

Governing Lethal Behavior in Autonomous Robots

Ronald C. Arkin



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Governing Lethal Behavior In Autonomous Robots

Governing Lethal Behavior In Autonomous Robots

**James Gow, Ernst Dijxhoorn, Rachel
Kerr, Guglielmo Verdirame**



Governing Lethal Behavior In Autonomous Robots Governing Lethal Behavior In Autonomous Robots:

Governing Lethal Behavior in Autonomous Robots Ronald Arkin, 2009-05-27 Expounding on the results of the author's work with the US Army Research Office DARPA the Office of Naval Research and various defense industry contractors *Governing Lethal Behavior in Autonomous Robots* explores how to produce an artificial conscience in a new class of robots humaneoids which are robots that can potentially perform more et

Living with Robots Paul Dumouchel, Luisa Damiano, 2017-11-06 From artificial intelligence to artificial empathy a timely and well written volume that addresses many contemporary and future moral questions Library Journal Today's robots engage with human beings in socially meaningful ways as therapists trainers mediators caregivers and companions Social robotics is grounded in artificial intelligence but the field's most probing questions explore the nature of the very real human emotions that social robots are designed to emulate Social roboticists conduct their inquiries out of necessity every robot they design incorporates and tests a number of hypotheses about human relationships Paul Dumouchel and Luisa Damiano show that as roboticists become adept at programming artificial empathy into their creations they are abandoning the conventional conception of human emotions as discrete private internal experiences Rather they are reconceiving emotions as a continuum between two actors who coordinate their affective behavior in real time Rethinking the role of sociability in emotion has also led the field of social robotics to interrogate a number of human ethical assumptions and to formulate a crucial political insight there are simply no universal human characteristics for social robots to emulate What we have instead is a plurality of actors human and nonhuman in noninterchangeable relationships Foreshadowing an inflection point in human evolution *Living with Robots* shows that for social robots to be effective they must be attentive to human uniqueness and exercise a degree of social autonomy More than mere automatons they must become social actors capable of modifying the rules that govern their interplay with humans A detailed tour of the philosophy of artificial intelligence AI especially as it applies to robots intended to build social relationships with humanity If we are to build a robust appropriate ethical structure around the next generation of technical development some combination of deep learning artificial intelligence robotics and artificial empathy we need to understand that managing the impact of these technologies is far too important to be left to those who are enthusiastically engaged in producing them Times Higher Education

[Culture and Human-Robot Interaction in Militarized Spaces](#) Julie Carpenter, 2016-02-26 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

From AI to Robotics Arkapravo Bhaumik,2018-02-28 From AI to Robotics Mobile Social and Sentient Robots is a journey into the world of agent based robotics and it covers a number of interesting topics both in the theory and practice of the discipline The book traces the earliest ideas for autonomous machines to the mythical lore of ancient Greece and ends the last chapter with a debate on a prophecy set in the apparent future where human beings and robots technology may merge to create superior beings the era of transhumanism Throughout the text the work of leading researchers is presented in depth which helps to paint the socio economic picture of how robots are transforming our world and will continue to do so This work is presented along with the influences and ideas from futurists such as Asimov Moravec Lem Vinge and of course Kurzweil The book furthers the discussion with concepts of Artificial Intelligence and how it manifests in robotic agents Discussions across various topics are presented in the book including control paradigm navigation software multi robot systems swarm robotics robots in social roles and artificial consciousness in robots These discussions help to provide an overall picture of current day agent based robotics and its prospects for the future Examples of software and implementation in hardware are covered in Chapter 5 to encourage the imagination and creativity of budding robot enthusiasts The book addresses several broad themes such as AI in theory versus applied AI for robots concepts of anthropomorphism embodiment and situatedness extending theory of psychology and animal behavior to robots and the proposal that in the future AI may be the new definition of science Behavior based robotics is covered in Chapter 2 and retells the debate between deliberative and reactive approaches The text reiterates that the effort of modern day robotics is to replicate human like intelligence and behavior and the tools that a roboticist has at his or her disposal are open source software which is often powered by crowd sourcing Open source meta projects such as Robot Operating System ROS etc are briefly discussed in Chapter 5 The ideas and themes presented in the book are supplemented with cartoons images schematics and a number of special sections to make the material engaging for the reader Designed for robot enthusiasts researchers students or the hobbyist this comprehensive book will entertain and inspire anyone interested in the exciting world of robots

