECENT ADVANCES

IGI Global Evolving technologies in mass production have led to the development of advanced techniques in the field of manufacturing. These technologies can quickly and effectively respond to various market changes, necessitating processes that focus on small batches of multiple products rather than large, single-product lines. Formal Methods in Manufacturing Systems: Recent Advances explores this shifting paradigm through an investigation of contemporary manufacturing techniques and formal methodologies that strive to solve a variety of issues arising from a market environment that increasingly favors flexible systems over traditional ones. This book will be of particular use to industrial engineers and students of the field who require a detailed understanding of current trends and developments in manufacturing tools. This book is part of the Advances in Civil and Industrial Engineering series collection.

ADVANCED MECHATRONICS AND MEMS DEVICES

Springer Science & Business Media Advanced Mechatronics and MEMS Devices describes state-of-the-art MEMS devices and introduces the latest technology in electrical and mechanical microsystems. The evolution of design in microfabrication, as well as emerging issues in nanomaterials, micromachining, micromanufacturing and microassembly are all discussed at length in this volume. Advanced Mechatronics also provides a reader with knowledge of MEMS sensors array, MEMS multidimensional accelerometer, artificial skin with imbedded tactile components, as well as other topics in MEMS sensors and transducers. The book also presents a number of topics in advanced robotics and an abundance of applications of MEMS in robotics, like reconfigurable modular snake robots, magnetic MEMS robots for drug delivery and flying robots with adjustable wings, to name a few.

RECENT ADVANCES IN AUTOMATION, ROBOTICS AND MEASURING TECHNIQUES

Springer This book presents the recent advances and developments in control, automation, robotics and measuring techniques. It presents contributions of top experts in the fields, focused on both theory and industrial practice. The particular chapters present a deep

analysis of a specific technical problem which is in general followed by a numerical analysis and simulation and results of an implementation for the solution of a real world problem. The book presents the results of the International Conference AUTOMATION 2014 held 26 - 28 March, 2014 in Warsaw, Poland on Automation - Innovations and Future Perspectives The presented theoretical results, practical solutions and guidelines will be useful for both researchers working in the area of engineering sciences and for practitioners solving industrial problems.

HANDBOOK OF RESEARCH ON ADVANCED MECHATRONIC SYSTEMS AND INTELLIGENT ROBOTICS

IGI Global Advanced research in the field of mechatronics and robotics represents a unifying interdisciplinary and intelligent engineering science paradigm. It is a holistic, concurrent, and interdisciplinary engineering science that identifies novel possibilities of synergizing and fusing different disciplines. The Handbook of Research on Advanced Mechatronic Systems and Intelligent Robotics is a collection of innovative research on the methods and applications of knowledge in both theoretical and practical skills of intelligent robotics and mechatronics. While highlighting topics including green technology, machine learning, and virtual manufacturing, this book is ideally designed for researchers, students, engineers, and computer practitioners seeking current research on developing innovative ideas for intelligent robotics and autonomous and smart interdisciplinary mechatronic products.

MACHINING—RECENT ADVANCES, APPLICATIONS AND CHALLENGES

MDPI The Special Issue Machining—Recent Advances, Applications and Challenges is intended as a humble collection of some of the hottest topics in machining. The manufacturing industry is a varying and challenging environment where new advances emerge from one day to another. In recent years, new manufacturing procedures have retained increasing attention from the industrial and scientific community. However, machining still remains the key operation to achieve high productivity and precision for high-added value parts. Continuous research is performed, and new ideas are constantly considered. This Special Issue summarizes selected high-quality papers which were submitted, peer-reviewed, and recommended by experts. It covers some (but not only) of the following topics: High performance operations for difficult-to-cut alloys, wrought and cast materials, light alloys, ceramics, etc.; Cutting tools, grades, substrates and coatings. Wear damage; Advanced cooling in machining: Minimum quantity of lubricant, dry or cryogenics; Modelling, focused on the reduction of risks, the process outcome, and to maintain surface integrity; Vibration problems in machines: Active and passive/predictive methods, sources, diagnosis and avoidance; Influence of machining in new concepts of machine-tool, and machine static and dynamic behaviors; Machinability of new composites, brittle and emerging materials; Assisted machining processes by high-pressure, laser, US, and others; Introduction of new analytics and decision making into machining programming. We wish to thank the reviewers and staff from Materials for their comments, advice, suggestions and invaluable support during the development of this Special Issue.

