

Algorithms And Collusion Competition In The Digital Age

Explains how artificial intelligence is pushing the limits of the law and how we must respond.

The Cambridge Handbook of the Law of Algorithms Cambridge University Press

This groundbreaking book explores the new legal and economic challenges triggered by big data, and analyses the interactions among and between intellectual property, competition law, free speech, privacy and other fundamental rights vis-à-vis big data analysis and algorithms.

This incisive book provides a much-needed examination of the legal issues arising from the data economy, particularly in the light of the expanding role of algorithms and artificial intelligence in business and industry. In doing so, it discusses the pressing question of how to strike a balance in the law between the interests of a variety of stakeholders, such as AI industry, businesses and consumers.

The first comprehensive economic and legal analysis of hub-and-spoke cartels, with detailed case studies. A cartel forms when competitors conspire to limit competition through coordinated actions. Most cartels are composed exclusively of firms that would otherwise be in competition, but in a hub-and-spoke cartel, those competitors (“spokes”) conspire with the assistance of an upstream supplier or a downstream buyer (“hub”). This book provides the first comprehensive economic and legal analysis of hub-and-spoke cartels, explaining their formation and how they operate to create and sustain a collusive environment. Sixteen detailed case studies, including cases brought against toy manufacturer Hasbro and the Apple ebook case, illustrate the economic framework and legal strategies discussed. The authors identify three types of hub-and-spoke cartels: when an upstream firm facilitates downstream firms to coordinate on higher prices; when a downstream intermediary facilitates upstream suppliers to coordinate on higher prices; and when a downstream firm facilitates upstream suppliers to exclude a downstream rival. They devote a chapter to each type, discussing the formation, coordination, enforcement, efficacy, and prosecution of these cartels, and consider general lessons that can be drawn from the case studies. Finally, they present strategies for prosecuting hub-and-spoke collusion. The book is written to be accessible to both economists and lawyers, and is intended for both scholars and practitioners.

Monti explores the development of EC competition law through an interdisciplinary approach, focusing on the political and economic considerations that affect the way the rules are interpreted. Written with competition law students in mind, it should also be of interest to undergraduate and postgraduate students of EU politics and economics.

Algorithms are now widely employed to make decisions that have increasingly far-reaching impacts on individuals and society as a whole (“algorithmic governance”), which could potentially lead to manipulation, biases, censorship, social discrimination, violations of privacy, property rights, and more. This has sparked a global debate on how to regulate AI and robotics (“governance of algorithms”). This book discusses both of these key aspects: the impact of algorithms, and the possibilities for future regulation. Throughout the world, the rule against price fixing is competition law's most important and least controversial prohibition. Yet there is far less consensus than meets the eye on what constitutes price fixing, and prevalent understandings conflict with the teachings of oligopoly theory that supposedly underlie modern competition policy.

Competition Policy and Price Fixing provides the needed analytical foundation. It offers a fresh, in-depth exploration of competition law's horizontal agreement requirement, presents a systematic analysis of how best to address the problem of coordinated oligopolistic price elevation, and compares the resulting direct approach to the orthodox prohibition. In doing so, Louis Kaplow elaborates the relevant benefits and costs of potential solutions, investigates how coordinated price elevation is best detected in light of the error costs associated with different types of proof, and examines appropriate sanctions. Existing literature devotes remarkably little attention to these key subjects and instead concerns itself with limiting penalties to certain sorts of interfirm communications. Challenging conventional wisdom, Kaplow shows how this circumscribed view is less well grounded in the statutes, principles, and precedents of competition law than is a more direct, functional proscription. More important, by comparison to the communications-based prohibition, he explains how the direct approach targets situations that involve both greater social harm and less risk of chilling desirable behavior--and is also easier to apply.

This innovative and original book explores the relationship between blockchain and antitrust, highlighting the mutual benefits that stem from cooperation between the two and providing a unique perspective on how law and technology could cooperate.

