Love And Sex With Robots The Evolution Of Human Robot Relationships David Nl Levy

Love and Sex with Robots Robot Evolution Evolutionary Robotics Darwin's Devices Robo Sapiens Artificial Intelligence Robots in Space Evolutionary Robotics Complex Behavior in Evolutionary Robotics Symbiotic Multi-Robot Organisms From Darwinian Evolution to Flexible Robot Control Rise of the Self-Replicators *Modeling Communication with Robots and Virtual Humans* Artificial Intelligence: Robot Law, Policy and Ethics Evolution Robots Unlimited *Redundancy in Robot Manipulators and Multi-Robot Systems* Living with Robots Evolutionary Robotics. From Intelligent Robotics to Artificial Life *The Robot's Rebellion* Software Engineering for Robotics Turned On Robot Sex Living with Robots *DK Readers L4 Robot Universe* Language Grounding in Robots Language Grounding in Robots *Robot Universe* Absolute Beginner's Guide to Building Robots Robots All Around Us How Mobile Robots Can Self-Organise a Vocabulary Social Robotics *Evolutionary Computations* The Rod of Light Recent Advances in Soft Computing and Cybernetics The 21st Century Industrial Robot: When Tools Become Collaborators Are Computers Alive? Robot Zombies Bedtime Stories for Robots Advances in Robot Design and Intelligent Control

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Robots Unlimited Jul 20 2021 Consider this: Robots will one day be able to write poetry and prose so touching that it will make men weep; compose dozens or even hundreds of symphonies that will rival the work of Mozart; judge a court case with absolute impartiality and fairness; or even converse with the natural ease of your best friend. Robots will one day be so life-like tha

Robot Evolution Oct 03 2022 Lavishly Illustrated, Comprehensive, Detailed, andReader-Friendly--This is the Ultimate Robot Book! From newlydiscovered designs of Leonardo da Vinci to the pioneeringnineteenth-century work of Nikola Tesla, and on to burgeoninganthropomorphic robots, "anthrobots," that are dextrous,communicative, and autonomous, Robot Evolution covers the lengthand ever-widening breadth of this new robotics field. Acknowledgedrobotics expert Mark Rosheim offers at once a fascinating look atmore than 2,000 years of robot history, as well as a technicalguide to their

development, design, and component parts. This bookexplores the evolution and increasing complexity of robot designsand points out the advantages and disadvantages of various designapproaches for robot arms, hands, wrists, and legs. By analyzingthe kinematics of robot components in comparison to human limbs,Robot Evolution also introduces a powerful new design tool tomeasure and evaluate past, present, and new designs. This bookfeatures: * Robot survey from ancient Greece to the nineteenth century * Analysis of modern robots from 1950 to the present * Comparative anatomy of human and robot joints * Chapter-by-chapter analysis of robot arms, wrists, hands, andlegs * Evolution of sensors and artificial intelligence * Development of mechanical men from man-amplifiers to amazinganthropomorphic robots--anthrobots!

Evolution Aug 21 2021 The present volume is the fourth issue of the Yearbook series entitled 'Evolution'. The title of the present volume is 'From Big Bang to Nanorobots'. In this way we demonstrate that all phases of evolution and Big History are covered in the articles of the present Yearbook. Several articles also present the forecasts about future development. The main objective of our Yearbook as well as of the previous issues is the creation of a unified interdisciplinary field of research in which the scientists specializing in different disciplines could work within the framework of unified or similar paradigms, using the common terminology and searching for common rules, tendencies and regularities. At the same time for the formation of such an integrated field one should use all available opportunities: theories, laws and methods. In the present volume, a number of such approaches are used. The volume consists of four sections: Universal Evolutionary Principles; Biosocial Evolution, Ecological Aspects, and Consciousness; Projects for the Future; In Memoriam. This Yearbook will be useful both for those who study interdisciplinary macroproblems and for specialists working in focused directions, as well as for those who are interested in evolutionary issues of Cosmology, Biology, History, Anthropology, Economics and other areas of study. More than that, this edition will challenge and excite your vision of your own life and the new discoveries going on around us!

