
Online Library 2009 Eurobot Robotics In Education And Research

If you ally need such a referred **2009 Eurobot Robotics In Education And Research** ebook that will give you worth, get the categorically best seller from us currently from several preferred authors. If you want to droll books, lots of novels, tale, jokes, and more fictions collections are afterward launched, from best seller to one of the most current released.

You may not be perplexed to enjoy all books collections 2009 Eurobot Robotics In Education And Research that we will utterly offer. It is not on the order of the costs. Its virtually what you habit currently. This 2009 Eurobot Robotics In Education And Research, as one of the most involved sellers here will extremely be accompanied by the best options to review.

KEY=EDUCATION - MCLEAN LILIANNA

Research and Education in Robotics - EUROBOT 2009 International Conference, la Ferté-Bernard, France, May 21-23, 2009. Revised Selected Papers

[Springer Science & Business Media](#) **This volume contains the accepted papers presented during the International Conference on Research and Education in Robotics - EUROBOT Conference 2009, held in La Ferté-Bernard, France, May 21-23, 2009. Today, robots are indispensable tools for flexible, automated manufacturing in many areas of industry as well as for the execution of sophisticated or dangerous tasks in the nuclear industry, in medicine and in space technology, and last but not least, they are being increasingly used in everyday life. To further encourage research in this area, the EUROBOT Conferences have been set up. They aim to gather researchers and developers from academic fields and industries worldwide to explore the state of the art. This conference is - accompanied by the EUROBOT Contest Finals, an international amateur robotics contest open to teams of young people. During the finals in 2009, teams from 25 countries came together not only to compete, but also to exchange knowledge and ideas and to learn from each other. In addition to the paper and poster presentations, there were two invited talks: - Raja Chatila, Director of the LAAS - CNRS, Toulouse, France whose talk was about "Cognitive Robots" - Véronique Raoul, EUROBOT Association, France whose talk was about "EUROBOT" Organizing a conference is a task that requires the collaboration of many people. We personally would like to warmly thank all members of the EUROBOT Conference 2009 program committee; without their help and dedication it would not have been possible to produce these proceedings.**

Research and Education in Robotics - EUROBOT 2009 International Conference, la Ferté-Bernard, France, May 21-23, 2009. Revised Selected Papers

[Springer](#) **This volume contains the accepted papers presented during the International Conference on Research and Education in Robotics - EUROBOT Conference 2009, held in La Ferté-Bernard, France, May 21-23, 2009. Today, robots are indispensable tools for flexible, automated manufacturing in many areas of industry as well as for the execution of sophisticated or dangerous tasks in the nuclear industry, in medicine and in space technology, and last but not least, they are being increasingly used in everyday life. To further encourage research in this area, the EUROBOT Conferences have been set up. They aim to gather researchers and developers from academic fields and industries worldwide to explore the state of the art. This conference is - accompanied by the EUROBOT Contest Finals, an international amateur robotics contest open to teams of young people. During the finals in 2009, teams from 25 countries came together not only to compete, but also to exchange knowledge and ideas and to learn from each other. In addition to the paper and poster presentations, there were two invited talks: - Raja Chatila, Director of the LAAS - CNRS, Toulouse, France whose talk was about "Cognitive Robots" - Véronique Raoul, EUROBOT Association, France whose talk was about "EUROBOT" Organizing a conference is a task that requires the collaboration of many people. We personally would like to warmly thank all members of the EUROBOT Conference 2009 program committee; without their help and dedication it would not have been possible to produce these proceedings.**

International Conference on Research and Education in

Robotics

Eurobot 2010 ; May 27-30, 2009, Rapperswil-Jona, Switzerland

Research and Education in Robotics - EUROBOT 2010 International Conference, Rapperswil-Jona, Switzerland, May 27-30, 2010, Revised Selected Papers

[Springer Science & Business Media](#) **This book constitutes the proceedings of the International Conference on Research and Education in Robotics held in Rapperswil-Jona, Switzerland, in May 2010. The 17 revised full papers presented were carefully reviewed and selected from 24 submissions. They are organized in topical sections on mechanical design and system architecture, flexible robot strategy design, and autonomous mobile robot development.**

Research and Education in Robotics - EUROBOT 2011 International Conference, Prague, Czech Republic, June 15-17, 2011. Proceedings