"a provocative new book" -- The New York Times AI-centric organizations exhibit a new operating architecture, redefining how they create, capture, share, and deliver value. Marco Iansiti and Karim R. Lakhani show how reinventing the firm around data, analytics, and AI removes traditional constraints on scale, scope, and learning that have restricted business growth for hundreds of years. From Airbnb to Ant Financial, Microsoft to Amazon, research shows how AI-driven processes are vastly more scalable than traditional processes, allow massive scope increase, enabling companies to straddle industry boundaries, and create powerful opportunities for learning--to drive ever more accurate, complex, and sophisticated predictions. When traditional operating constraints are removed, strategy becomes a whole new game, one whose rules and likely outcomes this book will make clear. Iansiti and Lakhani: Present a framework for rethinking business and operating models Explain how "collisions" between AI-driven/digital and traditional/analog firms are reshaping competition, altering the structure of our economy, and forcing traditional companies to rearchitect their operating models Explain the opportunities and risks created by digital firms Describe the new challenges and responsibilities for the leaders of both digital and traditional firms Packed with examples--including many from the most powerful and innovative global, AI-driven competitors--and based on research in hundreds of firms across many sectors, this is your essential guide for rethinking how your firm competes and operates in the era of AI.

This Handbook grapples conceptually and practically with what the sharing economy - which includes entities ranging from large for-profit firms like Airbnb, Uber, Lyft, Taskrabbit, and Upwork to smaller, non-profit collaborative initiatives - means for law, and how law, in turn, is shaping critical aspects of the sharing economy. Featuring a diverse set of contributors from many academic disciplines and countries, the book compiles the most important, up-to-date research on the regulation of the sharing economy. The first part surveys the nature of the sharing economy, explores the central challenge of balancing innovation and regulatory concerns, and examines the institutions confronting these regulatory challenges, and the second part turns to a series of specific regulatory domains, including labor and employment law, consumer protection, tax, and civil rights. This groundbreaking work should be read by anyone interested in the dynamic relationship between law and the sharing economy.

Algorithms permeate our lives in numerous ways, performing tasks that until recently could only be carried out by humans. Artificial Intelligence (AI) technologies, based on machine

learning algorithms and big-data-powered systems, can perform sophisticated tasks such as driving cars, analyzing medical data, and evaluating and executing complex financial transactions - often without active human control or supervision. Algorithms also play an important role in determining retail pricing, online advertising, loan qualification, and airport security. In this work, Martin Ebers and Susana Navas bring together a group of scholars and practitioners from across Europe and the US to analyze how this shift from human actors to computers presents both practical and conceptual challenges for legal and regulatory systems. This book should be read by anyone interested in the intersection between computer science and law, how the law can better regulate algorithmic design, and the legal ramifications for citizens whose behavior is increasingly dictated by algorithms.

In June 2019, the Committee on the Judiciary initiated a bipartisan investigation into the state of competition online, spearheaded by the Subcommittee on Antitrust, Commercial and Administrative Law. As part of a top-to-bottom review of the market, the Subcommittee examined the dominance of Amazon, Apple, Facebook, and Google, and their business practices to determine how their power affects our economy and our democracy. Additionally, the Subcommittee performed a review of existing antitrust laws, competition policies, and current enforcement levels to assess whether they are adequate to address market power and anticompetitive conduct in digital markets. Over the course of our investigation, we collected extensive evidence from these companies as well as from third parties—totaling nearly 1.3 million documents. We held seven hearings to review the effects of market power online—including on the free and diverse press, innovation, and privacy—and a final hearing to examine potential solutions to concerns identified during the investigation and to inform this Report's recommendations. A year after initiating the investigation, we received testimony from the Chief Executive Officers of the investigated companies: Jeff Bezos, Tim Cook, Mark Zuckerberg, and Sundar Pichai. For nearly six hours, we pressed for answers about their business practices, including about evidence concerning the extent to which they have exploited, entrenched, and expanded their power over digital markets in anticompetitive and abusive ways. Their answers were often evasive and non-responsive, raising fresh questions about whether they believe they are beyond the reach of democratic oversight. Although these four corporations differ in important ways, studying their business practices has revealed common problems

At a time when tech giants have amassed vast market power, Jonathan Baker shows how laws and regulations can be updated to ensure more competition. The sooner courts and antitrust enforcement agencies stop listening to the Chicago school and start paying attention to modern economics, the sooner Americans will reap the benefits of competition.