Military Ethics and Emerging Technologies Timothy J. Demy,George R. Lucas Jr.,Bradley J. Strawser,2016-01-08 This volume looks at current and emerging technologies of war and some of the ethical issues surrounding their use Although the nature and politics of war never change the weapons and technologies used in war do change and are always undergoing development Because of that the arsenal of weapons for twenty first century conflict is different from previous centuries Weapons in today s world include an array of instruments of war that include robotics cyber war capabilities human performance enhancement for warriors and the proliferation of an entire spectrum of unmanned

weapons systems and platforms Tactical weapons now have the potential of strategic results and have changed the understanding of the battle space creating ethical legal and political issues unknown in the pre 9 11 world What do these technologies mean for things such as contemporary international relations the just war tradition and civil military relations Directed at readers in the academic scientific military and public policy communities this volume offers current thought on ethics and emerging technologies from internationally recognized scholars addressing the full spectrum of issues in present warfare technology It includes current and ongoing topics of multi discipline and international interest such as ethics law international relations war studies public policy science and technology This book was originally published in various issues and volumes of the Journal of Military Ethics *Routledge Handbook of War, Law and Technology* James Gow, Ernst Dijkhoorn, Rachel Kerr, Guglielmo Verdirame, 2019-05-15 This volume provides an authoritative cutting edge resource on the characteristics of both technological and social change in warfare in the twenty first century and the challenges such change presents to international law The character of contemporary warfare has recently undergone significant transformation in several important respects the nature of the actors the changing technological capabilities available to them and the sites and spaces in which war is fought These changes have augmented the phenomenon of non obvious warfare making understanding warfare one of the key challenges Such developments have been accompanied by significant flux and uncertainty in the international legal sphere This handbook brings together a unique blend of expertise combining scholars and practitioners in science and technology international law strategy and policy in order properly to understand and identify the chief characteristics and features of a range of innovative developments means and processes in the context of obvious and non obvious warfare The handbook has six thematic sections Law war and technology Cyber warfare Autonomy robotics and drones Synthetic biology New frontiers International perspectives This interdisciplinary blend and the novel rich and insightful contribution that it makes across various fields will make this volume a crucial research tool and guide for practitioners scholars and students of war studies security studies technology and design ethics international relations and international law Drones Sarah Elizabeth Kreps, 2016 Drones quite possibly represent the most transformative military innovation since jet engines and atomic weaponry No longer do humans have to engage in close military action or be in the same geographical vicinity as the target Now through satellite imaging and remote technology countries such as the United States can destroy small targets halfway around the world with pinpoint accuracy In the last several years many of the military advancements have been rivaled by those in the commercial realm Civilian industries have clamored to acquire drones for everything from monitoring crops to filming Hollywood movies to delivering packages Not surprisingly the use of drones has generated a lively debate but no book thus far has engaged the range of themes surrounding drones How do drones work To what extent has the technology proliferated to other nations outside the US How can they be used on the ground and in maritime environments How are they being integrated into both military and civilian life In Drones What

Everyone Needs to Know the international relations scholar and former air force officer Sarah E Kreps provides a concise synthesis of the topic The book explains how they and the systems associated with them work how they are being used today and what will become of the technology in the future What readers need now is a more practical guide to how this technology is reshaping both military and civilian life this book is that guide The drone revolution has already changed warfare and will soon become a commonplace tool in a civilian context too It is clear that drone technology is here to stay Drones What Everyone Needs to Know explains how the revolution happened what its current contours are and where we might be headed next

Robot Ethics Patrick Lin, Keith Abney, George A. Bekey, 2014-01-10 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