[Springer Science & Business Media](#) **This book constitutes the proceedings of the International Conference on Research and Education in Robotics, EUROBOT 2011, held in Prague, Czech Republic, in June 2011. The 28 revised full papers presented were carefully reviewed and selected from numerous submissions. The papers present current basic research such as robot control and behaviour, applications of autonomous intelligent robots, and perception, processing and action; as well as educationally oriented papers addressing issues like robotics at school and at university, practical educational robotics activities, practices in educational robot design, and future pedagogical activities.**

Computers Helping People with Special Needs, Part II 12th International Conference, ICCHP 2010, Vienna, Austria, July 14-16, 2010. Proceedings

[Springer Science & Business Media](#) **Welcome to the Proceedings of ICCHP 2010! We were proud to welcome participants from more than 40 countries from all over the world to this year's ICCHP. Since the late 1980s, it has been ICCHP's mission to support and reflect development in the field of "Assistive Technologies," eAccessibility and eInclusion. With a focus on scientific quality, ICCHP has become an important reference in our field. The 2010 conference and this collection of papers once again fulfilled this mission. The International Programme Committee, comprising 106 experts from all over the world, selected 147 full and 44 short papers out of 328 abstracts submitted to ICCHP. This acceptance ratio of about half of the submissions demonstrates our strict pursuit of scientific quality both of the programme and in particular of the proceedings in your hands. An impressive number of experts agreed to organize "Special Thematic Sessions" (STS) for ICCHP 2010. These STS help to bring the meeting into sharper focus in several key areas. In turn, this deeper level of focus helps to collate a state of the art and mainstream technical, social, cultural and political developments.**

Research and Education in Robotics -- EUROBOT 2008 International Conference, Heidelberg, Germany, May 22-24, 2008. Revised Selected Papers

[Springer Science & Business Media](#) **This volume constitutes the refereed proceedings of the International Conference on Research and Education in Robotics, EUROBOT 2008, held in Heidelberg, Germany, in May 2008. The EUROBOT Conference 2008 was accompanied by the international amateur robotics contest EUROBOTopen final, edition 2008.**

The 18 revised full papers presented were carefully reviewed and selected from the 33 papers which had built the main program of the conference. A fundamental aspect of EUROBOT is the promotion of sciences and technology among young students and researchers. The theme for 2008 was ""Mission to Mars""

UAV-Based Remote Sensing Volume 1

MDPI This book is a printed edition of the Special Issue "UAV-Based Remote Sensing" that was published in Sensors

Designing Self-Organization in the Physical Realm

Frontiers Media SA

ROBOT2013: First Iberian Robotics Conference

Advances in Robotics, Vol.2

Springer Science & Business Media The interest in robotics has remarkably augmented over recent years. Novel solutions for complex and very diverse application fields (exploration/intervention in severe environments, assistive, social, personal services, emergency rescue operations, transportation, entertainment, unmanned aerial vehicles, medical, etc.), has been anticipated by means of a large progress in this area of robotics. Moreover, the amalgamation of original ideas and related innovations, the search for new potential applications and the use of state of the art supporting technologies permit to foresee an important step forward and a significant socio-economic impact of advanced robot technology in the forthcoming years. In response to the technical challenges in the development of these sophisticated machines, a significant research and development effort has yet to be undertaken. It concerns embedded technologies (for power sources, actuators, sensors, information systems), new design methods, adapted control techniques for highly redundant systems, as well as operational and decisional autonomy and human/robot co-existence. This book contains the proceedings of the ROBOT 2013: FIRST IBERIAN ROBOTICS CONFERENCE and it can be said that included both state of the art and more practical presentations dealing with implementation problems, support technologies and future applications. A growing interest in Assistive Robotics, Agricultural Robotics, Field Robotics, Grasping and Dexterous Manipulation, Humanoid Robots, Intelligent Systems and Robotics, Marine Robotics, has been demonstrated by the very relevant number of contributions. Moreover, ROBOT2013 incorporates a special session on Legal and Ethical Aspects in Robotics that is becoming a topic of key relevance. This Conference will be held in Madrid (28-29 November 2013), organised by the Sociedad Española para la Investigación y Desarrollo en Robótica (SEIDROB) and by the Centre for Automation and Robotics - CAR (Universidad Politécnica de Madrid (UPM) and Consejo Superior de Investigaciones Científicas (CSIC)), along with the co-operation of Grupo Temático de Robótica CEA-GTRob, Sociedade Portuguesa de Robotica (SPR), and Asociación Española de Promoción de la Investigación en Agentes Físicos (RedAF).