Motivated by their increasing prevalence, we study outcomes when competing sellers use machine learning algorithms to run real-time dynamic price experiments. These algorithms are often misspecified, ignoring the effect of factors outside their control, e.g. competitors' prices. We show that the long-run prices depend on the informational value (or signal to noise ratio) of price experiments: if low, the long-run prices are consistent with the static Nash equilibrium of the corresponding full information setting. However, if high, the long-run prices are supra-competitive -- the full information joint-monopoly outcome is possible. We show this occurs via a novel channel: competitors' algorithms' prices end up running correlated experiments. Therefore, sellers' misspecified models overestimate own price sensitivity, resulting in higher prices. We discuss the implications on competition policy.

The problem of privacy-preserving data analysis has a long history spanning multiple disciplines. As electronic data about individuals becomes increasingly detailed, and as technology enables ever more powerful collection and curation of these data, the need increases for a robust, meaningful, and mathematically rigorous definition of privacy, together with a computationally rich class of algorithms that satisfy this definition. Differential Privacy is

such a definition. The Algorithmic Foundations of Differential Privacy starts out by motivating and discussing the meaning of differential privacy, and proceeds to explore the fundamental techniques for achieving differential privacy, and the application of these techniques in creative combinations, using the query-release problem as an ongoing example. A key point is that, by rethinking the computational goal, one can often obtain far better results than would be achieved by methodically replacing each step of a non-private computation with a differentially private implementation. Despite some powerful computational results, there are still fundamental limitations. Virtually all the algorithms discussed herein maintain differential privacy against adversaries of arbitrary computational power -- certain algorithms are computationally intensive, others are efficient. Computational complexity for the adversary and the algorithm are both discussed. The monograph then turns from fundamentals to applications other than query-release, discussing differentially private methods for mechanism design and machine learning. The vast majority of the literature on differentially private algorithms considers a single, static, database that is subject to many analyses. Differential privacy in other models, including distributed databases and computations on data streams, is discussed. The Algorithmic Foundations of Differential Privacy is meant as a thorough introduction to the problems and techniques of differential privacy, and is an invaluable reference for anyone with an interest in the topic.

The most important book on antitrust ever written. It shows how antitrust suits adversely affect the consumer by encouraging a costly form of protection for inefficient and uncompetitive small businesses.

This book assesses the normative and practical challenges for artificial intelligence (AI) regulation, offers comprehensive information on the laws that currently shape or restrict the design or use of AI, and develops policy recommendations for those areas in which regulation is most urgently needed. By gathering contributions from scholars who are experts in their respective fields of legal research, it demonstrates that AI regulation is not a specialized sub-discipline, but affects the entire legal system and thus concerns all lawyers. Machine learning-based technology, which lies at the heart of what is commonly referred to as AI, is increasingly being employed to make policy and business decisions with broad social impacts, and therefore runs the risk of causing wide-scale damage. At the same time, AI technology is becoming more and more complex and difficult to understand, making it harder to determine whether or not it is being used in accordance with the law. In light of this situation, even tech enthusiasts are calling for stricter regulation of AI. Legislators, too, are stepping in and have begun to pass AI laws, including the prohibition of automated decision-making systems in Article 22 of the General Data Protection Regulation, the New York City AI transparency bill, and the 2017 amendments to the German Cartel Act and German Administrative Procedure Act. While the belief that something needs to be done is widely shared, there is far less clarity about what exactly can or should be done, or what effective regulation might look like. The book is divided into two major parts, the first of which focuses on features common to most AI systems, and explores how they relate to the legal framework for data-driven technologies, which already exists in the form of (national and supra-national) constitutional law, EU data protection and competition law, and anti-discrimination law. In the second part, the book examines in detail a number of relevant sectors in which AI is increasingly shaping decision-making processes, ranging from the notorious social media and the legal, financial and healthcare industries, to fields like law enforcement and tax law, in which we can

observe how regulation by AI is becoming a reality.

