THE HORIZONS OF EVOLUTIONARY ROBOTICS AUTHOR PATRICIA A VARGAS MAY 2014 (DOWNLOAD ONLY)

The Horizons of Evolutionary Robotics

An authoritative overview of current research in this exciting interdisciplinary field.

Living with Robots

The truth about robots: two experts look beyond the hype, offering a lively and accessible guide to what robots can (and can't) do. There’s a lot of hype about robots; some of it is scary and some of it utopian. In this accessible book, two robotics experts reveal the truth about what robots can and can’t do, how they work, and what we can reasonably expect their future capabilities to be. It will not only make you think differently about the capabilities of robots; it will make you think differently about the capabilities of humans. Ruth Aylett and Patricia Vargas discuss the history of our fascination with robots—from chatbots and prosthetics to autonomous cars and robot swarms. They show us the ways in which robots outperform humans and the ways they fall woefully short of our superior talents. They explain how robots see, feel, hear, think, and learn; describe how robots can cooperate; and consider robots as pets, butlers, and companions. Finally, they look at robots that raise ethical and social issues: killer robots, sexbots, and robots that might be gunning for your job. Living with Robots equips readers to look at robots concretely—as human-made artifacts rather than placeholders for our anxieties. Find out: •Why robots can swim and fly but find it difficult to walk •Which robot features are inspired by animals and insects •Why we develop feelings for robots •Which human abilities are hard for robots to emulate

Evolutionary Robotics

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.

Foundations of Statistical Natural Language Processing

Statistical approaches to processing natural language text have become dominant in recent years. This foundational text is the first comprehensive introduction to statistical natural language processing (NLP) to appear. The book contains all the theory and algorithms needed for building NLP tools. It provides broad but rigorous coverage of mathematical and linguistic foundations, as well as detailed discussion of statistical methods, allowing students and researchers to construct their own implementations. The book covers collocation finding, word sense disambiguation, probabilistic parsing, information retrieval, and other applications.

Drawing Futures

Drawing Futures brings together international designers and artists for speculations in contemporary drawing for art and architecture.Despite numerous developments in technological manufacture and computational

design that provide new grounds for designers, the act of drawing still plays a central role as a vehicle for speculation. There is a rich and long history of drawing tied to innovations in technology as well as to revolutions in our philosophical understanding of the world. In reflection of a society now underpinned by computational networks and interfaces allowing hitherto unprecedented views of the world, the changing status of the drawing and its representation as a political act demands a platform for reflection and innovation. Drawing Futures will present a compendium of projects, writings and interviews that critically reassess the act of drawing and where its future may lie.Drawing Futures focuses on the discussion of how the field of drawing may expand synchronously alongside technological and computational developments. The book coincides with an international conference of the same name, taking place at The Bartlett School of Architecture, UCL, in November 2016. Bringing together practitioners from many creative fields, the book discusses how drawing is changing in relation to new technologies for the production and dissemination of ideas.

Enaction and Ecological Psychology: Convergences and Complementarities

This book reports on research and developments in human-technology interaction. A special emphasis is given to human-computer interaction, and its implementation for a wide range of purposes such as healthcare, aerospace, telecommunication, and education, among others. The human aspects are analyzed in detail. Timely studies on human-centered design, wearable technologies, social and affective computing, augmented, virtual and mixed reality simulation, human rehabilitation and biomechanics represent the core of the book. Emerging technology applications in business, security, and infrastructure are also critically examined, thus offering a timely, scientifically-grounded, but also professionally-oriented snapshot of the current state of the field. The book is based on contributions presented at the 3rd International Conference on Human Interaction and Emerging Technologies: Future Applications, IHIET 2020, held on August 27-29, 2020. It offers a timely survey and a practice-oriented reference guide to researchers and professionals dealing with design and/or management of the new generation of service systems.

Human Interaction, Emerging Technologies and Future Applications III

Based on recent theoretical developments in the enactive approach to life and mind, this book elaborates a series of contributions to a non-representational theory of action and perception. These enactive ideas are applied and extended to provide a theory rich, naturalistic account of the sensorimotor meaning and agency.