Handbook of Research on Lifestyle Sustainability and Management Solutions Using AI, Big Data Analytics, and Visualization

IGI Global The sudden outbreak of the COVID-19 pandemic has curbed human lifestyle by imposing restrictions on regular daily movements that had been taken for granted. Due to the pandemic, the welfare segment has received more attention, and every possible effort is being made to prioritize the services at the top. This can be made possible while using the latest tools, technologies, and resources that impact the human culture and welfare of well-being. Novel methods and devices that make the welfare services more efficient, adaptive, transparent, and cost-effective need to be explored. The Handbook of Research on Lifestyle Sustainability and Management Solutions Using AI, Big Data Analytics, and Visualization offers extensive research on lifestyle management and services that contribute towards indication, detection, conduction, protection, and technological enhancement including machine learning, deep learning, artificial intelligence, big data analytics, and visualization. It also provides mechanisms that can improve lifestyle monitoring and help in increasing the immunity of the human body. Covering topics such as big data, robot therapy, and wearable technology, it is ideal for students, researchers, technologists, IT specialists, computer engineers, systems engineers, data scientists, doctors, hospital administrators, engineers, academicians, and technology providers.

Robots in K-12 Education: A New Technology for Learning

A New Technology for Learning

IGI Global "This book explores the theory and practice of educational robotics in the K-12 formal and informal educational settings, providing empirical research supporting the use of robotics for STEM learning"--Provided by publisher.

Proceedings of the XV International Scientific Conference on Industrial Systems (IS'11)

FON

Handling Uncertainty and Networked Structure in Robot Control

Springer This book focuses on two challenges posed in robot control by the increasing adoption of robots in the everyday human environment: uncertainty and networked communication. Part I of the book describes learning control to address environmental uncertainty. Part II discusses state estimation, active sensing, and complex scenario perception to tackle sensing uncertainty. Part III completes the book with control of networked robots and multi-robot teams. Each chapter features in-depth technical coverage and case studies highlighting the applicability of the techniques, with real robots or in simulation. Platforms include mobile ground, aerial, and underwater robots, as well as humanoid robots and robot arms. Source code and experimental data are available at <http://extras.springer.com>. The text gathers contributions from academic and industry experts, and offers a valuable resource for researchers or graduate students in robot control and perception. It also benefits researchers in related areas, such as computer vision, nonlinear and learning control, and multi-agent systems.

Proton Exchange Membrane Fuel Cell

BoD - Books on Demand The main idea of this study is to scrutinize the performance efficiency and enhancement of modelling and simulations of PEM fuel cell. Besides, the research of PEM fuel cell performance can figure out many critical issues for an alternative resource energy. The chapters collected in the book are contributions by invited researchers with a long-standing experience in different research areas. I hope that the material presented here is understandable to a wide audience, not only energy engineers but also scientists from various disciplines. The book contains nine chapters in three sections: (1) "General Information About PEM Fuel Cell", (2) "PEM Fuel Cell Technology" and (3) "Many Different Applications of PEM Fuel Cell". This book presents detailed and up-to-date evaluations in different areas and was written by academics with experience in their field. It is anticipated that this book will make a scientific contribution to PEM fuel cell and other alternative energy resource workers, researchers, academics, PhD students and other scientists both in the present and in the future.

UAV Sensors for Environmental Monitoring

MDPI This book is a printed edition of the Special Issue "UAV Sensors for Environmental Monitoring" that was published in *Sensors*

Future Information Society, The: Social And Technological Problems

World Scientific This book is the first volume of a two-volume edition based on the International Society for Information Studies Summit Vienna 2015 on "The Information Society at the Crossroads. Response and Responsibility of the Sciences of Information" (see summit.is4is.org). The book represents a trans-disciplinary endeavor of the leading experts in the field of information studies posing the question for a better society, in which social and technological innovations help make information key to the flourishing of humanity and dispense with the bleak view of the dark side of information society. It is aimed at readers that conduct research into any aspect of information, information society and information technology, who develop or implement social or technological applications. It is also for those who have an interest in participating in setting the goals for sciences of information and social applications of technological achievements and scientific results.