TOWARDS SERVICE ROBOTS FOR EVERYDAY ENVIRONMENTS

RECENT ADVANCES IN DESIGNING SERVICE ROBOTS FOR COMPLEX TASKS IN EVERYDAY ENVIRONMENTS

Springer Science & Business Media People have dreamed of machines, which would free them from unpleasant, dull, dirty and dangerous tasks and work for them as servants, for centuries if not millennia. Service robots seem to finally let these dreams come true. But where are all these robots that eventually serve us all day long, day for day? A few service robots have entered the market: domestic and professional cleaning robots, lawnmowers, milking robots, or entertainment robots. Some of these robots look more like toys or gadgets rather than real robots. But where is the rest? This is a question, which is asked not only by customers, but also by service providers, care organizations, politicians, and funding agencies. The answer is not very satisfying. Today's service robots have their problems operating in everyday environments. This is by far more challenging than operating an industrial robot behind a fence. There is a comprehensive list of technical and scientific problems, which still need to be solved. To advance the state of the art in service robotics towards robots, which are capable of operating in an everyday environment, was the major objective of the DESIRE project (Deutsche Service Robotik Initiative - Germany Service Robotics Initiative) funded by the German Ministry of Education and Research (BMBF) under grant no. 01IME01A. This book offers a sample of the results achieved in DESIRE.

RECENT ADVANCES IN ROBOTIC SYSTEMS

BoD - Books on Demand This book brings together some recent advances and development in robotics. In 12 chapters, written by experts and researchers in respective fields, the book presents some up-to-date research ideas and findings in a wide range of robotics, including the design, modeling, control, learning, interaction, and navigation of robots. From an application perspective, the book covers UAVs, USVs, mobile robots, humanoid robots, graspers, and underwater robots. The unique text offers practical guidance to graduate students and researchers in research and applications in the field of robotics.

RECENT ADVANCES IN MECHANISM DESIGN FOR ROBOTICS

PROCEEDINGS OF THE 3RD IFTOMM SYMPOSIUM ON MECHANISM DESIGN FOR ROBOTICS

Springer This volume contains the Proceedings of the 3rd IFTOMM Symposium on Mechanism Design for Robotics, held in Aalborg, Denmark, 2-4 June, 2015. The book contains papers on recent advances in the design of mechanisms and their robotic applications. It treats the following topics: mechanism design, mechanics of robots, parallel manipulators, actuators and their control, linkage and industrial manipulators, innovative mechanisms/robots and their applications, among others. The book can be used by researchers and engineers in the relevant areas of mechanisms, machines and robotics.

RECENT ADVANCES ON HYBRID APPROACHES FOR DESIGNING INTELLIGENT SYSTEMS

Springer This book describes recent advances on hybrid intelligent systems using soft computing techniques for diverse areas of application, such as intelligent control and robotics, pattern recognition, time series prediction and optimization complex problems. Soft Computing (SC) consists of several intelligent computing paradigms, including fuzzy logic, neural networks and bio-inspired optimization algorithms, which can be used to produce powerful hybrid intelligent systems. The book is organized in five main parts, which contain a group of papers around a similar subject. The first part consists of papers with the main theme of type-2 fuzzy logic, which basically consists of papers that propose new models and applications for type-2 fuzzy systems. The second part contains papers with the main theme of bio-inspired optimization algorithms, which are basically papers using nature-inspired techniques to achieve optimization of complex optimization problems in diverse areas of application. The third part contains papers that deal with new models and applications of neural networks in real world problems. The fourth part contains papers with the theme of intelligent optimization methods, which basically consider the proposal of new methods of optimization to solve complex real world optimization problems. The fifth part contains papers with the theme of evolutionary methods and intelligent computing, which are papers considering soft computing methods for applications related to diverse areas, such as natural language processing, recommending systems and optimization.