Love and Sex with Robots Nov 04 2022 Draws on cutting-edge research, as well as examples from cultural history and psychology, to explore what the author believes will be inevitable physical relationships between people and machines.

Advances in Robot Design and Intelligent Control Jun 26 2019 This book presents the proceedings of the 25th International Conference on Robotics in Alpe-Adria-Danube Region, RAAD 2016 held in Belgrade, Serbia, on June 30th–July 2nd, 2016. In keeping with the tradition of the event, RAAD 2016 covered all the important areas of research and innovation in new robot designs and intelligent robot control, with papers including Intelligent robot motion control; Robot vision and sensory processing; Novel design of robot manipulators and grippers; Robot applications in manufacturing and services; Autonomous systems, humanoid and walking robots; Human–robot interaction and collaboration; Cognitive robots and emotional intelligence; Medical, human-assistive robots and prosthetic design; Robots in construction and arts, and Evolution, education, legal and social issues of robotics. For the first time in RAAD history, the themes cloud robots, legal and ethical issues in robotics as well as robots in arts were included in the technical program. The book is a valuable resource for researchers in fields of robotics, engineers who implement robotic solutions in manufacturing, services and healthcare, and master's and Ph.D. students working on robotics projects.

Robots All Around Us May 06 2020 More and more we see amazing, humanlike robots in the news. For those who have wanted to build and program a robot, an important first step is understanding how they work. Using accessible language and dynamic images, this exciting book explains what robots are fundamentally as well as what they can do. Readers

will discover the many different types of robots and how they are being used in everyday life, including industrial robots, surgical robots, educational robots, and more. Young roboticists will gain an understanding of robots' technological evolution spanning from a century ago to modern day.

Are Computers Alive? Sep 29 2019

Evolutionary Robotics. From Intelligent Robotics to Artificial Life Apr 16 2021 This book constitutes the refereed proceedings of the 8th International Symposium on Evolutionary Robotics, ER 2001, held in Tokyo, Japan, in October 2001. The seven revised full papers by the invited speakers Rodney A. Brooks, Dario Floreano, Robert J. Full, Inman Harvey, Owen Holland, Francesco Mondada, and Jordan B. Pollack were carefully selected and revised for presentation in the book. Among the topics addressed are imitation of life and machine consciousness, autonomous vision-based robots, evolved robots, living machines, artificial evolution, bioinspired artificial life locomotion, and mobile robotic systems engineering.

From Darwinian Evolution to Flexible Robot Control Dec 25 2021 Since the early days of civilization, scientists have been striving to identify the best from a set of possible alternatives. Such concept of optimization had been practiced by the Ancient Egyptians when building their pyramids and by Euclid of Alexandria when defining the shortest distance between a point and a line. The purpose of this book is to take the reader on a journey starting from Darwin's theory of evolution and ending in its modern application in robot control. Special emphasis is given to genetic algorithms (GAs) and their role in optimization. This comprises their history, structure, strengths, limitations as well as their application to the vibration and position control of flexible robot manipulators. Aside from being an informative text, the book aims at presenting the author's ideas for the enhancement of GAs. Two new techniques are presented: MAGA and EGA. The results show that the latter set a promising ground for further applications involving complex mathematical functions, multiple link robots and on-line control. This is due to its fast convergence, high precision and its ability to combine the merits of both global and local search methods.

Recent Advances in Soft Computing and Cybernetics Dec 01 2019 This monograph is intended for researchers and professionals in the fields of computer science and cybernetics. Nowadays, the areas of computer science and cybernetics (mainly its artificial intelligence branches) are subject to an immense degree of study and are applied in a wide range of technical and industrial projects. The individual chapters of this monograph were developed from a series of invited lectures at the Brno University of Technology in the years 2018 and 2019. The main aim of these lectures was to create an opportunity for students, academics, and professionals to exchange ideas, novel research methods, and new industrial applications in the fields related to soft computing and cybernetics. The authors of these chapters come from around the world and their works cover both new theoretical and application-oriented results from areas such as automation, control, robotics, optimization, statistics, reinforcement learning, image processing, and evolutionary algorithms.