Robotics in Education

Methods and Applications for Teaching and Learning

[Springer](#) This proceedings volume comprises the latest achievements in research and development in educational robotics presented at the 9th International Conference on Robotics in Education (RIE) held in Qawra, St. Paul's Bay, Malta, during April 18-20, 2018. Researchers and educators will find valuable methodologies and tools for robotics in education that encourage learning in the fields of science, technology, engineering, arts and mathematics (STEAM) through the design, creation and programming of tangible artifacts for creating personally meaningful objects and addressing real-world societal needs. This also involves the introduction of technologies ranging from robotics platforms to programming environments and languages. Extensive evaluation results are presented that highlight the impact of robotics on the students' interests and competence development. The presented approaches cover the whole educative range from elementary school to the university level in both formal as well as informal settings.

Introduction to Autonomous Mobile Robots, second edition

[MIT Press](#) The second edition of a comprehensive introduction to all aspects of mobile robotics, from algorithms to mechanisms. Mobile robots range from the Mars Pathfinder mission's teleoperated Sojourner to the cleaning robots in the Paris Metro. This text offers students and other interested readers an introduction to the fundamentals of mobile robotics, spanning the mechanical, motor, sensory, perceptual, and cognitive layers the field comprises. The text focuses on mobility itself, offering an overview of the mechanisms that allow a mobile robot to move through a real world environment to perform its tasks, including locomotion, sensing, localization, and motion planning. It synthesizes material from such fields as kinematics, control theory, signal analysis, computer vision, information theory, artificial intelligence, and probability theory. The book presents the techniques and technology that enable mobility in a series of interacting modules. Each chapter treats a different aspect of mobility, as the book moves from low-level to high-level details. It covers all aspects of mobile robotics, including software and hardware design considerations, related technologies, and algorithmic techniques. This second edition has been revised and updated throughout, with 130 pages of new material on such topics as locomotion, perception, localization, and planning and navigation. Problem sets have been added at the end of each chapter. Bringing together all aspects of mobile robotics into one volume, *Introduction to Autonomous Mobile Robots* can serve as a textbook or a working tool for beginning practitioners. Curriculum developed by Dr. Robert King, Colorado School of Mines, and Dr. James Conrad, University of North Carolina-Charlotte, to accompany the National Instruments LabVIEW Robotics Starter Kit, are available. Included are 13 (6 by Dr. King and 7 by Dr. Conrad) laboratory exercises for using the LabVIEW Robotics Starter Kit to teach mobile robotics concepts.

Research Anthology on Vocational Education and Preparing Future Workers

[IGI Global](#) Many students across the globe seek further education for future employment opportunities. Vocational schools offer direct training to develop the skills needed for employment. New emphasis has been placed on reskilling the workforce as technology has infiltrated all aspects of business. Teachers must be prepared to teach these new skill requirements to allow students to directly enter the workforce with the necessary competences intact. As the labor market and industry are changing, it is essential to stay current with the best teaching practices within vocational education courses to provide the future workforce with the proper tools and knowledge. The *Research Anthology on Vocational Education and Preparing Future Workers* discusses the development, opportunities, and challenges of vocational education courses and how to best prepare students for future employment. It presents the best practices in curriculum development for vocational education courses and analyzes student outcomes. Covering topics such as industry-academia collaboration, student satisfaction, and competency-based education, this major reference work is an essential resource for academic administration, pre-service teachers, educators of vocational education, libraries, employers, government officials, researchers, and academicians.

Augmented Reality, Virtual Reality, and Computer Graphics

4th International Conference, AVR 2017, Ugento, Italy, June 12-15, 2017, Proceedings, Part I

[Springer](#) The 2-volume set LNCS 10324 and 10325 constitutes the refereed proceedings of the 4th International Conference on Augmented Reality, Virtual Reality, and Computer Graphics, AVR 2017, held in Ugento, Italy, in June

2017. The 54 full papers and 24 short papers presented were carefully reviewed and selected from 112 submissions. The papers are organized in the following topical sections: virtual reality; augmented and mixed reality; computer graphics; human-computer interaction; applications of VR/AR in medicine; and applications of VR/AR in cultural heritage.