Sensorimotor Life

This volume contains a selection of the best papers presented at the 8th International Conference on Industrial Engineering and Industrial Management, XX International Conference on Industrial Engineering and Operations Management, and International IIE Conference 2014, hosted by ADINGOR, ABEPRO and the IIE, whose mission is to promote links between researchers and practitioners from different branches, to enhance an interdisciplinary perspective of industrial engineering and management. The conference topics covered: operations research, modelling and simulation, computer and information systems, operations research, scheduling and sequencing, logistics, production and information systems, supply chain and logistics, transportation, lean management, production planning and control, production system design, reliability and maintenance, quality management, sustainability and eco-efficiency, marketing and consumer behavior, business administration and strategic management, economic and financial management, technological and organizational innovation, strategy and entrepreneurship, economics engineering, enterprise engineering, global operations and cultural factors, operations strategy and performance, management social responsibility, environment and sustainability. This book will be of interest to researchers and practitioners working in any of the fields mentioned above.

Enhancing Synergies in a Collaborative Environment

Projects that bring the ‘hard’ sciences into art are increasingly being exhibited in galleries and museums across the world. In a surge of publications on the subject, few focus on regions beyond Europe and the Anglophone world. Decolonizing Science in Latin American Art assembles a new corpus of art-science projects by Latin American artists, ranging from big-budget collaborations with NASA and MIT to homegrown experiments in artists’ kitchens. While they draw on recent scientific research, these art projects also ‘decolonize’ science. If increasing knowledge of the natural world has often gone hand-in-hand with our objectification and exploitation of it, the artists studied here emphasize the subjectivity and intelligence of other species, staging new forms of collaboration and co-creativity beyond the human. They design technologies that work with organic processes to promote the health of ecosystems, and seek alternatives to the logics of extractivism and monoculture farming that have caused extensive ecological damage in Latin America. They develop do-it-yourself, open-source, commons-based practices for sharing creative and intellectual property. They establish critical dialogues between Western science and indigenous thought, reconnecting a disembedded, abstracted form of knowledge with the cultural, social, spiritual, and ethical spheres of experience from which it has often been excluded. Decolonizing Science in Latin American Art interrogates how artistic practices may communicate, extend, supplement, and challenge scientific ideas. At the same time, it explores broader questions in the field of art, including the relationship between knowledge, care, and curation; nonhuman agency; art and utility; and changing approaches to participation. It also highlights important contributions by Latin American thinkers to themes of global significance, including the Anthropocene, climate change and environmental justice.

Decolonizing Science in Latin American Art

The first textbook on micron-scale mobile robotics, introducing the fundamentals of design, analysis, fabrication, and control, and drawing on case studies of existing approaches. Progress in micro- and nano-scale science and technology has created a demand for new microsystems for high-impact applications in healthcare, biotechnology, manufacturing, and mobile sensor networks. The new robotics field of microrobotics has emerged to extend our interactions and explorations to sub-millimeter scales. This is the first textbook on micron-scale mobile robotics, introducing the fundamentals of design, analysis, fabrication, and control, and drawing on case studies of existing approaches. The book covers the scaling laws that can be used to determine the dominant forces and effects at the micron scale; models forces acting on microrobots, including surface forces, friction, and viscous drag; and describes such possible microfabrication techniques as photo-lithography, bulk micromachining, and deep reactive ion etching. It presents on-board and remote sensing methods, noting that remote sensors are currently more feasible; studies possible on-board microactuators; discusses self-propulsion methods that use self-generated local gradients and fields or biological cells in liquid environments; and describes remote microrobot actuation methods for use in limited spaces such as inside the human body. It covers possible on-board powering methods, indispensable in future medical and other applications; locomotion methods for robots on surfaces, in liquids, in air, and on fluid-air interfaces; and the challenges of microrobot localization and control, in particular multi-robot control methods for magnetic microrobots. Finally, the book addresses current and future applications, including noninvasive medical diagnosis and treatment, environmental remediation, and scientific tools.