Robo Sapiens Jun 30 2022 Information about intelligent robots and their makers, including photographis, interviews, behind-the-scenes information and technical date about machines that is easy to understand.

Rise of the Self-Replicators Nov 23 2021 Is it possible to design robots and other machines that can reproduce and evolve? And, if so, what are the implications: for the machines, for ourselves, for our environment, and for the future of life on Earth and elsewhere? In this book the authors provide a chronological survey and comprehensive archive of the early history of thought about machine self-reproduction and evolution.

They discuss contributions from philosophy, science fiction, science and engineering, and uncover many examples that have never been discussed in the Artificial Intelligence and Artificial Life literature before now. In the final chapter they provide a synthesis of the concepts discussed, offer their views on the field's future directions, and call for a broad community discussion about the significant implications of intelligent evolving machines. The book will be of interest to general readers, and a valuable resource for researchers, practitioners, and historians engaged with ideas in artificial intelligence, artificial life, robotics, and evolutionary computing.

Complex Behavior in Evolutionary Robotics Feb 24 2022 Today, autonomous robots are used in a rather limited range of applications such as exploration of inaccessible locations, cleaning floors, mowing lawns etc. However, ongoing hardware improvements (and human fantasy) steadily reveal new robotic applications of significantly higher sophistication. For such applications, the crucial bottleneck in the engineering process tends to shift from physical boundaries to controller generation. As an attempt to automatize this process, Evolutionary Robotics has successfully been used to generate robotic controllers of various types. However, a major challenge of the field remains the evolution of truly complex behavior. Furthermore, automatically created controllers often lack analyzability which makes them useless for safety-critical applications. In this book, a simple controller model based on Finite State Machines is proposed which allows a straightforward analysis of evolved behaviors. To increase the model's evolvability, a procedure is introduced which, by adapting the genotype-phenotype mapping at runtime, efficiently traverses both the behavioral search space as well as (recursively) the search space of genotype-phenotype mappings. Furthermore, a data-driven mathematical framework is proposed which can be used to calculate the expected success of evolution in complex environments.

How Mobile Robots Can Self-Organise a Vocabulary Apr 04 2020 One of the hardest problems in science is the symbol grounding problem, a question that has intrigued philosophers and linguists for more than a century. With the rise of artificial intelligence, the question has become very actual, especially within the field of robotics. The problem is that an agent, be it a robot or a human, perceives the world in analogue signals. Yet humans have the ability to categorise the world in symbols that they, for instance, may use for language. This book presents a series of experiments in which two robots try to solve the symbol grounding problem. The experiments are based on the language game paradigm, and involve real mobile robots that are able to develop a grounded lexicon about the objects that they can detect in their world. Crucially, neither the lexicon nor the ontology of the robots has been preprogrammed, so the experiments demonstrate how a population of embodied language users can develop their own vocabularies from scratch.

Absolute Beginner's Guide to Building Robots Jun 06 2020 This is the eBook version of the printed book. If the print book includes a CD-ROM, this content is not included within the eBook version. A real-world business book for the explosion of eBay entrepreneurs! Absolute Beginner's Guide to Launching an eBay Business guides you step-by-step through the process of setting up an eBay business, and offers real-world advice on how to run that business on a day-to-day basis and maximize financial success. This book covers determining what kind of business to run, writing an action-oriented business plan, establishing an effective accounting system, setting up a home office, obtaining starting inventory, arranging initial funding, establishing an eBay presence, and arranging for automated post-auction management.

***DK Readers L4 Robot Universe* Oct 11 2020 Robot Universe takes the reader on a discovery of fascinating modern-day robots, and gives the reader a look at the past, and future of robotic evolution. A thrilling introduction to the capabilities of robots and the**

