

Introduction

Ethics in Robotics and Intelligent Machines

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Ethical issues are one of the most interesting aspects of new and emerging technologies. Theoretical and technological advances are increasingly leading to machines, which are efficient enough to share the same environment as humans. This makes ethics a crucial step in the process of developing robotics and intelligent machines. Ethical reflection begins upstream – at the very beginning of research – by asking researchers what they are doing, why, and for whom. It explores their values and broadens the research focus by involving other stakeholders; it involves intuitions that need to be weighed against other intuitions and tested against theology, sapiential knowledge, the arts, and normative theories. Ethics is therefore essential to ensure that the values implemented in robotics and intelligent machines are designed by experts in robotics, computer science, philosophy, psychology, law, architecture, urban planning, political theory, and economics, all of whom have sufficient professional expertise in the relevant issues, and that their work is carefully scrutinized by a well-informed public debate. Only in this way can new technologies reorient ethics and policy in ways that ensure inclusiveness and trustworthiness in societies.

This timely collection will contribute to the ongoing debate on the ethics of robotics and intelligent machines. It includes contributions from various fields in the humanities and beyond, spanning political, social, and technical domains. It

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includes papers that explore all aspects of ethics in robotics and intelligent machines.

In the opening paper, Charles H. Pence and Daniel J. Hicks explore the concept of ‘scientific community’ from a Philosophy of Science perspective through two case studies. They argue that the structure of contemporary scientific research poses two challenges to our notion of ‘scientific community’, which deserve consideration.

Focusing on the analysis of public opinion and political discourse, when mediated by deep neural network models capable of generating multimedia content, allows Antonio Carnevale, Claudia Falchi Delgado and Piercosma Bisconti to address the spread of fake news and its negative impact on the trustworthiness of both individuals and institutions.

Ignacio Cea, Anja Lueje Seeger, and Thomas Wachter’s paper explores the idea of ‘virtual utopia’ and its implications for job loss. The result of their critique is based on the philosophy of *buen vivir* (‘good living’). This notion has its roots in common aspects of various Latin American indigenous cultures regarding a community-centered way of life in which humans, society, and nature are seen as deeply interconnected and interdependent, and in which the notions of respect, harmony, and balance are at the core of this interrelationship.

Using the Cuban autonomous robot *Palmiche* as a case study, Giovanni Fernández Valdés’ paper proposes an original analysis of the issue of design. He proposes a new formulation of ethics by design that questions the net boundaries between subject and object.

Russell J. Woodruff and Cholvardan Kondeti explore how the use of robots can preserve or enhance opportunities for older people to create meaningfulness, understood as an important feature of a good life. This makes the case for a moral obligation to attend to the ways in which these deployments affect opportunities for meaningfulness in the lives of older people.

Ughetta Vergari and Gianpasquale Preite’s paper addresses the issue of biometric identity. In particular, they highlight the risks associated with biometric methods. In fact, the benefits of increased networking are limited by the risk of intrusion into the human sphere (social, personal or private), which could pose a threat both to the physical, biological body, with its associated freedoms (*habeas corpus*), and to the digital body, in its multiple forms and media representations (*habeas data*).

Finally, the seventh and eighth papers focus on emerging technologies as a source of difficult moral questions, and thus as both an exploratory and relevant area for ethical and legal theory.

Maria Cristina Gaeta, Livia Aulino, and Emiliano Troisi summarize the main steps in the European attempt to regulate AI. They problematize the possible relationship between law and ethics in the context of AI regulation and discuss the risk-based approach advocated by the European proposal.

Fiorella Battaglia's paper aims to understand the role of moral values in shaping new technologies. This task is essential for the design and use of these technologies. However, this is only one aspect of the search for values in emerging technologies. The fact that value-laden emerging technologies also have implications for moral theory is often overlooked. This is the point of reference for the second part of the paper.

ACKNOWLEDGMENTS

This publication belongs to the activities of the project PRIN 2022 PNRR Digit-Human funded by the European Union – Next Generation EU (F53D23010740001).