"Lost" Causes Charli Carpenter, 2014-06-24 Why do some issues and threats diseases weapons human rights abuses vulnerable populations get more global policy attention than others How do global activist networks decide the particular causes for which they advocate among the many problems in need of solutions According to Charli Carpenter the answer lies in the politics of global issue networks themselves Building on surveys focus groups and analyses of issue network websites Carpenter concludes that network access has a direct relation to influence over how issues are ranked Advocacy elites in nongovernmental and transnational organizations judge candidate issues not just on their merit but on how the issues connect to specific organizations individuals and even other issues In *Lost Causes* Carpenter uses three case studies of emerging campaigns to show these dynamics at work banning infant male circumcision compensating the wartime killing and maiming of civilians and prohibiting the deployment of fully autonomous weapons so called killer robots The fate of each of these campaigns was determined not just by the persistence and hard work of entrepreneurs but by advocacy elites perception of the issues network ties Combining sweeping analytical argument with compelling narrative Carpenter reveals

how the global human security agenda is determined *An Introduction to Ethics in Robotics and AI* Christoph Bartneck, Christoph Lütge, Alan Wagner, Sean Welsh, 2020-08-11 This open access book introduces the reader to the foundations of AI and ethics It discusses issues of trust responsibility liability privacy and risk It focuses on the interaction between people and the AI systems and Robotics they use Designed to be accessible for a broad audience reading this book does not require prerequisite technical legal or philosophical expertise Throughout the authors use examples to illustrate the issues at hand and conclude the book with a discussion on the application areas of AI and Robotics in particular autonomous vehicles automatic weapon systems and biased algorithms A list of questions and further readings is also included for students willing to explore the topic further **Introduction to AI Robotics, second edition** Robin R. Murphy, 2019-10-01 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 **Journal of Moral Theology, Volume 4, Number 1** James F. Caccamo, David M. McCarthy, 2015-01-01 TECHNOLOGY Volume 4 Number 1 June 2015 Edited by James F Caccamo and David M McCarthy Natural Law in a Digital Age Nadia Delicata Faith in the Church of Facebook Matthew John Paul Tan Progress and Progressio Technology Self betterment and Integral Human Development Joseph G Wolyniak Containing a Pandora s Box The Importance of Labor Unions in the Digital Age Patrick Flanagan We Do Not Know How to Love Observations on Theology Technology and Disability Jana M Bennett Unmanned Autonomous Drones as a Problem of Theological Anthropology Kara N Slade Learning With Digital Technologies Privileging Persons Over Machines Mary E Hess What s in a Tech Factors in Evaluating the Morality of Our Information and Communication Practices James F Caccamo *Light It Up* John Pettegrew, 2015-11-15 Examines the U S Marines visual culture of combat in the Iraq War American

military power in the War on Terror has increasingly depended on the capacity to see the enemy The act of seeing enhanced by electronic and digital technologies has separated shooter from target eliminating risk of bodily harm to the remote warrior while YouTube videos eroticize pulling the trigger and video games blur the line between simulated play and fighting Light It Up examines the visual culture of the early twenty first century military Focusing on the Marine Corps which played a critical part in the invasion and occupation of Iraq John Pettegrew argues that U S military force in the Iraq War was projected through an optics of combat Powerful military technology developed in the Iraq and Afghanistan wars has placed war in a new posthuman era Pettegrew s interviews with marines as well as his analysis of first person shooter videogames and combat footage lead to startling insights into the militarization of popular digital culture An essential study for readers interested in modern warfare policy makers and historians of technology war and visual and military culture *Law, Ethics and Emerging Military Technologies* George Lucas, 2022-12-16 This book addresses issues of legal and moral governance arising in the development deployment and eventual uses of emerging technologies in military operations Proverbial wisdom has it that law and morality always lag behind technological innovation Hence the book aims to identify enumerate and constructively address the problems of adequate governance for the development deployment and eventual uses of military technologies that have been newly introduced into military operations or which will be available in the near future Proposals for modifications in governance the book argues closely track the anxieties of many critics of these technologies to the extent that they will proliferate prove destructive in unanticipated ways and partially or wholly escape regulation under current treaties and regulatory regimes In addition to such concerns in domestic and especially in international law the book addresses ethical norms in the professions involved in the design and eventual use of specific technologies principally involving the professional norms of practice in engineering and the military as well as biomedical and health care practice which impose moral obligations on their members to avoid reckless endangerment or criminal negligence in the course of their activities Thus in addition to exploring the application of existing legal regimes and moral norms the book examines how these professions might develop or improve the voluntary constraints on forms of malfeasance that are enshrined in their histories and codes of best practices This book should prove of great interest to students of ethics military studies philosophy of war and peace law and international relations *3TH1CS* Philipp Otto, Eike Gräf, 2017-10-25 Should we ban war robots or are they something we might want What can computer games tell us about our morals Is it OK to love a robot What is ethical design in the digital world How do we need to regulate the algorithms that impact our lives The digital transition puts our ideas about morality to the test presenting us with new questions in all areas of life politics economy social life communication entertainment In twenty contributions experts from Europe America and Asia rise to the challenge of finding answers to some of the new issues confronting us The authors offer new perspectives on topics like robots for eldercare autonomous vehicles personal drones or data ethics They present their ideas on how we as a society can deal with