computers that control them, from space rovers to robots that perform surgery. Meet Pepper, the first robot able to show and understand human emotions, all in one book! Robot Universe unravels a world populated with advanced robots that help assist human understanding and discovery. Filled with engaging topics, interactive pages and fun facts. Explore the capabilities of robots and the computers that control them. This nonfiction book is perfect for independent young readers aged 9-11. Robot Universe is part of DK Readers for Level 4 readers. The innovative range combines a highly visual approach with non-fiction narratives that children will love reading. Level 4 reader books are for independent readers, structured by simple sentences with an emphasis on frequently used words and visual prompts. Learn To Read, Then Read To Learn. Have you ever wondered if robots can think like humans? Robot Universe is packed with fascinating facts about robots and images kids will love. Explore the science behind artificial intelligence and what their capabilities really are. This exciting book for kids combines literature and fun. Teach young readers about the advancement of robots in today's age while expanding on how robots can perform human tasks and display human reactions and emotions. Robot Universe will expand your readers understanding about: - What is a robot? - Early robots - Developments in robotics - Humanoids - What is artificial intelligence? - Robot learning - Inventing a robot The DK Readers series is trusted by parents, teachers and librarians, and loved by kids. This updated and revised series engages nonfiction subjects that are clearly explained, described visually and brought to life with true encounters.

The Rod of Light Jan 02 2020 Robot evolution has advanced to the point that intelligent robots have liberated themselves from servitude, defending themselves from servitude, defending themselves against the humans who work to exterminate them using super-machines. The ultimate hope of the most powerfully intelligent robots lies in the attainment of human consciousness. And they are willing to steal men's souls if they must, to get this final elusive quality for themselves. Only one free robot, Jasperodus, has been granted true consciousness - a soul - by his maker, now long dead. Brought into the soul research project by force, Jasperodus faces a moral dilemma: to release his secret and bring about the final downfall of humanity to a new race of super-robots, or to keep his own kind forever from the light of consciousness. And the mechanized armies of the humans press ever forward, seeking the robot hideout.

Evolutionary Robotics Sep 02 2022 This invaluable book comprehensively describes evolutionary robotics and computational intelligence, and how different computational intelligence techniques are applied to robotic system design. It embraces the most widely used evolutionary approaches with their merits and drawbacks, presents some related experiments for robotic behavior evolution and the results achieved, and shows promising future research directions. Clarity of explanation is emphasized such that a modest knowledge of basic evolutionary computation, digital circuits and engineering design will suffice for a thorough understanding of the material. The book is ideally suited to computer scientists, practitioners and researchers keen on computational intelligence techniques, especially the evolutionary algorithms in autonomous robotics at both the hardware and software levels. Sample Chapter(s). Chapter 1: Artificial Evolution Based Autonomous Robot Navigation (184 KB). Contents: Artificial Evolution Based Autonomous Robot Navigation; Evolvable Hardware in Evolutionary Robotics; FPGA-Based Autonomous Robot Navigation via Intrinsic Evolution; Intelligent Sensor Fusion and Learning for Autonomous Robot Navigation; Task-Oriented Developmental Learning for Humanoid Robots; Bipedal Walking Through Reinforcement Learning; Swing Time Generation for Bipedal Walking Control Using GA Tuned Fuzzy Logic Controller; Bipedal Walking: Stance Ankle Behavior Optimization Using Genetic Algorithm. Readership: Researchers in evolutionary robotics, and graduate and advanced undergraduate students in

computational intelligence.

Living with Robots Nov 11 2020 Living with Robots: Emerging Issues on the Psychological and Social Implications of Robotics focuses on the issues that come to bear when humans interact and collaborate with robots. The book dives deeply into critical factors that impact how individuals interact with robots at home, work and play. It includes topics ranging from robot anthropomorphic design, degree of autonomy, trust, individual differences and machine learning. While other books focus on engineering capabilities or the highly conceptual, philosophical issues of human-robot interaction, this resource tackles the human elements at play in these interactions, which are essential if humans and robots are to coexist and collaborate effectively. Authored by key psychology robotics researchers, the book limits its focus to specifically those robots who are intended to interact with people, including technology such as drones, self-driving cars, and humanoid robots. Forward-looking, the book examines robots not as the novelty they used to be, but rather the practical idea of robots participating in our everyday lives. Explores how individual differences in cognitive abilities and personality influence human-robot interaction Examines the human response to robot autonomy Includes tools and methods for the measurement of social emotion with robots Delves into a broad range of domains - military, caregiving, toys, surgery, and more Anticipates the issues we will encountering with robots in the next ten years Foreword by Maggie Jackson