PROGRESS IN MECHATRONICS AND INFORMATION TECHNOLOGY

Trans Tech Publications Ltd Collection of selected, peer reviewed papers from the 2013 International Conference on Mechatronics and Information Technology (ICMIT 2013), October 19-20, 2013, Guilin, China. Volume is indexed by Thomson Reuters CPCI-S (WoS). The 228 papers are grouped as follows: Chapter 1: Sensors, Technologies of Measurement, Monitoring and Detection; Chapter 2: Signal and Data Processing, Intelligent Information Processing Technology; Chapter 3: Technologies of Control and Automation for Industry; Chapter 4: Industrial Electronics and Communication; Chapter 5: Robotics and Mechatronics; Chapter 6: Information Technology Applications

ADVANCE IN MECHATRONICS TECHNOLOGY

Trans Tech Publications Ltd Volume is indexed by Thomson Reuters CPCI-S (WoS). The present volume comprises a collection of peer-reviewed papers covering a wealth of innovations and practical experience in the fields of mechatronics and MEMS, advanced laser

manufacturing and testing technology, control theory, methods and application, robotics and electrical control, smart materials, structures and instruments, transducers, actuators and mechanisms, machine dynamics, simulation and signal process, computers, communications and network techniques, bio-manufacturing and bionics, new theories and techniques of design and manufacturing, HSM and NTM, advanced techniques and devices of electronics manufacturing, production technologies of fiber materials and textile industries, LDAC air conditioning new technology and materials, and automobile electronics for inter-vehicle sensor networks.

ADVANCES IN COMPUTER SCIENCE AND ITS APPLICATIONS

CSA 2013

Springer Science & Business Media These proceedings focus on various aspects of computer science and its applications, thus providing an opportunity for academic and industry professionals to discuss the latest issues and progress in this and related areas. The book includes theory and applications alike.

AETA 2018 - RECENT ADVANCES IN ELECTRICAL ENGINEERING AND RELATED SCIENCES: THEORY AND APPLICATION

Springer These proceedings address a broad range of topic areas, including telecommunication, power systems, digital signal processing, robotics, control systems, renewable energy, power electronics, soft computing and more. Today's world is based on vitally important technologies that combine e.g. electronics, cybernetics, computer science, telecommunication, and physics. However, since the advent of these technologies, we have been confronted with numerous technological challenges such as finding optimal solutions to various problems regarding controlling technologies, signal processing, power source design, robotics, etc. Readers will find papers on these and other topics, which share fresh ideas and provide state-of-the-art overviews. They will also benefit practitioners, who can easily apply the issues discussed here to solve real-life problems in their own work. Accordingly, the proceedings offer a valuable resource for all scientists and engineers pursuing research and applications in the above-mentioned fields.

RECENT ADVANCES IN SYSTEMS, CONTROL AND INFORMATION TECHNOLOGY

PROCEEDINGS OF THE INTERNATIONAL CONFERENCE SCIT 2016, MAY 20-21, 2016, WARSAW, POLAND

Springer This book presents the proceedings of the International Conference on Systems, Control and Information Technologies 2016. It includes research findings from leading experts in the fields connected with INDUSTRY 4.0 and its implementation, especially: intelligent systems, advanced control, information technologies, industrial automation, robotics, intelligent sensors, metrology and new materials. Each chapter offers an analysis of a specific technical problem followed by a numerical analysis and simulation as well as the implementation for the solution of a real-world problem.