Mobile Microrobotics

Fun and Software offers the untold story of fun as constitutive of the culture and aesthetics of computing. Fun in computing is a mode of thinking, making and experiencing. It invokes and convolutes the question of rationalism and logical reason, addresses the sensibilities and experience of computation and attests to its creative drives. By exploring topics as diverse as the pleasure and pain of the programmer, geek wit, affects of play and coding as a bodily pursuit of the unique in recursive structures, Fun and Software helps construct a different point of entry to the understanding of software as culture. Fun is a form of production that touches on the foundations of formal logic and precise notation as well as rhetoric, exhibiting connections between computing and paradox, politics and aesthetics. From the formation of the discipline of programming as an outgrowth of pure mathematics to its manifestation in contemporary and contradictory forms such as gaming,

data analysis and art, fun is a powerful force that continues to shape our life with software as it becomes the key mechanism of contemporary society. Including chapters from leading scholars, programmers and artists, Fun and Software makes a major contribution to the field of software studies and opens the topic of software to some of the most pressing concerns in contemporary theory.

Fun and Software

In this book the use of ER techniques for the design of self-organising group behaviours, for both simulated and real robots is introduced. The book tries to mediate between two apparently opposed perspectives: engineering and cognitive science. The experiments presented in the book and the results obtained contribute to the assessment of ER not only as a design tool, but also as a methodology for modelling and understanding intelligent adaptive behaviours.

Evolutionary Swarm Robotics

Climate Change and Cities bridges science-to-action for climate change adaptation and mitigation efforts in cities around the world.

Climate Change and Cities

A comprehensive presentation of an approach that proposes a new account of cognition at levels from the cellular to the social. This book presents the framework for a new, comprehensive approach to cognitive science. The proposed paradigm, enaction, offers an alternative to cognitive science's classical, first-generation Computational Theory of Mind (CTM). Enaction, first articulated by Varela, Thompson, and Rosch in The Embodied Mind (MIT Press, 1991), breaks from CTM's formalisms of information processing and symbolic representations to view cognition as grounded in the sensorimotor dynamics of the interactions between a living organism and its environment. A living organism enacts the world it lives in; its embodied action in the world constitutes its perception and thereby grounds its cognition. Enaction offers a range of perspectives on this exciting new approach to embodied cognitive science. Some chapters offer manifestos for the enaction paradigm; others address specific areas of research, including artificial intelligence, developmental psychology, neuroscience, language, phenomenology, and culture and cognition. Three themes emerge as testimony to the originality and specificity of enaction as a paradigm: the relation between first-person lived experience and third-person natural science; the ambition to provide an encompassing framework applicable at levels from the cell to society; and the difficulties of reflexivity. Taken together, the chapters offer nothing less than the framework for a far-reaching renewal of cognitive science. Contributors Renaud Barbaras, Didier Bottineau, Giovanna Colombetti, Diego Cosmelli, Hanne De Jaegher, Ezequiel A. Di Paolo. Andreas K. Engel, Olivier Gapenne, Véronique Havelange, Edwin Hutchins, Michel Le Van Quyen, Rafael E. Núñez, Marieke Rohde, Benny Shanon, Maxine Sheets-Johnstone, Adam Sheya, Linda B. Smith, John Stewart, Evan Thompson

Enaction

Stories, whether they are fact or fiction, popular or not, are a proven method of pedagogy. In the age of media convergence and with the advancement of technology, stories have morphed into new forms; however, their core purpose remains the same, which is to pass on knowledge and information. The internet, with its inherent interactivity, and story, with its inherent capacity to engage, can lead to innovative and transformative learning experiences in media-rich environments. This book focuses on web-based Transmedia Storytelling Edutainment (TmSE) as an andragogical practice in higher education. Story is at the forefront of this investigation because narrative is the basis for developing entertainment media franchise that can be incorporated into pedagogical practice. The propulsion of this analysis consists of practice-based research through narrative inquiry and an e-module case study presented on multimedia storytelling in the classroom. A Transmedia Storytelling Framework is provided for creating screenplays for cross-media

projects and for analyzing their appropriateness in education. Additionally, a hypertext screenplay, which allowed students to dig deeper into the story word and to build more knowledge, is evaluated for its use in higher education. Since screenplays are by nature writing for the screen, it is believed that the more visual the input, the more likely it is to be memorized and recalled. A link to The Goddess Within screenplay is available for download on the right hand side of this page.