Evolutionary Computations **Feb 01 2020 Evolutionary Computation, a broad field that includes Genetic Algorithms, Evolution Strategies, and Evolutionary Programming, has proven to offer well-suited techniques for industrial and management tasks - therefore receiving considerable attention fom scientists and engineers during the last decade. This monograph develops and analyzes evolutionary algorithms that can be successfully applied to real-world problems such as robotic control. Although of particular interest to robotic control engineers, "Evolutionary Computations" also may interest the large audience of researchers, engineers, designers and graduate students confronted with complicated optimization tasks.**

Symbiotic Multi-Robot Organisms Jan 26 2022 This book examines the evolution of self-organised multicellular structures, and the remarkable transition from unicellular to multicellular life. It shows the way forward in developing new robotic entities that are versatile, cooperative and self-configuring.

Robot Universe **Jul 08 2020 Discover cutting edge robots and investigate what they do. Dive into the science behind artificial intelligence, explore the capabilities of robots and the computers that control them, from drones to Pepper, the robot companion for humans. DK's innovative range of levelled readers combines a highly visual approach with non-fiction narratives that children will love reading. DK Reader Robot Universe is a level 4 reader, Reading Alone, offering a delightful narrative for young children to encourage an interest in and desire to read. Simple sentences are used with an emphasis on frequently used words with strong visual clues and labels introducing and reinforcing vocabulary. Find out about the cutting edge robots of today with DK Reader Robot Universe. Packed with facts kids will love reading.**

Artificial Intelligence: Robot Law, Policy and Ethics Sep 21 2021 In Artificial Intelligence: Robot Law, Policy and Ethics, Dr. Nathalie Rébé discusses the legal and contemporary issues in relation to creating conscious robots. This book provides an in-depth analysis of the existing regulatory tools, as well as a new comprehensive framework for regulating Strong AI.

The Robot's Rebellion **Mar 16 2021 Responds to the idea that humans are merely survival mechanisms for their own genes, providing the tools to advance human interests over the interests of the replicators through rational self-determination.**

Modeling Communication with Robots and Virtual Humans **Oct 23 2021 Embodied agents play an increasingly important role in cognitive interaction technology. The two main types of embodied agents are virtual humans inhabiting simulated environments and humanoid robots inhabiting the real world. So far research on embodied communicative agents has mainly explored their potential for practical applications. However, the design of communicative artificial agents can also be of great heuristic value for the scientific study of communication. It allows researchers to isolate, implement, and test essential properties of inter-agent communications in operational models. Modeling communication with robots and virtual humans thus involves the vision of using communicative machines as research tools. Artificial systems that reproduce certain aspects of natural, multimodal communication help to elucidate the internal mechanisms that give rise to different aspects of communication. In short, constructing embodied agents who are able to communicate may help us to understand the principles of human communication. As a comprehensive theme, "Embodied Communication in Humans and Machines" was taken up by an international research group hosted by Bielefeld University's Center for Interdisciplinary Research (ZiF – Zentrum für interdisziplinäre Forschung) from October 2005 through September 2006. The overarching goal of this research year was to develop an integrated perspective of embodiment in communication, establishing bridges between lower-level, sensorimotor functions and a range of higher-level, communicative functions involving language and bodily action. The present volume grew out of a workshop that took place during April 5–8, 2006 at the ZiF as a part of the research year on embodied communication.**

Artificial Intelligence May 30 2022 An introduction to the past, present, and future of artificial intelligence and robotics, discussing early science fiction predictions, the dawn of AI, and today's use of robots in factories and space exploration.

Language Grounding in Robots Sep 09 2020 Written by leading international experts, this volume presents contributions establishing the feasibility of human language-like communication with robots. The book explores the use of language games for structuring situated dialogues in which contextualized language communication and language acquisition can take place. Within the text are integrated experiments demonstrating the extensive research which targets artificial language evolution. Language Grounding in Robots uses the design layers necessary to create a fully operational communicating robot as a framework for the text, focusing on the following areas: Embodiment; Behavior; Perception and Action; Conceptualization; Language Processing; Whole Systems Experiments. This book serves as an excellent reference for researchers interested in further study of artificial language evolution.