the digital challenges to our ethics and values Their contributions provide insights into highly topical reflections on what is morally right in our digital era Above all they are an invitation to think and to join the discussion **Roboethics** Spyros G. Tzafestas,2015-07-27 This volume explores the ethical questions that arise in the development creation and use of robots that are capable of semiautonomous or autonomous decision making and human like action It examines how ethical and moral theories can and must be applied to address the complex and critical issues of the application of these intelligent robots in society Coverage first presents fundamental concepts and provides a general overview of ethics artificial intelligence and robotics Next the book studies all principal ethical applications of robots namely medical assistive socialized and war roboethics It looks at such issues as robotic surgery children robot and elderly robot therapeutical social interactions and the use of robots especially autonomous lethal ones in warfare In addition a chapter also considers Japanese roboethics as well as key intercultural and robot legislation issues Overall readers are provided with a thorough investigation into the moral responsibility if any of autonomous robots when doing harm This volume will serve as an ideal educational source in engineering and robotics courses as well as an introductory reference for researchers in the field **Should Robots Have Standing? The Moral and Legal Status of Social Robots** Anne Gerdes,Mark Coeckelbergh,David Gunkel,2022-07-07

The Morality of Drone Warfare and the Politics of Regulation Marcus Schulzke,2016-10-26 This book discusses the moral and legal issues relating to military drones focusing on how these machines should be judged according to the principles of just war theory The author analyses existing drones like the Predator and Reaper but also evaluates the many types of drones in development The book presents drones as not only morally justifiable but having the potential to improve compliance with the principles of just war and international law Realizing this potential would depend on developing a sound regulatory framework which the book helps to develop by considering what steps governments and military forces should take to promote ethical drone use It also critically evaluates the arguments against drones to show which should be abandoned and which raise valid concerns that can inform regulations **Robots that Talk and Listen** Judith Markowitz,2014-12-12 Robots That Talk and Listen provides a forward looking examination of speech and language in robots from technical functional and social perspectives Contributors address cultural foundations as well as the linguistic skills and technologies that robots need to function effectively in real world settings Among the most difficult and complex is the ability to understand and use language Speech enabled automata are already serving as interactive toys teacher s aides and research assistants These robots will soon be joined by personal companions industrial co workers and military support automata The social impact of these and other robots extends well beyond the specific tasks they perform Contributors tackle the most knotty of those issues notably acceptance of advanced speech enabled robots and developing ethical and moral controls for robots Topics in this book include Language and Beyond The True Meaning of Speech Enabled Robots in Myth and Media Enabling Robots to Converse Language Learning by Automata Handling Noisy Settings Empirical Studies of Robots in Real

World Environments Acceptance of Intelligent Robots Managing Robots that Can Lie and Deceive Envisioning a World Shared with Intelligent Robots **Robot Law** Ryan Calo, A Michael Froomkin, Ian Kerr, 2016-01-29 Like the Internet before it robotics is a socially and economically transformative technology Robot Law explores how the increasing sophistication of robots and their widespread deployment into hospitals public spaces and battlefields requires rethinking of a wide variety of philosophical and public policy issues including how this technology interacts with existing legal regimes and thus may inspire changes in policy and in law This volume collects the efforts of a diverse group of scholars who each in their own way has worked to overcome barriers in order to facilitate necessary and timely discussions of a technology in its infancy Identifying controversial legal ethical and philosophical problems the authors reveal how issues surrounding robotics and regulation are more complicated than engineers could have anticipated and just how much definitional and applied work remains to be done This groundbreaking examination of a brand new reality will be of interest and of use to a variety of groups as the authors include engineers ethicists lawyers roboticists philosophers and serving military

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Introduction

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