Transmedia Storytelling and the New Era of Media Convergence in Higher Education

The robot population is rising on Earth and other planets. (Mars is inhabited entirely by robots.) As robots slip into more domains of human life--from the operating room to the bedroom--they take on our morally important tasks and decisions, as well as create new risks from psychological to physical. This makes it all the more urgent to study their ethical, legal, and policy impacts. To help the robotics industry and broader society, we need to not only press ahead on a wide range of issues, but also identify new ones emerging as quickly as the field is evolving. For instance, where military robots had received much attention in the past (and are still controversial today), this volume looks toward autonomous cars here as an important case study that cuts across diverse issues, from liability to psychology to trust and more. And because robotics feeds into and is fed by AI, the Internet of Things, and other cognate fields, robot ethics must also reach into those domains, too. Expanding these discussions also means listening to new voices; robot ethics is no longer the concern of a handful of scholars. Experts from different academic disciplines and geographical areas are now playing vital roles in shaping ethical, legal, and policy discussions worldwide. So, for a more complete study, the editors of this volume look beyond the usual suspects for the latest thinking. Many of the views as represented in this cutting-edge volume are provocative--but also what we need to push forward in unfamiliar territory.

Robot Ethics 2.0

'One of the best books yet written on data and algorithms. . .deserves a place on the bestseller charts.' (The Times) You are accused of a crime. Who would you rather determined your fate - a human or an algorithm? An algorithm is more consistent and less prone to error of judgement. Yet a human can look you in the eye before passing sentence. Welcome to the age of the algorithm, the story of a not-too-distant future where machines rule supreme, making important decisions - in healthcare, transport, finance, security, what we watch, where we go even who we send to prison. So how much should we rely on them? What kind of future do we want? Hannah Fry takes us on a tour of the good, the bad and the downright ugly of the algorithms that surround us. In Hello World she lifts the lid on their inner workings, demonstrates their power, exposes their limitations, and examines whether they really are an improvement on the humans they are replacing. A BBC RADIO 4: BOOK OF THE WEEK SHORTLISTED FOR THE 2018 BAILLIE GIFFORD PRIZE AND 2018 ROYAL SOCIETY SCIENCE BOOK PRIZE

Hello World

An important amount of research effort in psychology and neuroscience over the past decades has focused on the problem of social cognition. This problem is understood as how we figure out other minds, relying only on indirect manifestations of other people's intentional states, which are assumed to be hidden, private and internal. Research on this question has mostly investigated how individual cognitive mechanisms achieve this task. A shift in the internalist assumptions regarding intentional states has expanded the research focus with hypotheses that explore the role of interactive phenomena and interpersonal histories and their implications for understanding individual cognitive processes. This interactive expansion of the conceptual and methodological toolkit for investigating social cognition, we now propose, can be followed by an expansion into wider and deeply-related research questions, beyond (but including) that of social cognition narrowly construed. Our social lives are populated by different kinds of cognitive and affective phenomena that are related to but not exhausted by the question of how we figure out other minds. These phenomena include acting and perceiving together, verbal and non-verbal engagement, experiences of (dis-)connection,

management of relations in a group, joint meaning-making, intimacy, trust, conflict, negotiation, asymmetric relations, material mediation of social interaction, collective action, contextual engagement with socio-cultural norms, structures and roles, etc. These phenomena are often characterized by a strong participation by the cognitive agent in contrast with the spectatorial stance typical of social cognition research. We use the broader notion of embodied intersubjectivity to refer to this wider set of phenomena. This Research Topic aims to investigate relations between these different issues, to help lay strong foundations for a science of intersubjectivity – the social mind writ large. To contribute to this goal, we encouraged contributions in psychology, neuroscience, psychopathology, philosophy, and cognitive science that address this wider scope of intersubjectivity by extending the range of explanatory factors from purely individual to interactive, from observational to participatory.

Towards an embodied science of intersubjectivity: Widening the scope of social understanding research

This is a collection of over a hundred essays on alternatives to the dominant processes of globalized development, including its structural roots in modernity, capitalism, state domination, and masculinist values. The book presents views and practices from around the world in a collective search for an ecologically and socially just world.

Pluriverse

This book addresses emerging issues concerning the integration of artificial intelligence systems in our daily lives. It focuses on the cognitive, visual, social and analytical aspects of computing and intelligent technologies, and highlights ways to improve the acceptance, effectiveness, and efficiency of said technologies. Topics such as responsibility, integration and training are discussed throughout. The book also reports on the latest advances in systems engineering, with a focus on societal challenges and next-generation systems and applications for meeting them. Based on the AHFE 2020 Virtual Conference on Software and Systems Engineering, and the AHFE 2020 Virtual Conference on Artificial Intelligence and Social Computing, held on July 16–20, 2020, it provides readers with extensive information on current research and future challenges in these fields, together with practical insights into the development of innovative services for various purposes.