The 21st Century Industrial Robot: When Tools Become Collaborators Oct 30 2019 This book aims to discuss the technical and ethical challenges posed by the present technological framework and to highlight the fundamental role played by human-centred design and human factors in the definition of robotic architectures for human–robot collaboration. The book gives an updated overview of the most recent robotic technology, conceived and designed to collaborate with human beings in industrial working scenarios. The technological development of robotics over the last years and the fast evolution of AI, machine learning and IoT have paved the way for applications that extend far beyond the typical use of robots performing repetitive tasks in exclusive spaces. In this new technological paradigm that is expected to drive the robotics market in the coming years, robots and workers will coexist in the same workplace, sharing not only this lived space, but also the roles and functions inherent to a process of production, merging the benefits of automated and manual performing. However, having robots cooperating in real time with workers, responding in a physical, psychological and social adequate way, requires a

human-centred design that not only calls for high safety standards regulating the quality of human–robot interaction, but also demands the robot's fine-grained perception and awareness of the dynamics of its surrounding environment, namely the behaviours of their human peers—their expected actions/responses—fostering the necessary collaborative efforts towards the accomplishment of the tasks to be executed.

Robot Sex Dec 13 2020 Perspectives from philosophy, psychology religious studies, economics, and law on the possible future of robot-human sexual relationships. Sexbots are coming. Given the pace of technological advances, it is inevitable that realistic robots specifically designed for people's sexual gratification will be developed in the not-too-distant future. Despite popular culture's fascination with the topic, and the emergence of the much-publicized Campaign Against Sex Robots, there has been little academic research on the social, philosophical, moral, and legal implications of robot sex. This book fills the gap, offering perspectives from philosophy, psychology, religious studies, economics, and law on the possible future of robot-human sexual relationships. Contributors discuss what a sex robot is, if they exist, why we should take the issue seriously, and what it means to "have sex" with a robot. They make the case for developing sex robots, arguing for their beneficial nature, and the case against it, on religious and moral grounds; they consider the subject from the robot's perspective, addressing such issues as consent and agency; and they ask whether it is possible for a human to form a mutually satisfying, loving relationship with a robot. Finally, they speculate about the future of human-robot sexual interaction, considering the social acceptability of sex robots and the possible effect on society. Contributors Marina Adshade, Thomas Arnold, Julie Carpenter, John Danaher, Brian Earp, Lily Eva Frank, Joshua Goldstein, Michael Hauskeller, Noreen Herzfeld, Neil McArthur, Mark Migotti, Sven Nyholm, Ezio di Nucci, Steve Petersen, Anders Sandberg, Matthias Scheutz, Litska Strikwerda, Nicole Wyatt

Darwin's Devices Aug 01 2022 What happens when we let robots play the game of life? The challenge of studying evolution is that the history of life is buried in the past -- we can't witness the dramatic events that shaped the adaptations we see today. But biorobotics expert John Long has found an ingenious way to overcome this problem: he creates robots that look and behave like extinct animals, subjects them to evolutionary pressures, lets them compete for mates and resources, and mutates their &"genes";. In short, he lets robots play the game of life.In Darwin's Devices, Long tells the story of these evolving biorobots -- how they came to be, and what they can teach us about the biology of living and extinct species. Evolving biorobots can replicate creatures that disappeared from the earth long ago, showing us in real time what happens in the face of unexpected environmental challenges. Biomechanically correct models of backbones functioning as part of an autonomous robot, for example, can help us understand why the first vertebrates evolved them.But the most impressive feature of these robots, as Long shows, is their ability to illustrate the power of evolution to solve difficult technological challenges autonomously -- without human input regarding what a workable solution might be. Even a simple robot can create complex behavior, often learning or evolving greater intelligence than humans could possibly program. This remarkable idea could forever alter the face of engineering, design, and even warfare. An amazing tour through the workings of a fertile mind, Darwin's Devices will make you rethink everything you thought you knew about evolution, robot intelligence, and life itself.