RECENT ADVANCES IN POWER ELECTRONICS AND DRIVES

SELECT PROCEEDINGS OF EPREC 2021

Springer Nature

AETA 2017 - RECENT ADVANCES IN ELECTRICAL ENGINEERING AND RELATED SCIENCES: THEORY AND APPLICATION

Springer This proceedings book gathers papers presented at the 4th International Conference on Advanced Engineering Theory and Applications 2017 (AETA 2017), held on 7-9 December 2017 at Ton Duc Thang University, Ho Chi Minh City, Vietnam. It presents selected papers on 13 topical areas, including robotics, control systems, telecommunications, computer science and more. All selected papers represent interesting ideas and collectively provide a state-of-the-art overview. Readers will find intriguing papers on the design and implementation of control algorithms for aerial and underwater robots, for mechanical systems, efficient protocols for vehicular ad hoc networks, motor control, image and signal processing, energy saving, optimization methods in various fields of electrical engineering, and others. The book also offers a valuable resource for practitioners who want to apply the content discussed to solve real-life problems in their challenging applications. It also addresses common and related subjects in modern electric, electronic and related technologies. As such, it will benefit all scientists and engineers working in the above-mentioned fields of application.

ADVANCED ROBOTICS FOR MEDICAL REHABILITATION

CURRENT STATE OF THE ART AND RECENT ADVANCES

Springer Focussing on the key technologies in developing robots for a wide range of medical rehabilitation activities - which will include robotics basics, modelling and control, biomechanics modelling, rehabilitation strategies, robot assistance, clinical setup/implementation as well as neural and muscular interfaces for rehabilitation robot control - this book is split into two parts; a review of the current state of the art, and recent advances in robotics for medical rehabilitation. Both parts will include five sections for the five key areas in rehabilitation robotics: (i) the upper limb; (ii) lower limb for gait rehabilitation (iii) hand, finger and wrist; (iv) ankle for strains and sprains; and (v) the use of EEG and EMG to create interfaces between the neurological and muscular functions of the patients and the rehabilitation robots. Each chapter provides a description of the design of the device, the control system used, and the implementation and testing to show how it fulfils the needs of that specific area of rehabilitation. The book will detail new devices, some of which have never been published before in any journal or conference.

COLD ROLLING PRECISION FORMING OF SHAFT PARTS

THEORY AND TECHNOLOGIES

Springer This book presents in detail the theory, processes and equipment involved in cold rolling precision forming technologies, focusing on spline and thread shaft parts. The main topics discussed include the status quo of research on these technologies; the design and calculation of process parameters; the numerical simulation of cold rolling forming processes; and the equipment used. The mechanism of cold rolling forming is extremely complex, and research on the processes, theory and mechanical analysis of spline cold rolling forming has remained very limited to date. In practice, the forming processes and production methods used are mainly chosen on the basis of individual experience. As such, there is a marked lack of both systematic, theory-based guidelines, and of specialized books covering theoretical analysis, numerical simulation, experiments and equipment used in spline cold rolling forming processes. Illustrated using tables, 3D photographs and formula derivations, this book fills that gap in the literature.

RECENT ADVANCES IN COMPUTATIONAL OPTIMIZATION

RESULTS OF THE WORKSHOP ON COMPUTATIONAL OPTIMIZATION WCO 2016

Springer This book presents new optimization approaches and methods and their application in real-world and industrial problems, and demonstrates how many of the problems arising in engineering, economics and other domains can be formulated as optimization problems. Constituting a comprehensive collection of extended contributions from the 9th International Workshop on Computational Optimization (WCO) held in Gdansk, Poland, September 11-14, 2016, the book discusses important applications such as job scheduling, wildfire modeling, parameter settings for controlling different processes, capital budgeting, data mining, finding the location of sensors in a given network, identifying the conformation of molecules, algorithm correctness, decision support system, and computer

memory management. Further, it shows how to develop algorithms for these based on new intelligent methods like evolutionary computations, ant colony optimization and constraint programming. The book is a valuable resource for researchers and practitioners alike.