Advances in Artificial Intelligence, Software and Systems Engineering

Effective leadership and management in health and social care are built on good practice, strong relationships and a critical understanding of the wider context in which care takes place. Leading, Managing, Caring illustrates how leadership and management work in everyday settings, providing invaluable support to those practising or studying in the area. The book introduces the four core building blocks of the caring manager or leader: personal awareness, team awareness, goal awareness and contextual awareness. Together these form a firm foundation for understanding and practice. Drawing on up-to-date case studies, the authors explore how critical theoretical understanding can support practical attempts to work through complex situations with a diverse range of people. Also included is a toolkit containing carefully selected and practical tools for leading and managing change. This comprehensive textbook is suitable for existing and aspiring managers and leaders in a range of health and social care professions, or anyone interested in understanding more about the complex landscape in which care services are managed and delivered in the UK.

Leading, Managing, Caring: Understanding Leadership and Management in Health and Social Care

DIVProminent queer theorist offers a \"low theory\" of culture knowledge drawn from popular texts and films./div

The Queer Art of Failure

The Globalization of World Politics, the bestselling introduction to international relations, offers the most comprehensive coverage of the key theories and global issues in world politics. The eighth edition engages with contemporary global challenges, featuring a brand new chapter on Refugees and Forced Migration and updated coverage of decolonization to ensure the book continues to cover those topics that will define the key issues in IR into the future. Tailored pedagogical features help readers to evaluate key IR debates and apply theory and concepts to real world events. A fully updated Opposing Opinions feature facilitates critical and reflective debate on contemporary policy challenges, from decolonising universities to debates over migration and the state. Leading scholars in the field introduce readers to the history, theory, structures and key issues in IR, providing students with an ideal introduction and a constant guide throughout their studies. Students and lecturers are further supported by extensive online resources to encourage deeper engagement with content: Student resources: International relations simulations encourage students to develop negotiation and problem solving skills by engaging with topical events and processes IR theory in practice case studies encourage students to apply theories to current and evolving global events Video podcasts from contributors help students to engage with key issues and cases in IR Guidance on how to evaluate the Opposing Opinions feature, supporting students to engage in nuanced debate over key policy challenges Interactive library of links to journal articles, blogs and video content to deepen students' understanding of key topics and explore their research interests Flashcard glossary to reinforce understanding of key terms Multiple choice questions for self-study help students to reinforce their understanding of the key points of each chapter Revision guide to consolidate understanding and revise key terms and themes Instructor Resources: Case studies help to contextualise and deepen theoretical understanding Test bank - fully customisable assessment questions to test and reinforce students' understanding of key concepts Question bank - a bank of short answer and essay questions to promote students' critical reflection on core issues and themes within each chapter Customisable PowerPoint slides help to support effective teaching preparation Figures and tables from the book allow clear presentation of key data and support students' data analysis

The Globalization of World Politics

Bankruptcy prediction is one of the most important research areas in corporate finance. Bankruptcies are an indispensable element of the functioning of the market economy, and at the same time generate significant losses for stakeholders. Hence, this book was established to collect the results of research on the latest trends in predicting the bankruptcy of enterprises. It suggests models developed for different countries using both traditional and more advanced methods. Problems connected with predicting bankruptcy during periods of prosperity and recession, the selection of appropriate explanatory variables, as well as the dynamization of models are presented. The reliability of financial data and the validity of the audit are also referenced. Thus, I hope that this book will inspire you to undertake new research in the field of forecasting the risk of bankruptcy.