Algorithms are a fundamental building block of artificial intelligence - and, increasingly, society - but our legal institutions have largely failed to recognize or respond to this reality. The Cambridge Handbook of the Law of Algorithms, which features contributions from US, EU, and Asian legal scholars, discusses the specific challenges algorithms pose not only to current law, but also - as algorithms replace people as decision makers - to the foundations of society itself. The work includes wide coverage of the law as it relates to algorithms, with chapters analyzing how human biases have crept into algorithmic decision-making about who receives housing or credit, the length of sentences for defendants convicted of crimes, and many other decisions that impact constitutionally protected groups. Other issues covered in the work include the impact of algorithms on the law of free speech, intellectual property, and commercial and human rights law.

The Theory of Industrial Organization is the first primary text to treat the new industrial organization at the advanced-undergraduate and graduate level. Rigorously analytical and filled with exercises coded to indicate level of difficulty, it provides a unified and modern treatment of the field with accessible models that are simplified to highlight robust economic ideas while working at an intuitive level. To aid students at different levels, each chapter is divided into a main text and supplementary section containing more advanced material. Each chapter opens with elementary models and builds on this base to incorporate current research in a coherent synthesis. Tirole begins with a background discussion of the theory of the firm. In Part I he develops the modern theory of monopoly, addressing single product and multi product pricing, static and intertemporal price discrimination, quality choice, reputation, and vertical restraints. In Part II, Tirole takes up strategic interaction between firms, starting with a novel treatment of the Bertrand-Cournot interdependent pricing problem. He studies how capacity constraints, repeated interaction, product positioning, advertising, and asymmetric information affect competition or tacit collusion. He then develops topics having to do with long term competition, including barriers to entry, contestability, exit, and research and development. He concludes with a "game theory user's manual" and a section of review exercises. Important Notice: The digital edition of this book is missing some of the images found in the physical edition.

Computer science and economics have engaged in a lively interaction over the past fifteen years, resulting in the new field of algorithmic game theory. Many problems that are central to modern computer science, ranging from resource allocation in large networks to online advertising, involve interactions between multiple self-interested parties. Economics and game theory offer a host of useful models and definitions to reason about such problems. The flow of ideas also travels in the other direction, and concepts from computer science are increasingly important in economics. This book grew out of the author's Stanford University course on algorithmic game theory, and aims to give students and other newcomers a quick and accessible introduction to many of the most important concepts in the field. The book also includes case studies on online advertising, wireless spectrum auctions, kidney exchange, and network management.

Previous edition, 1st, published 1994.

The digital economy is gradually gaining traction through a variety of recent

technological developments, including the introduction of the Internet of things, artificial intelligence and markets for data. This innovative book contains contributions from leading competition law scholars who map out and investigate the anti-competitive effects that are developing in the digital economy.

New to this edition: --

A review of the theoretical research on unlawful collusion, focusing on the impact and optimal design of competition law and enforcement. Collusion occurs when firms in a market coordinate their behavior for the purpose of producing a supracompetitive outcome. The literature on the theory of collusion is deep and broad but most of that work does not take account of the possible illegality of collusion. Recently, there has been a growing body of research that explicitly focuses on collusion that runs afoul of competition law and thereby makes firms potentially liable for penalties. This book, by an expert on the subject, reviews the theoretical research on unlawful collusion, with a focus on two issues: the impact of competition law and enforcement on whether, how long, and how much firms collude; and the optimal design of competition law and enforcement. The book begins by discussing general issues that arise when models of collusion take into account competition law and enforcement. It goes on to consider game-theoretic models that encompass the probability of detection and penalties incurred when convicted, and examines how these policy instruments affect the frequency of cartels, cartel duration, cartel participation, and collusive prices. The book then considers the design of competition law and enforcement, examining such topics as the formula for penalties and leniency programs. The book concludes with suggested future lines of inquiry into illegal collusion.

