

THE CAMBRIDGE HANDBOOK OF RESPONSIBLE ARTIFICIAL INTELLIGENCE

In the past decade, artificial intelligence (AI) has become a disruptive force around the world, offering enormous potential for innovation but also creating hazards and risks for individuals and the societies in which they live. This volume addresses the most pressing philosophical, ethical, legal, and societal challenges posed by AI. Contributors from different disciplines and sectors explore the foundational and normative aspects of responsible AI and provide a basis for a transdisciplinary approach to responsible AI. This work, which is designed to foster future discussions to develop proportional approaches to AI governance, will enable scholars, scientists, and other actors to identify normative frameworks for AI to allow societies, states, and the international community to unlock the potential for responsible innovation in this critical field. This book is also available as Open Access on Cambridge Core.

SILJA VOENEKY is a leading scholar in the field of the interdependence of ethics and public international law, and the governance of emerging technologies. She is Professor of Public International Law, and Comparative Law at the University of Freiburg and was a Fellow at Harvard Law School. She previously served as a member of the German Ethics Council. Since 2001, Voenecky has been, inter alia, a legal advisor to the German Federal Foreign Office and the German Federal Ministry of Environment.

PHILIPP KELLMEYER is a neurologist and neuroscientist at the Medical Center – University of Freiburg. In his neuroscientific work, he investigates language processing in the brain and the clinical application of brain–computer interfaces, virtual reality, and other digital technologies. Through his contributions to neuroethics, he has become an international expert on ethical aspects of neuroscience, neurotechnology, and AI.

OLIVER MUELLER is Professor of Philosophy with a focus on technology and on contemporary philosophy, University of Freiburg, and a Senior Fellow at the 2018–2021 FRIAS Saltus Research Group ‘Responsible AI’.

WOLFRAM BURGARD is a leading researcher in Robotics and Artificial Intelligence. He co-authored more than 400 publications including the famous book ‘Probabilistic Robotics’. He received numerous awards including the Gottfried Wilhelm Leibniz Prize, the most prestigious German research award, and is Fellow of several societies.

The Cambridge Handbook of Responsible Artificial Intelligence

INTERDISCIPLINARY PERSPECTIVES

Edited by

SILJA VOENEKY

University of Freiburg

PHILIPP KELLMEYER

Medical Center – University of Freiburg

OLIVER MUELLER

University of Freiburg

WOLFRAM BURGARD

University of Technology Nuremberg



CAMBRIDGE
UNIVERSITY PRESS



CAMBRIDGE
UNIVERSITY PRESS

Shaftesbury Road, Cambridge CB2 8BS, United Kingdom

One Liberty Plaza, 20th Floor, New York, NY 10006, USA

477 Williamstown Road, Port Melbourne, VIC 3207, Australia

314–321, 3rd Floor, Plot 3, Splendor Forum, Jasola District Centre, New Delhi – 110025, India

103 Penang Road, #05–06/07, Visioncrest Commercial, Singapore 238467

Cambridge University Press is part of Cambridge University Press & Assessment, a department of the University of Cambridge.

We share the University's mission to contribute to society through the pursuit of education, learning and research at the highest international levels of excellence.

www.cambridge.org

Information on this title: www.cambridge.org/9781009207867

DOI: [10.1017/9781009207898](https://doi.org/10.1017/9781009207898)

© Cambridge University Press & Assessment 2022

This work is in copyright. It is subject to statutory exceptions and to the provisions of relevant licensing agreements; with the exception of the Creative Commons version the link for which is provided below, no reproduction of any part of this work may take place without the written permission of Cambridge University Press.

An online version of this work is published at doi.org/10.1017/9781009207898 under a Creative Commons Open Access license CC-BY-NC-ND 4.0 which permits re-use, distribution and reproduction in any medium for non-commercial purposes providing appropriate credit to the original work is given. You may not distribute derivative works without permission. To view a copy of this license, visit <https://creativecommons.org/licenses/by-nc-nd/4.0>

All versions of this work may contain content reproduced under license from third parties.

Permission to reproduce this third-party content must be obtained from these third-parties directly.

When citing this work, please include a reference to the DOI [10.1017/9781009207898](https://doi.org/10.1017/9781009207898)

First published 2022

A catalogue record for this publication is available from the British Library.

Library of Congress Cataloging-in-Publication Data

NAMES: Voeneke, Silja, 1969– editor. | Kellmeyer, Philipp, 1979– editor. | Mueller, Oliver, 1972– editor. | Burgard, Wolfram, editor.

TITLE: The Cambridge handbook of responsible artificial intelligence : interdisciplinary perspectives / edited by Silja Voeneke, University of Freiburg; Philipp Kellmeyer, Medical Center – University of Freiburg; Oliver Mueller, University of Freiburg; Wolfram Burgard, University of Technology Nuremberg.

DESCRIPTION: Cambridge, United Kingdom; New York, NY: Cambridge University Press, 2022. |

Series: Cambridge law handbooks | Includes index.

IDENTIFIERS: LCCN 2022022867 (print) | LCCN 2022022868 (ebook) | ISBN 9781009207867 (hardback) | ISBN 9781009207898 (epub)

SUBJECTS: LCSH: Artificial intelligence–Law and legislation. | Artificial intelligence–Social aspects. | BISAC: LAW / General

CLASSIFICATION: LCC K564.C6 C3595 2022 (print) | LCC K564.C6 (ebook) | DDC 343.09/99–dc23/eng/20220630

LC record available at <https://lccn.loc.gov/2022022867>

LC ebook record available at <https://lccn.loc.gov/2022022868>

ISBN 978-1-009-20786-7 Hardback

Cambridge University Press & Assessment has no responsibility for the persistence or accuracy of URLs for external or third-party internet websites referred to in this publication and does not guarantee that any content on such websites is, or will remain, accurate or appropriate.