Corporate Bankruptcy Prediction

\"Eduardo Kac's work represents a turning point. What it questions is our current attitudes to creativity, taking that word in its most fundamental sense.\" -Edward Lucie-Smith, author of Visual Arts in the 20th Century \"His works introduce a vital new meaning into what had been known as the creative process while at the same time investing the notion of the artist-inventor with an original social and ethical responsibility.\" -Frank Popper, author of Origins and Development of Kinetic Art \"Kac's radical approach to the creation and presentation of the body as a wet host for artificial memory and 'site-specific' work raises a variety of important questions that range from the status of memory in digital culture to the ethical dilemmas we are facing in the age of bioengineering and tracking technology.\" -Christiane Paul, Whitney Museum of Art For nearly two decades Eduardo Kac has been at the cutting edge of media art, first inventing early online artworks for the web and continuously developing new art forms that involve telecommunications and robotics as a new platform for art. Interest in telepresence, also known as telerobotics, exploded in the 1990s,

and remains an important development in media art. Since that time, Kac has increasingly moved into the fields of biology and biotechnology. Telepresence and Bio Art is the first book to document the evolution of bio art and the aesthetic development of Kac, the creator of the \"artist's gene\" as well as the controversial glow-in-the-dark, genetically engineered rabbit Alba. Kac covers a broad range of topics within media art, including telecommunications media, interactive systems and the Internet, telematics and robotics, and the contact between electronic art and biotechnology. Addressing emerging and complex topics, this book will be essential reading for anyone interested in contemporary art.

Telepresence & Bio Art

A provocative attempt to think about what was previously considered unthinkable: a serious philosophical case for the rights of robots. We are in the midst of a robot invasion, as devices of different configurations and capabilities slowly but surely come to take up increasingly important positions in everyday social reality—self-driving vehicles, recommendation algorithms, machine learning decision making systems, and social robots of various forms and functions. Although considerable attention has already been devoted to the subject of robots and responsibility, the question concerning the social status of these artifacts has been largely overlooked. In this book, David Gunkel offers a provocative attempt to think about what has been previously regarded as unthinkable: whether and to what extent robots and other technological artifacts of our own making can and should have any claim to moral and legal standing. In his analysis, Gunkel invokes the philosophical distinction (developed by David Hume) between “is” and “ought” in order to evaluate and analyze the different arguments regarding the question of robot rights. In the course of his examination, Gunkel finds that none of the existing positions or proposals hold up under scrutiny. In response to this, he then offers an innovative alternative proposal that effectively flips the script on the is/ought problem by introducing another, altogether different way to conceptualize the social situation of robots and the opportunities and challenges they present to existing moral and legal systems.

Robot Rights

This book presents cutting-edge research on innovative human systems integration and human–machine interaction, with an emphasis on artificial intelligence and automation, as well as computational modeling and simulation. It covers a wide range of applications in the area of design, construction and operation of products, systems and services. The book describes advanced methodologies and tools for evaluating and improving interface usability, new models, and case studies and best practices in virtual, augmented and mixed reality systems, with a special focus on dynamic environments. It also discusses various factors concerning the human user, hardware, and artificial intelligence software. Based on the proceedings of the 4th International Conference on Intelligent Human Systems Integration (IHSI 2021), held on February 22–24, 2021, the book also examines the forces that are currently shaping the nature of computing and cognitive systems, such as the need to reduce hardware costs; the importance of infusing intelligence and automation; the trend toward hardware miniaturization and optimization; the need for a better assimilation of computation in the environment; and social concerns regarding access to computers and systems for people with special needs. It offers a timely survey and a practice-oriented reference guide for policy- and decision-makers, human factors engineers, systems developers and users alike.

Intelligent Human Systems Integration 2021

Can robots perform actions, make decisions, collaborate with humans, be our friends, perhaps fall in love, or potentially harm us? Even before these things truly happen, ethical and philosophical questions already arise. The reason is that we humans have a tendency to spontaneously attribute minds and “agency” to anything even remotely humanlike. Moreover, some people already say that robots should be our companions and have rights. Others say that robots should be slaves. This book tackles emerging ethical issues about human beings, robots, and agency head on. It explores the ethics of creating robots that are, or appear to be, decision-making agents. From military robots to self-driving cars to care robots or even sex robots equipped

with artificial intelligence: how should we interpret the apparent agency of such robots? This book argues that we need to explore how human beings can best coordinate and collaborate with robots in responsible ways. It investigates ethically important differences between human agency and robot agency to work towards an ethics of responsible human-robot interaction.