Robot Zombies Aug 28 2019 How advanced is the technology that exists today, what are we using it for, and can machines turn on their human creators? What is transcendence and why will we all be familiar with it? Technology is growing exponentially and the moment when it merges with the human mind, called "The Singularity," is visible in our

imminent future. Can humans, limited by slow biological evolution, compete with synthetic intelligence? Science and technology are pushing forward, transforming life as we know it—perhaps even giving humans a shot of immortality. Who will benefit from this? Where did the idea of robots originate and why are humans fearful of decision-making robots that may be able to create goals and objectives, and work toward achieving them? This book examines the history and future of robotics, artificial intelligence, zombies and a Transhumanist utopia/dystopia integrating man with machine. How did it all begin, and what's in store for humans today, in the near future, and in the distant future? Haze and Eguino explore the fascinating role of artificial intelligence from a practical human perspective and discover that the mind-altering process necessary to accept and integrate with the inevitable is already underway, molding human consciousness. 4-Page Color Section.

Social Robotics Mar 04 2020 The papers in this volume were the fruitful scientific results of the Second International Conference on Social Robotics (ICSR), held during November 23–24, 2010 in Singapore, which was jointly organized by the Social Robotics Laboratory (SRL), Interactive Digital Media Institute (IDMI), the National University of Singapore and 2 Human Language Technology Department, the Institute for Infocomm Research (I R), A*STAR, Singapore. These papers address a range of topics in social robotics and its applications. We received paper submissions from America, Asia, and Europe. All the papers were reviewed by at least three referees from the 32-member Program Committee who were assembled from the global community of social robotics researchers. This v- ume contains the 42 papers that were selected to report on the latest developments and studies of social robotics in the areas of human--robot interaction; affective and cognitive sciences for interactive robots; design philosophies and software archit- tures for robots; learning, adaptation and evolution of robotic intelligence; and mec- tronics and intelligent control.

Turned On Jan 14 2021 An exploration of sexuality, technology, and humanity through the promises of artificial intelligence. The idea of the seductive sex robot is the stuff of myth, legend and science fiction. But beyond the fantasies there are real and fundamental questions about our relationship with technology as it moves into the realm of robotics. Artificial intelligence raises very real concerns. Sexual activity is central to our very existence; it shapes how we think, how we act and how we live. With advances in technology come machines that may one day think independently. What will happen to us when we form close relationships with these intelligent systems? Chapter by chapter, this book builds on the science and the philosophy surrounding our most intimate relationship with technology. The scene is set with the history of the artificial sexual companion, then goes on to explore the "modern" robot and the twentieth century sci-fi that promised us our own robot slaves. An explanation of artificial intelligence and the urge to create sentient machines delves into our own psychology: how does desire affect our own behavior, and can we become attached to an inanimate object? Can robots make society a better place? And what can go wrong? Sex robots are here, and here to stay--and more are coming. This book explores how the emerging and future development of sexual companion robots might affect us, and our society. It explores the social changes arising from emerging technologies, and our relationships with the machines that may someday care for us and about us.

Language Grounding in Robots Aug 09 2020 Written by leading international experts, this volume presents contributions establishing the feasibility of human language-like communication with robots. The book explores the use of language games for structuring situated dialogues in which contextualized language communication and language acquisition can take place. Within the text are integrated experiments demonstrating the

extensive research which targets artificial language evolution. Language Grounding in Robots uses the design layers necessary to create a fully operational communicating robot as a framework for the text, focusing on the following areas: Embodiment; Behavior; Perception and Action; Conceptualization; Language Processing; Whole Systems Experiments. This book serves as an excellent reference for researchers interested in further study of artificial language evolution.

Evolutionary Robotics Mar 28 2022 An overview of the basic concepts and methodologies of evolutionary robotics, which views robots as autonomous artificial organisms that develop their own skills in close interaction with the environment and without human intervention.