Bio-inspired Computation in Unmanned Aerial Vehicles

Springer Science & Business Media **Bio-inspired Computation in Unmanned Aerial Vehicles** focuses on the aspects of path planning, formation control, heterogeneous cooperative control and vision-based surveillance and navigation in Unmanned Aerial Vehicles (UAVs) from the perspective of bio-inspired computation. It helps readers to gain a comprehensive understanding of control-related problems in UAVs, presenting the latest advances in bio-inspired computation. By combining bio-inspired computation and UAV control problems, key questions are explored in depth, and each piece is content-rich while remaining accessible. With abundant illustrations of simulation work, this book links theory, algorithms and implementation procedures, demonstrating the simulation results with graphics that are intuitive without sacrificing academic rigor. Further, it pays due attention to both the conceptual framework and the implementation procedures. The book offers a valuable resource for scientists, researchers and graduate students in the field of Control, Aerospace Technology and Astronautics, especially those interested in artificial intelligence and Unmanned Aerial Vehicles. Professor Haibin Duan and Dr. Pei Li, both work at Beihang University (formerly Beijing University of Aeronautics & Astronautics, BUAA). Prof Duan's academic website is: <http://hbduan.buaa.edu.cn>

Designing Sociable Robots

MIT Press Cynthia Breazeal here presents her vision of the sociable robot of the future, a synthetic creature and not merely a sophisticated tool. A sociable robot will be able to understand us, to communicate and interact with us, to learn from us and grow with us. It will be socially intelligent in a humanlike way. Eventually sociable robots will assist us in our daily lives, as collaborators and companions. Because the most successful sociable robots will share our social characteristics, the effort to make sociable robots is also a means for exploring human social intelligence and even what it means to be human. Breazeal defines the key components of social intelligence for these machines and offers a framework and set of design issues for their realization. Much of the book focuses on a nascent sociable robot she designed named Kismet. Breazeal offers a concrete implementation for Kismet, incorporating insights from the scientific study of animals and people, as well as from artistic disciplines such as classical animation. This blending of science, engineering, and art creates a lifelike quality that encourages people to treat Kismet as a social creature rather than just a machine. The book includes a CD-ROM that shows Kismet in action.

Constructionism in Practice

Designing, Thinking, and Learning in A Digital World

Routledge The digital revolution necessitates, but also makes possible, radical changes in how and what we learn. This book describes a set of innovative educational research projects at the MIT Media Laboratory, illustrating how new computational technologies can transform our conceptions of learning, education, and knowledge. The book draws on real-world education experiments conducted in formal and informal contexts: from inner-city schools and university labs to neighborhoods and after-school clubhouses. The papers in this book are divided in four interrelated sections as follows: * Perspectives in Constructionism further develops the intellectual underpinnings of constructionist theory. This section looks closely at the role of perspective-taking in learning and discusses how both cognitive and affective processes play a central role in building connections between old and new knowledge. * Learning through Design analyzes the relationship between designing and learning, and discusses ways that design activities can provide personally meaningful contexts for learning. This section investigates how and why children can learn through the processes of constructing artifacts such as games, textile patterns, robots and interactive devices. * Learning in Communities focuses on the social aspects of constructionist learning, recognizing that how people learn is deeply influenced by the communities and cultures with which they interact. It examines the nature of learning in classroom, inner-city, and virtual communities. * Learning about Systems examines how students make sense of biological, technological, and mathematical systems. This section explores the conceptual and epistemological barriers to learning about feedback, self-organization, and probability, and it discusses new technological tools and activities that can help people develop new ways of thinking about these phenomena.

New Advances in Mechanisms, Transmissions and Applications

Proceedings of the Second Conference MeTrApp 2013

[Springer Science & Business Media](#) **The Second Conference on Mechanisms, Transmissions and Applications - MeTrApp 2013 was organised by the Mechanical Engineering Department of the University of the Basque Country (Spain) under the patronage of the IFToMM Technical Committees Linkages and Mechanical Controls and Micromachines and the Spanish Association of Mechanical Engineering. The aim of the workshop was to bring together researchers, scientists, industry experts and students to provide, in a friendly and stimulating environment, the opportunity to exchange know-how and promote collaboration in the field of Mechanism and Machine Science. The topics treated in this volume are mechanism and machine design, biomechanics, mechanical transmissions, mechatronics, computational and experimental methods, dynamics of mechanisms and micromechanisms and microactuators.**