RECENT ADVANCES ON META-HEURISTICS AND THEIR APPLICATION TO REAL SCENARIOS

BoD - Books on Demand This book aims at attracting the interest of researchers and practitioners around the applicability of meta-heuristic algorithms to practical scenarios arising from different knowledge disciplines. Emphasis is placed on evolutionary algorithms and swarm intelligence as computational means to efficiently balance the tradeoff between optimality of the produced solutions and the complexity derived from their estimation. In summary, this book serves as a good start point for early-stage investigators in the initial steps of their research on meta-heuristics, grounded on both a thorough literature review and the practical orientation of its contents.

ADVANCES IN MECHATRONICS AND CONTROL ENGINEERING II

Trans Tech Publications Ltd Collection of selected, peer reviewed papers from the 2013 2nd International Conference on Mechatronics and Control Engineering (ICMCE 2013), August 28-29, 2013, Guangzhou, China. Volume is indexed by Thomson Reuters CPCI-S (WoS). The 485 papers are grouped as follows: Chapter 1: Theory of Mechanisms and Mechanical Dynamics Chapter 2: Industrial Robotics and Automation; Chapter 3: Design and Control in Modern Mechatronics System Engineering; Chapter 4: Sensor Technology; Chapter 5: Voice, Image and Video Processing; Chapter 6: Signal Processing System; Chapter 7: Artificial Intelligence and Computational Algorithms; Chapter 8: Measurement Technology, Testing and Instruments; Chapter 9: Automatic Control Technology; Chapter 10: Electric Automation; Chapter 11: Intelligent Traffic Control; Chapter 12: Electronics Technology and Embedded Systems; Chapter 13: Software Development and Application; Chapter 14: Computer Application in Industry and Engineering; Chapter 15: Fluid Engineering and Hydrodynamics; Chapter 16: Materials; Chapter 17: Research and Design in Mechanical Engineering; Chapter 18: Structural Engineering and Architecture Analysis; Chapter 19: Industrial Engineering and Production Operations Management; Chapter 20: Engineering Education

SMART ACTUATION AND SENSING SYSTEMS

RECENT ADVANCES AND FUTURE CHALLENGES

BoD - Books on Demand The objective of the present book, which tries to summarize in an edited format and in a fairly comprehensive manner, many of the recent technical research accomplishments in the area of Smart Actuators and Smart Sensors, is to combine researchers and scientists from different fields into a single virtual room. The book hence reflects the multicultural nature of the field and will allow the reader to taste and appreciate different points of view, different engineering methods and different tools that must be jointly considered when designing and realizing smart actuation and sensing systems.

COMPUTATIONAL INTELLIGENCE IN WIRELESS SENSOR NETWORKS

RECENT ADVANCES AND FUTURE CHALLENGES

Springer This book emphasizes the increasingly important role that Computational Intelligence (CI) methods are playing in solving a myriad of entangled Wireless Sensor Networks (WSN) related problems. The book serves as a guide for surveying several state-of-the-art WSN scenarios in which CI approaches have been employed. The reader finds in this book how CI has contributed to solve a wide range of challenging problems, ranging from balancing the cost and accuracy of heterogeneous sensor deployments to recovering from real-time sensor failures to detecting attacks launched by malicious sensor nodes and enacting CI-based security schemes. Network managers, industry experts, academicians and practitioners alike (mostly in computer engineering, computer science or applied mathematics) benefit from the spectrum of successful applications reported in this book. Senior undergraduate or graduate students may discover in this book some problems well suited for their own research endeavors.