Humans and Robots

Many reports over the last few years have analysed the potential use of games, videogames, 3D environments and virtual reality for educational purposes. Numerous emerging technological devices have also appeared that will play important roles in the development of teaching and learning processes. In the context of these developments, learning rather than teaching becomes the main axis in the organisation of the educational process. This process has now gone beyond the analogue world and face-toface education to enter the digital world, where new learning environments are being produced with ever greater doses of realism. Teaching and Learning in Digital Worlds examines the teaching and learning process in 3D virtual environments from both the theoretical and practical points of view.

Teaching and Learning in Digital World

This book provides glimpses into contemporary research in information systems & technology, learning, artificial intelligence (AI), machine learning, and security and how it applies to the real world, but the ideas presented also span the domains of telehealth, computer vision, the role and use of mobile devices, brain–computer interfaces, virtual reality, language and image processing and big data analytics and applications. Great research arises from asking pertinent research questions. This book reveals some of the authors' "beautiful questions" and how they develop the subsequent "what if" and "how" questions, offering readers food for thought and whetting their appetite for further research by the same authors.

Innovation in Information Systems and Technologies to Support Learning Research

Contemporary visual culture is inundated with a kaleidoscope of futuristic utopias and dystopias in which the longing for a seamless interface between the virtual and the real, as well as the desire for release from the constrictions of time and space, are recurrent themes. Based on speculative predictions and creative scientific arguments, a pervasive visual rhetoric of acceleration and progression, as well as damnation and destruction, shapes our sense of the future. Contributors to this volume include participants in the Facing Forward Project of 2011-12, which started as a collaboration between the Stedelijk Museum Amsterdam, the Amsterdam School for Cultural Analysis at the University of Amsterdam, De Appel arts centre, W139 - Space for Contemporary Art, and the art magazine Metropolis M.

Facing Forward

The second World Ocean Assessment is a collaborative effort of hundreds of experts from all regions of the world, a comprehensive and integrated assessment of the state of marine environment.

The Second World Ocean Assessment

Visualizing the Street investigates the social and cultural significance of new developments at the intersection of visual culture and urban space.

Visualizing the Street

Jaan Valsiner has made numerous contributions to the development of psychology over the last 40 years. He is internationally recognized as a leader and innovator within both developmental psychology and cultural

psychology, and has received numerous prizes for his work: the Alexander von Humboldt prize, the Hans Killian prize, and the Outstanding International Psychologist Award from the American Psychological Association. Having taught at Universities in Europe, Asia and north and south America, he is currently Niels Bohr professor at Aalborg University, Denmark. This book is the first to discuss in detail the different sides of Valsiner's thought, including developmental science, semiotic mediation, cultural transmission, aesthetics, globalization of science, epistemology, methodology and the history of ideas. The book provides an overview, evaluation and extension of Valsiner's key ideas for the construction of a dynamic cultural psychology, written by his former students and colleagues from around the world.

Culture as Process

A comprehensive survey of artificial intelligence algorithms and programming organization for robot systems, combining theoretical rigor and practical applications. This textbook offers a comprehensive survey of artificial intelligence (AI) algorithms and programming organization for robot systems. Readers who master the topics covered will be able to design and evaluate an artificially intelligent robot for applications involving sensing, acting, planning, and learning. A background in AI is not required; the book introduces key AI topics from all AI subdisciplines throughout the book and explains how they contribute to autonomous capabilities. This second edition is a major expansion and reorganization of the first edition, reflecting the dramatic advances made in AI over the past fifteen years. An introductory overview provides a framework for thinking about AI for robotics, distinguishing between the fundamentally different design paradigms of automation and autonomy. The book then discusses the reactive functionality of sensing and acting in AI robotics; introduces the deliberative functions most often associated with intelligence and the capability of autonomous initiative; surveys multi-robot systems and (in a new chapter) human-robot interaction; and offers a "metaview" of how to design and evaluate autonomous systems and the ethical considerations in doing so. New material covers locomotion, simultaneous localization and mapping, human-robot interaction, machine learning, and ethics. Each chapter includes exercises, and many chapters provide case studies. Endnotes point to additional reading, highlight advanced topics, and offer robot trivia.