Advances in artificial intelligence (AI) highlight the potential of this technology to affect productivity, growth, inequality, market power, innovation, and employment. This volume seeks to set the agenda for economic research on the impact of AI. It covers four broad themes: AI as a general purpose technology; the relationships between AI, growth, jobs, and inequality; regulatory responses to changes brought on by AI; and the effects of AI on the way economic research is conducted. It explores the economic influence of machine learning, the branch of computational statistics that has driven much of the recent excitement around AI, as well as the economic impact of robotics and automation and the potential economic consequences of a still-hypothetical artificial general intelligence. The volume provides frameworks for understanding the economic impact of AI and identifies a number of open research questions. Contributors: Daron Acemoglu, Massachusetts Institute of Technology Philippe Aghion, Collège de France Ajay Agrawal, University of Toronto Susan Athey, Stanford University James Bessen, Boston University School of Law Erik Brynjolfsson, MIT Sloan School of Management Colin F. Camerer, California Institute of Technology Judith Chevalier, Yale School of Management Iain M. Cockburn, Boston University Tyler Cowen, George Mason University Jason Furman, Harvard Kennedy School Patrick Francois, University of British Columbia Alberto Galasso, University of

Toronto Joshua Gans, University of Toronto Avi Goldfarb, University of Toronto Austan Goolsbee, University of Chicago Booth School of Business Rebecca Henderson, Harvard Business School Ginger Zhe Jin, University of Maryland Benjamin F. Jones, Northwestern University Charles I. Jones, Stanford University Daniel Kahneman, Princeton University Anton Korinek, Johns Hopkins University Mara Lederman, University of Toronto Hong Luo, Harvard Business School John McHale, National University of Ireland Paul R. Milgrom, Stanford University Matthew Mitchell, University of Toronto Alexander Oettl, Georgia Institute of Technology Andrea Prat, Columbia Business School Manav Raj, New York University Pascual Restrepo, Boston University Daniel Rock, MIT Sloan School of Management Jeffrey D. Sachs, Columbia University Robert Seamans, New York University Scott Stern, MIT Sloan School of Management Betsey Stevenson, University of Michigan Joseph E. Stiglitz, Columbia University Chad Syverson, University of Chicago Booth School of Business Matt Taddy, University of Chicago Booth School of Business Steven Tadelis, University of California, Berkeley Manuel Trajtenberg, Tel Aviv University Daniel Trefler, University of Toronto Catherine Tucker, MIT Sloan School of Management Hal Varian, University of California, Berkeley

"A fascinating book about how platform internet companies (Amazon, Facebook, and so on) are changing the norms of economic competition." --Fast Company Shoppers with a bargain-hunting impulse and internet access can find a universe of products at their fingertips. But is there a dark side to internet commerce? This thought-provoking exposé invites us to explore how sophisticated algorithms and data-crunching are changing the nature of market competition, and not always for the better. Introducing into the policy lexicon terms such as algorithmic collusion, behavioral discrimination, and super-platforms, Ariel Ezrachi and Maurice E. Stucke explore the resulting impact on competition, our democratic ideals, our wallets, and our well-being. "We owe the authors our deep gratitude for anticipating and explaining the consequences of living in a world in which black boxes collude and leave no trails behind. They make it clear that in a world of big data and algorithmic pricing, consumers are outgunned and antitrust laws are outdated, especially in the United States." --Science "A convincing argument that there can be a darker side to the growth of digital commerce. The replacement of the invisible hand of competition by the digitized hand of internet commerce can give rise to anticompetitive behavior that the competition authorities are ill equipped to deal with." --Burton G. Malkiel, Wall Street Journal "A convincing case for the need to rethink competition law to cope with algorithmic capitalism's potential for malfeasance." --John Naughton, The Observer