Human-Robot Interaction

Evaluation Methods and Their Standardization

[Springer Nature](#) **This book offers the first comprehensive yet critical overview of methods used to evaluate interaction between humans and social robots. It reviews commonly used evaluation methods, and shows that they are not always suitable for this purpose. Using representative case studies, the book identifies good and bad practices for evaluating human-robot interactions and proposes new standardized processes as well as recommendations, carefully developed on the basis of intensive discussions between specialists in various HRI-related disciplines, e.g. psychology, ethology, ergonomics, sociology, ethnography, robotics, and computer science. The book is the result of a close, long-standing collaboration between the editors and the invited contributors, including, but not limited to, their inspiring discussions at the workshop on Evaluation Methods Standardization for Human-Robot Interaction (EMSHRI), which have been organized yearly since 2015. By highlighting and weighing good and bad practices in evaluation design for HRI, the book will stimulate the scientific community to search for better solutions, take advantages of interdisciplinary collaborations, and encourage the development of new standards to accommodate the growing presence of robots in the day-to-day and social lives of human beings.**

Advanced Computational Methods in Life System Modeling and Simulation

International Conference on Life System Modeling and Simulation, LSMS 2017 and International Conference on Intelligent Computing for Sustainable Energy and Environment, ICSEE 2017, Nanjing, China, September 22-24, 2017, Proceedings, Part I

[Springer](#) **The three-volume set CCIS 761, CCIS 762, and CCIS 763 constitutes the thoroughly refereed proceedings of the International Conference on Life System Modeling and Simulation, LSMS 2017, and of the International Conference on Intelligent Computing for Sustainable Energy and Environment, ICSEE 2017, held in Nanjing, China, in September 2017. The 208 revised full papers presented were carefully reviewed and selected from over 625 submissions. The papers of this volume are organized in topical sections on: Biomedical Signal Processing; Computational Methods in Organism Modeling; Medical Apparatus and Clinical Applications; Bionics Control Methods, Algorithms and Apparatus; Modeling and Simulation of Life Systems; Data Driven Analysis; Image and Video Processing; Advanced Fuzzy and Neural Network Theory and Algorithms; Advanced Evolutionary Methods and Applications; Advanced Machine Learning Methods and Applications; Intelligent Modeling, Monitoring, and Control of Complex Nonlinear Systems; Advanced Methods for Networked Systems; Control and Analysis of Transportation Systems; Advanced Sliding Mode Control and Applications; Advanced Analysis of New Materials and Devices; Computational Intelligence in Utilization of Clean and Renewable Energy Resources; Intelligent Methods for Energy Saving and Pollution Reduction; Intelligent Methods in Developing Electric Vehicles, Engines and Equipment; Intelligent Computing and Control in Power Systems; Modeling, Simulation and Control in Smart Grid and Microgrid; Optimization Methods; Computational Methods for Sustainable Environment.**

Ad-hoc Networks and Wireless

ADHOC-NOW 2014 International Workshops, ETSD, MARSS, MWaoN, SecAN, SSPA, and WiSARN, Benidorm, Spain, June 22--27, 2014, Revised Selected Papers

Springer This book constitutes the refereed proceedings of six workshops collocated with the 13th International Conference on Ad-Hoc Networks and Wireless, ADHOC-NOW Workshops 2014, held in Benidorm, Spain, in June 2014. The 25 revised full papers presented were carefully reviewed and selected from 59 submissions. The papers address the following topics: emerging technologies for smart devices; marine sensors and systems; multimedia wireless ad hoc networks; security in ad hoc networks; smart sensor protocols and algorithms; wireless sensor, actuator and robot networks.

Robotics in Education

RiE 2021

Springer Nature This book comprises the latest achievements in research and development in educational robotics presented at the 12th International Conference on Robotics in Education (RiE), which was carried out as a purely virtual conference from April 28 to 30, 2021. Researchers and educators find valuable methodologies and tools for robotics in education that encourage learning in the fields of science, technology, engineering, arts, and mathematics (STEAM) through the design, creation, and programming of tangible artifacts for creating personally meaningful objects and addressing real-world societal needs. This also involves the introduction of technologies ranging from robotics platforms to programming environments and languages. Evaluation results prove the impact of robotics on the students' interests and competence development. The presented approaches cover the whole educative range from kindergarten, primary and secondary school, to the university level and beyond.