***Redundancy in Robot Manipulators and Multi-Robot Systems* Jun 18 2021 The trend in the evolution of robotic systems is that the number of degrees of freedom increases. This is visible both in robot manipulator design and in the shift of focus from single to multi-robot systems. Following the principles of evolution in nature, one may infer that adding degrees of freedom to robot systems design is beneficial. However, since nature did not select snake-like bodies for all creatures, it is reasonable to expect the presence of a certain selection pressure on the number of degrees of freedom. Thus, understanding costs and benefits of multiple degrees of freedom, especially those that create redundancy, is a fundamental problem in the field of robotics. This volume is mostly based on the works presented at the workshop on Redundancy in Robot Manipulators and Multi-Robot Systems at the IEEE/RSJ International Conference on Intelligent Robots and Systems - IROS 2011. The workshop was envisioned as a dialog between researchers from two separate, but obviously related fields of robotics: one that deals with systems having multiple degrees of freedom, including redundant robot manipulators, and the other that deals with multirobot systems. The volume consists of twelve chapters, each representing one of the two fields.**

Living with Robots May 18 2021 Living with Robots recounts a foundational shift in robotics, from artificial intelligence to artificial empathy, and foreshadows an inflection point in human evolution. As robots engage with people in socially meaningful ways, social robotics probes the nature of the human emotions that social robots are designed to emulate.

Software Engineering for Robotics Feb 12 2021 The topics covered in this book range from modeling and programming languages and environments, via approaches for design and verification, to issues of ethics and regulation. In terms of techniques, there are results on model-based engineering, product lines, mission specification, component-based development, simulation, testing, and proof. Applications range from manufacturing to service robots, to autonomous vehicles, and even robots than evolve in the real world. A final chapter summarizes issues on ethics and regulation based on discussions from a panel of experts. The origin of this book is a two-day event, entitled RoboSoft, that took place in November 2019, in London. Organized with the generous support of the Royal Academy of Engineering and the University of York, UK, RoboSoft brought together more than 100 scientists, engineers and practitioners from all over the world, representing 70 international institutions. The intended readership includes researchers and practitioners with all levels of experience interested in working in the area of robotics, and software engineering more generally. The chapters are all self-contained, include explanations of the core concepts, and finish with a discussion of directions for further work. Chapters 'Towards Autonomous Robot Evolution', 'Composition, Separation of Roles and Model-Driven Approaches as Enabler of a Robotics Software Ecosystem' and 'Verifiable Autonomy and Responsible Robotics' are available open access under a Creative Commons Attribution 4.0 International License via

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Robots in Space Apr 28 2022 2008 Outstanding Academic Title, Choice Magazine Given the near incomprehensible enormity of the universe, it appears almost inevitable that humankind will one day find a planet that appears to be much like the Earth. This discovery will no doubt reignite the lure of interplanetary travel. Will we be up to the task? And, given our limited resources, biological constraints, and the general hostility of space, what shape should we expect such expeditions to take? In Robots in Space, Roger Launius and Howard McCurdy tackle these seemingly fanciful questions with rigorous scholarship and disciplined imagination, jumping comfortably among the worlds of rocketry, engineering, public policy, and science fantasy to expound upon the possibilities and improbabilities involved in trekking across the Milky Way and beyond. They survey the literature—fictional as well as academic studies; outline the progress of space programs in the United States and other nations; and assess the current state of affairs to offer a conclusion startling only to those who haven't spent time with Asimov, Heinlein, and Clarke: to traverse the cosmos, humans must embrace and entwine themselves with advanced robotic technologies. Their discussion is as entertaining as it is edifying and their assertions are as sound as they are fantastical. Rather than asking us to suspend disbelief, Robots in Space demands that we accept facts as they evolve.

Bedtime Stories for Robots Jul 28 2019 Robots are not coming. Robots are already here. They are here to stay because they operate our smartphones and refrigerators, our airplanes and nuclear power plants. We can't live without them. Robots undergo an assisted evolution process. Their evolution approaches the tipping point when their humanlike intelligence will evolve. We witness many signs of it now. The evolution of robots is assisted by people. So far the assistance was limited to technical issues. Now it is time to take care about the morale of our new children. Robots are our children. As any children they need love. Yet we are afraid of them. We don't accept them as our children. This attitude should be changed if we want our children to love us. Let's start with telling them a good bedtime story.