The field of artificial intelligence (AI) has made tremendous advances in the last two decades, but as smart as AI is now, it is getting smarter and becoming more autonomous. This raises a host of challenges to current legal doctrine, including whether AI/algorithms should count as 'speech', whether AI should be regulated under antitrust and criminal law statutes, and whether AI should be considered as

an agent under agency law or be held responsible for injuries under tort law. This book contains chapters from US and international law scholars on the role of law in an age of increasingly smart AI, addressing these and other issues that are critical to the evolution of the field.

Big Data and Big Analytics are a big deal today. Big Data is playing a pivotal role in many companies' strategic decision-making. Companies are striving to acquire a 'data advantage' over rivals. Data-driven mergers are increasing. These data-driven business strategies and mergers raise significant implications for privacy, consumer protection and competition law. At the same time, European and United States' competition authorities are beginning to consider the implications of a data-driven economy on competition policy. In 2015, the European Commission launched a competition inquiry into the e-commerce sector and issued a statement of objections in its Google investigation. The implications of Big Data on competition policy will likely be a part of the mix. *Big Data and Competition Policy* is the first work to offer a detailed description of the important new issue of Big Data and explains how it relates to competition laws and policy, both in the EU and US. The book helps bring the reader quickly up to speed on what is Big Data, its competitive implications, the competition authorities' approach to data-driven mergers and business strategies, and their current approach's strengths and weaknesses. Written by two recognized leading experts in competition law, this accessible work offers practical guidance and theoretical discussion of the potential benefits (including data-driven efficiencies) and concerns for the practitioner, policy maker, and academic alike.

This collection of essays represents the first in a series of two volumes that set out to reflect the state of the art of antitrust thinking in digital markets in jurisdictions around the world. The issues it tackles are many: the role of innovation, the conundrum of big data, the evolution of media markets, and the question of whether existing antitrust tools are sufficient to deal with the challenges of digital markets. Each author tackles the overarching themes from their unique national perspective. The resulting tapestry reflects the challenges and opportunities presented by the modern digital era, viewed through the lens of competition enforcement.

Information Exchange Between Competitors in EU Competition Law Martin Gassler
Competing firms often exchange information in order to make more informed market decisions which can help to overcome market inefficiencies. However, an abundance of legal and economic research as well as case law has shown that information exchange may also enable firms to engage in collusion more readily and sustain it longer. This book is the first to concentrate on this challenging topic of EU competition law in such depth. It focuses on 'pure' information exchanges – exchanges that are not ancillary to a wider pro-competitive or anticompetitive conduct – and thoroughly explains the characteristics of such information exchanges, their pro-competitive and anticompetitive effects and discusses all the relevant legal aspects for their

assessment. The author provides a robust analytical framework for assessing information exchanges under Article 101 TFEU, focusing on the risk of collusive outcomes and what types of information exchange are particularly harmful. With detailed attention to the leading cases on information exchange, the analysis examines the most important aspects for assessing information exchange between competitors, in particular: the concept of a concerted practice; the concepts of a restriction by object and effect, including their similarities and differences; the importance of evidentiary issues; the issue of signalling via advance public announcements; factors that facilitate collusion; efficiencies of information exchange, including market transparency; the legal challenges of tackling mere parallel conduct; facilitative practices in the Commission Guidelines, including the Horizontal Cooperation Guidelines; and safe harbours for certain types of information exchange. The book offers clear guidance on how to identify and thus distinguish information exchange that restricts competition by its object and information exchange that restricts competition (only) by its effects. It offers practical solutions to some of the perceived issues when assessing information exchanges. With its wealth of analysis not available from other sources, this concise yet comprehensive review of a much-debated topic in competition law offers clear guidance for practitioners in assessing the issues surrounding information exchange. The book will also be welcomed by competition law academics, competition lawyers and competition authority officials throughout Europe.