International Joint Conference SOCO'16-CISIS'16-ICEUTE'16

San Sebastián, Spain, October 19th-21st, 2016 Proceedings

Springer This volume of *Advances in Intelligent and Soft Computing* contains accepted papers presented at SOCO 2016, CISIS 2016 and ICEUTE 2016, all conferences held in the beautiful and historic city of San Sebastián (Spain), in October 2016. Soft computing represents a collection or set of computational techniques in machine learning, computer science and some engineering disciplines, which investigate, simulate, and analyze very complex issues and phenomena. After a through peer-review process, the 11th SOCO 2016 International Program Committee selected 45 papers. In this relevant edition a special emphasis was put on the organization of special sessions. Two special session was organized related to relevant topics as: Optimization, Modeling and Control Systems by Soft Computing and Soft Computing Methods in Manufacturing and Management Systems. The aim of the 9th CISIS 2016 conference is to offer a meeting opportunity for academic and industry-related researchers belonging to the various, vast communities of Computational Intelligence, Information Security, and Data Mining. The need for intelligent, flexible behaviour by large, complex systems, especially in mission-critical domains, is intended to be the catalyst and the aggregation stimulus for the overall event. After a through peer-review process, the CISIS 2016 International Program Committee selected 20 papers. In the case of 7th ICEUTE 2016, the International Program Committee selected 14 papers.

Education in & with Robotics to Foster 21st-Century Skills

Proceedings of EDUROBOTICS 2020

Springer Nature This book includes papers presented at the International Conference "Educational Robotics in the Maker Era - EDUROBOTICS 2020", Online, February 2021. The contributions cover a variety of topics useful for teacher education and for designing learning by making activities for children and youth, with an emphasis on modern low-cost

technologies (including block-based programming environments, Do-It-Yourself electronics, 3D printed artifacts, the use of intelligent distributed systems, the IoT technology, and gamification) in formal and informal education settings. This collection of contributions (17 chapters and 2 short papers) provides researchers and practitioners the latest advances in educational robotics in a broader sense focusing on science, technology, engineering, arts, and mathematics (STEAM) education. Teachers and educators at any school level can find insights and inspirations into how educational robotics can promote technological interest and 21st-century skills: creativity, critical thinking, team working, and problem-solving with special emphasis on new emerging making technologies.

Advances in Autonomous Robotics

Joint Proceedings of the 13th Annual TAROS Conference and the 15th Annual FIRA RoboWorld Congress, Bristol, UK, August 20-23, 2012, Proceedings

Springer This book constitutes the refereed proceedings of the 13th Conference on Towards Autonomous Robotic Systems, TAROS 2012 and the 15th Robot World Congress, FIRA 2012, held as joint conference in Bristol, UK, in August 2012. The 36 revised full papers presented together with 25 extended abstracts were carefully reviewed and selected from 89 submissions. The papers cover various topics in the field of autonomous robotics.

Robotics in Education

Latest Results and Developments

Springer This proceedings volume highlights the latest achievements in research and development in educational robotics, which were presented at the 8th International Conference on Robotics in Education (RIE 2017) in Sofia, Bulgaria, from April 26 to 28, 2017. The content will appeal to both researchers and educators interested in methodologies for teaching robotics that confront learners with science, technology, engineering, arts and mathematics (STEAM) through the design, creation and programming of tangible artifacts, giving them the chance to create personally meaningful objects and address real-world societal needs. This also involves the introduction of technologies ranging from robotics controllers to virtual environments. In addition, the book presents evaluation results regarding the impact of robotics on students' interests and competence development. The approaches discussed cover the whole educational range, from elementary school to the university level, in both formal as well as informal settings.

Biped Locomotion

Dynamics, Stability, Control and Application

Springer Science & Business Media Here for the first time in one book is a comprehensive and systematic approach to the dynamic modeling and control of biped locomotion robots. A survey is included of various approaches to the control of biped robots, and a new approach to the control of biped systems based on a complete dynamic model is presented in detail. The stability of complete biped system is presented for the first time as a highly nonlinear dynamic system. Also included is new software for the synthesis of a dynamically stable walk for arbitrary biped systems, presented here for the first time. A survey of various realizations of biped systems and numerous numerical examples are given. The reader is given a deep insight into the entire area of biped locomotion. The book covers all relevant approaches to the subject and gives the most complete account to date of dynamic modeling, control and realizations of biped systems.