INTELLIGENT SYSTEMS

CRC Press The Industrial Electronics Handbook, Second Edition combines traditional and newer, more specialized knowledge that will help industrial electronics engineers develop practical solutions for the design and implementation of high-power applications. Embracing the broad technological scope of the field, this collection explores fundamental areas, including analog and digital circuits, electronics, electromagnetic machines, signal processing, and industrial control and communications systems. It also facilitates the use of intelligent systems—such as neural networks, fuzzy systems, and evolutionary methods—in terms of a hierarchical structure that makes factory control and supervision more efficient by addressing the needs of all production components. Enhancing its value, this fully updated collection presents research and global trends as published in the IEEE Transactions on Industrial Electronics Journal, one of the largest and most respected publications in the field. As intelligent systems continue to replace and sometimes outperform human intelligence in decision-making processes, they have made substantial contributions to the solution of very complex problems. As a result, the field of computational intelligence has branched out in several directions. For instance, artificial neural networks can learn how to classify patterns, such as images or sequences of events, and effectively model complex nonlinear systems. Simple and easy to implement, fuzzy systems can be applied to successful modeling and system control. Illustrating how these and other tools help engineers model nonlinear system behavior, determine and evaluate system parameters, and ensure overall system control, Intelligent Systems: Addresses various aspects of neural networks and fuzzy systems Focuses on system optimization, covering new techniques such as evolutionary methods, swarm, and ant colony optimizations Discusses several applications that deal with methods of computational intelligence Other volumes in the set: Fundamentals of Industrial Electronics Power Electronics and Motor Drives Control and Mechatronics Industrial Communication Systems

INTELLIGENT ASSISTIVE ROBOTS

RECENT ADVANCES IN ASSISTIVE ROBOTICS FOR EVERYDAY ACTIVITIES

Springer This book deals with the growing challenges of using assistive robots in our everyday activities along with providing intelligent assistive services. The presented applications concern mainly healthcare and wellness such as helping elderly people, assisting dependent persons, habitat monitoring in smart environments, well-being, security, etc. These applications reveal also new challenges regarding control theory, mechanical design, mechatronics, portability, acceptability, scalability, security, etc.

MATERIALS, MECHATRONICS AND AUTOMATION

Trans Tech Publications Ltd A forum for those researchers, educators, engineers, and government officials involved in the general areas of Materials, Mechatronics and Automation and sensors, was provided by this collection of peer-reviewed papers. The resultant dissemination of the latest research results, and the exchanges of views concerning the future research directions to be taken by these fields makes the work of immense value to all those having an interest in the topics covered. Volume is indexed by Thomson Reuters CPCI-S (WoS). The more than 387 papers are grouped into: Chapter 1: Intelligent Mechatronics, Robotics, Biomimetics, Automation, Chapter 2: Materials, Mechatronics and Automation, Chapter 3: Industrial Automation and Manufacturing Process.

ADVANCED MECHATRONICS AND MEMS DEVICES II

Springer This book introduces the state-of-the-art technologies in mechatronics, robotics, and MEMS devices in order to improve their methodologies. It provides a follow-up to "Advanced Mechatronics and MEMS Devices" (2013) with an exploration of the most up-to-date technologies and their applications, shown through examples that give readers insights and lessons learned from actual projects. Researchers on mechatronics, robotics, and MEMS as well as graduate students in mechanical engineering will find chapters on: Fundamental design and working principles on MEMS accelerometers Innovative mobile technologies Force/tactile sensors development Control schemes for reconfigurable robotic systems Inertial microfluidics Piezoelectric force sensors and dynamic calibration techniques ...And more. Authors explore applications in the areas of agriculture, biomedicine, advanced manufacturing, and space. Micro-assembly for current and future industries is also considered, as well as the design and development of micro and intelligent

manufacturing.

RECENT ADVANCES IN MANUFACTURING PROCESSES AND SYSTEMS

SELECT PROCEEDINGS OF RAM 2021

Springer Nature This book presents select proceedings of 2nd International Conference on Recent Advances in Manufacturing (RAM 2021). The book provides insights into the current research trends and development in manufacturing processes. The topics covered include conventional and nonconventional manufacturing processes, micro and nano manufacturing processes, chemical and biochemical manufacturing, additive manufacturing, smart manufacturing, and sustainable and energy-efficient manufacturing. The contributions presented here are intended to stimulate new research directions in the manufacturing domain. This book will be useful for the beginners, researchers and professionals working in the area of industrial and production engineering and allied fields.