Introduction to AI Robotics, second edition

Prominent experts from science and the humanities explore issues in robot ethics that range from sex to war. Robots today serve in many roles, from entertainer to educator to executioner. As robotics technology advances, ethical concerns become more pressing: Should robots be programmed to follow a code of ethics, if this is even possible? Are there risks in forming emotional bonds with robots? How might society—and ethics—change with robotics? This volume is the first book to bring together prominent scholars and experts from both science and the humanities to explore these and other questions in this emerging field. Starting with an overview of the issues and relevant ethical theories, the topics flow naturally from the possibility of programming robot ethics to the ethical use of military robots in war to legal and policy questions, including liability and privacy concerns. The contributors then turn to human-robot emotional relationships, examining the ethical implications of robots as sexual partners, caregivers, and servants. Finally, they explore the possibility that robots, whether biological-computational hybrids or pure machines, should be given rights or moral consideration. Ethics is often slow to catch up with technological developments. This authoritative and accessible volume fills a gap in both scholarly literature and policy discussion, offering an impressive collection of expert analyses of the most crucial topics in this increasingly important field.

Robot Ethics

\"Evolutionary Design By Computers offers an enticing preview of the future of computer-aided design: Design by Darwin.\" Lawrence J. Fogel, President, Natural Selection, Inc. \"Evolutionary design by computers is the major revolution in design thinking of the 20th century and this book is the best introduction available.\" Professor John Frazer, Swire Chair and Head of School of Design, the Hong Kong Polytechnic University, Author of \"An Evolutionary Architecture\" \"Peter Bentley has assembled and edited an

important collection of papers that demonstrate, convincingly, the utility of evolutionary computation for engineering solutions to complex problems in design.\" David B. Fogel, Editor-in-Chief, IEEE Transactions on Evolutionary Computation Some of the most startling achievements in the use of computers to automate design are being accomplished by the use of evolutionary search algorithms to evolve designs. Evolutionary Design By Computers provides a showcase of the best and most original work of the leading international experts in Evolutionary Computation, Engineering Design, Computer Art, and Artificial Life. By bringing together the highest achievers in these fields for the first time, including a foreword by Richard Dawkins, this book provides the definitive coverage of significant developments in Evolutionary Design. This book explores related sub-areas of Evolutionary Design, including: design optimization creative design the creation of art artificial life. It shows for the first time how techniques in each area overlap, and promotes the cross-fertilization of ideas and methods.

Evolutionary Design by Computers

Explosive Ordnance Disposal (EOD) personnel are some of the most highly trained people in the military, with a job description that spans defusing unexploded ordnance to protecting VIP’s and state dignitaries. EOD are also one of the first military groups to work with robots every day. These robots have become an increasingly important tool in EOD work, enabling people to work at safer distances in many dangerous situations. Based on exploratory research investigating interactions between EOD personnel and the robots they use, this study richly describes the nuances of these reciprocal influences, especially those related to operator emotion associated with the robots. In particular, this book examines the activities, processes and contexts that influence or constrain everyday EOD human-robot interactions, what human factors are shaping the (robotic) technology and how people and culture are being changed by using it. The findings from this research have implications for future personnel training, and the refinement of robot design considerations for many fields that rely on critical small group communication and decision-making skills.

Culture and Human-Robot Interaction in Militarized Spaces

The Handbook of Coaching Psychology: A Guide for Practitioners provides a clear and extensive guide to the theory, research and practice of coaching psychology. In this new and expanded edition, an international selection of leading coaching psychologists and coaches outlines recent developments from a broad spectrum of areas. Part One examines perspectives and research in coaching psychology, looking at both the past and the present as well as assessing future directions. Part Two presents a range of approaches to coaching psychology, including behavioural and cognitive behavioural, humanistic, existential, being-focused, constructive and systemic approaches. Part Three covers application, context and sustainability, focusing on themes including individual transitions in life and work, and complexity and system-level interventions. Finally, Part Four explores a range of topics within the professional and ethical practice of coaching psychology. The book also includes several appendices outlining the key professional bodies, publications, research centres and societies in coaching psychology, making this an indispensable resource. Unique in its scope, this key text will be essential reading for coaching psychologists and coaches, academics and students of coaching psychology, coaching and mentoring and business psychology. It will be an important text for anyone seeking to understand the psychology underpinning their coaching practice, including human resource, learning and development and management professionals, and executives in a coaching role.

Handbook of Coaching Psychology

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