The rousing story of the last gasp of human agency and how today's best and brightest minds are endeavoring to put an end to it. It used to be that to diagnose an illness, interpret legal documents, analyze foreign policy, or write a newspaper article you needed a human being with specific skills—and maybe an advanced degree or two. These days, high-level tasks are increasingly being handled by algorithms that can do precise work not only with speed but also with nuance. These “bots” started with human programming and logic, but now their reach extends beyond what their creators ever expected. In this fascinating, frightening book, Christopher Steiner tells the story of how algorithms took over—and shows why the “bot revolution” is about to spill into every aspect of our lives, often silently, without our knowledge. The May 2010 “Flash Crash” exposed Wall Street's reliance on trading bots to the tune of a 998-point market drop and \$1 trillion in vanished market value. But that was just the beginning. In *Automate This*, we meet bots that are driving cars, penning haiku, and writing music mistaken for Bach's. They listen in on our customer service calls and figure out what Iran would do in the event of a nuclear standoff. There are algorithms that can pick out the most cohesive crew of astronauts for a space mission or identify the next Jeremy Lin. Some can even ingest statistics from baseball games and spit out pitch-perfect sports journalism indistinguishable from that produced by humans. The interaction of man and machine can make our lives easier. But what will the world look like when algorithms control our hospitals, our roads, our

culture, and our national security? What happens to businesses when we automate judgment and eliminate human instinct? And what role will be left for doctors, lawyers, writers, truck drivers, and many others? Who knows—maybe there's a bot learning to do your job this minute.

Artificial intelligence and related technologies are changing both the law and the legal profession. In particular, technological advances in fields ranging from machine learning to more advanced robots, including sensors, virtual realities, algorithms, bots, drones, self-driving cars, and more sophisticated "human-like" robots are creating new and previously unimagined challenges for regulators. These advances also give rise to new opportunities for legal professionals to make efficiency gains in the delivery of legal services. With the exponential growth of such technologies, radical disruption seems likely to accelerate in the near future. This collection brings together a series of contributions by leading scholars in the newly emerging field of artificial intelligence, robotics, and the law. The aim of the book is to enrich legal debates on the social meaning and impact of this type of technology. The distinctive feature of the contributions presented in this edition is that they address the impact of these technological developments in a number of different fields of law and from the perspective of diverse jurisdictions. Moreover, the authors utilize insights from multiple related disciplines, in particular social theory and philosophy, in order to better understand and address the legal challenges created by AI. Therefore, the book will contribute to interdisciplinary debates on disruptive new AI technologies and the law. The technical progress illustrated by the development of Artificial Intelligence (AI), Big Data technologies, the Internet of Things (IoT), online platforms, NBICs, autonomous expert systems, and the Blockchain let appear the possibility of a new world and the emergence of a fourth industrial revolution centered around digital data. Therefore, the advent of digital and its omnipresence in our modern society create a growing need to lay ethical benchmarks against this new religion of data, the "dataisme".

Ariel Ezrachi and Maurice Stucke take a hard look at today's app-assisted paradise of digital shopping. The algorithms and data-crunching that make online purchasing so convenient are also changing the nature of the market by shifting power into the hands of the few, with risks to competition, our democratic ideals, and our overall well-being. The increased prevalence of pricing algorithms incited an ongoing debate about new forms of collusion. The concern is that intelligent algorithms may be able to forge collusive schemes without being explicitly instructed to do so. I attempt to examine the ability of reinforcement learning algorithms to maintain collusive prices in a simulated oligopoly of price competition. To my knowledge, this study is the first to use a reinforcement learning system with linear function approximation and eligibility traces in an economic environment. I show that the deployed agents sustain supra-competitive prices, but tend to be exploitable by deviating agents in the short-term. The price level upon convergence crucially hinges on the utilized method to estimate the qualities of actions. These findings are robust to variations of parameters that control the learning process and the environment.

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