Interactive Collaborative Robotics

Second International Conference, ICR 2017, Hatfield, UK, September 12-16, 2017, Proceedings

Springer This book constitutes the proceedings of the Second International Conference on Interactive Collaborative Robotics, ICR 2017, held in Hatfield, UK, in September 2017, as a satellite event of the 19th International Conference on Speech and Computer, SPECOM 2017. The 30 papers presented in this volume were carefully reviewed and selected from 51 submissions. This new conference invites researchers in the area of social robotics and collaborative robotics to share experience in human-machine interaction research and development of robotic and cyberphysical systems. Topics addressed are: assistive robots, child-robot interaction, collaborative robotics, educational robotics, human-

robot interaction, medical robotics, robotic mobility systems, robots at home, robot control and communication, social robotics, as well as safety robot behavior.

Embedded Robotics

Mobile Robot Design and Applications with Embedded Systems

[Springer Science & Business Media](#) This book presents a unique examination of mobile robots and embedded systems, from introductory to intermediate level. It is structured in three parts, dealing with Embedded Systems (hardware and software design, actuators, sensors, PID control, multitasking), Mobile Robot Design (driving, balancing, walking, and flying robots), and Mobile Robot Applications (mapping, robot soccer, genetic algorithms, neural networks, behavior-based systems, and simulation). The book is written as a text for courses in computer science, computer engineering, IT, electronic engineering, and mechatronics, as well as a guide for robot hobbyists and researchers.

Children Designers

Interdisciplinary Constructions for Learning and Knowing Mathematics in a Computer-rich School

[Intellect Books](#) In this book, the author presents a new vision of learning through design and production, and describes computer programming as a source of a learning and design power. As means of studying this extended notion of children's programming, the author implemented Instructional Software Design Projects to explore the learning that takes place when students develop complete mathematical software products designed for other students in their school. The results demonstrate that the young designers learned not only about mathematics (fractions) and programming (Logo), but also about design and user interfaces, as well as representational, pedagogical, and communicational issues.

Machine Ethics and Robot Ethics

Once the stuff of science fiction, recent progress in artificial intelligence, robotics, and machine learning means that these rapidly advancing technologies are finally coming into widespread use within everyday life. Such rapid development in these areas also brings with it a host of social, political and legal issues, as well as a rise in public concern and academic interest in the ethical challenges these new technologies pose. This volume is a collection of scholarly work from leading figures in the development of both robot ethics and machine ethics; it includes essays of historical significance which have become foundational for research in these two new areas of study, as well as important recent articles. The research articles selected focus on the control and governance of computational systems; the exploration of ethical and moral theories using software and robots as laboratories or simulations; inquiry into the necessary requirements for moral agency and the basis and boundaries of rights; and questions of how best to design systems that are both useful and morally sound. Collectively the articles ask what the practical ethical and legal issues, arising from the development of robots, will be over the next twenty years and how best to address these future considerations.

Robotics in Education

Current Research and Innovations

This proceedings book gathers the latest achievements and trends in research and development in educational robotics from the 10th International Conference on Robotics in Education (RiE), held in Vienna, Austria, on April 10-12, 2019. It offers valuable methodologies and tools for robotics in education that encourage learning in the fields of science, technology, engineering, arts and mathematics (STEAM) through the design, creation and programming of tangible artifacts for creating personally meaningful objects and addressing real-world societal needs. It also discusses the introduction of technologies ranging from robotics platforms to programming environments and languages and presents extensive evaluations that highlight the impact of robotics on students interests and competence development. The approaches included cover the entire educative range, from the elementary school to the university level in both formal and informal settings.

End-User Development

2nd International Symposium, IS-EUD 2009, Siegen, Germany, March 2-4, 2009, Proceedings

Springer Work practices and organizational processes vary widely and evolve constantly. The technological infrastructure has to follow, allowing or even supporting these changes. Traditional approaches to software engineering reach their limits whenever the full spectrum of user requirements cannot be anticipated or the frequency of changes makes software reengineering cycles too clumsy to address all the needs of a specific field of application. Moreover, the increasing importance of 'infrastructural' aspects, particularly the mutual dependencies between technologies, usages, and domain competencies, calls for a differentiation of roles beyond the classical user-designer dichotomy. End user development (EUD) addresses these issues by offering lightweight, use-time support which allows users to configure, adapt, and evolve their software by themselves. EUD is understood as a set of methods, techniques, and tools that allow users of software systems who are acting as non-professional software developers to create, modify, or extend a software artifact. While programming activities by non-professional actors are an essential focus, EUD also investigates related activities such as collective understanding and sense-making of use problems and solutions, the interaction among end users with regard to the introduction and diffusion of new configurations, or delegation patterns that may also partly involve professional designers.