

Algorithmic Collusion Problems And Counter Measures

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The Cambridge Handbook of the Law of Algorithms - Woodrow Barfield 2020-10-31

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.

[Las viviendas vacacionales: entre la economía colaborativa y la actividad mercantil.](#) - 2019-05-13

Los incesantes y veloces avances sociales y tecnológicos a los que nos enfrentamos actualmente están suponiendo un cambio en los patrones de

consumo de nuestra sociedad. En el ámbito del arrendamiento de viviendas con fines turísticos, tales avances tecnológicos han propiciado su expansión gracias al desarrollo de plataformas digitales que difunden, facilitan y simplifican el proceso de contratación. A ello deben sumarse las transformaciones sociales fruto del auge de la economía colaborativa y que influyen significativamente en un segmento importante de turistas que prefieren las viviendas vacacionales al alojamiento tradicional (hotelero o extrahotelero).El proceso expansivo de esta modalidad alojativa, ha supuesto su inclusión en las agendas legislativas. Esta circunstancia plantea, de entrada, el interrogante de si el arrendamiento con fines turístico debe ser considerado una modalidad de la economía colaborativa o si, por el contrario, estamos ante una actividad económica más. Por otra parte, la perspectiva regulatoria plantea además una serie de problemas en torno a la cuestión competencial, pues se produce una disociación entre aquellas materias susceptibles de regulación por el legislador nacional y aquellas otras que deben ser acometidas por el legislador autonómico. Precisamente, y desde el año 2013, el panorama normativo autonómico presenta un mosaico de regulaciones de variado carácter, si bien en líneas generales todas convergen en restringir la actividad de arrendamiento de viviendas de uso turístico. Una tendencia

que ha terminado calando en la reciente modificación de las Leyes de Arrendamiento Urbano y de Propiedad Horizontal operada por el Real Decreto-ley 21/2018, de 14 de diciembre, de medidas urgentes en materia de vivienda y alquiler. A todo ello se suman las ordenanzas municipales, cada vez más restrictivas con la explotación de esta modalidad turística. Este cúmulo de circunstancias ha propiciado el nacimiento de esta obra en la que ofrecemos una visión interdisciplinar y transversal del fenómeno de las viviendas vacacionales o con fines turísticos, y en la que trataremos de dar respuesta a las numerosas incógnitas que plantea.

The effectiveness of collusion under antitrust immunity : the case of liner shipping conferences -

Data-intensive Text Processing with MapReduce - Jimmy Lin 2010

Our world is being revolutionized by data-driven methods: access to large amounts of data has generated new insights and opened exciting new opportunities in commerce, science, and computing applications. Processing the enormous quantities of data necessary for these advances requires large clusters, making distributed computing paradigms more crucial than ever. MapReduce is a programming model for expressing distributed computations on massive datasets and an execution framework for large-scale data processing on clusters of commodity servers. The programming model provides an easy-to-understand abstraction for designing scalable algorithms, while the execution framework transparently handles many system-level details, ranging from scheduling to synchronization to fault tolerance. This book focuses on MapReduce algorithm design, with an emphasis on text processing algorithms common in natural language processing, information retrieval, and machine learning. We introduce the notion of MapReduce design patterns, which represent general reusable solutions to commonly occurring problems across a variety of problem domains. This book not only intends to help the reader "think in MapReduce", but also discusses limitations of the programming model as well. This volume is a printed version of a work that appears in the Synthesis Digital Library of

Engineering and Computer Science. Synthesis Lectures provide concise, original presentations of important research and development topics, published quickly, in digital and print formats. For more information visit www.morganclaypool.com

Securing the Internet of Things - Shancang Li 2017-01-11

Securing the Internet of Things provides network and cybersecurity researchers and practitioners with both the theoretical and practical knowledge they need to know regarding security in the Internet of Things (IoT). This booming field, moving from strictly research to the marketplace, is advancing rapidly, yet security issues abound. This book explains the fundamental concepts of IoT security, describing practical solutions that account for resource limitations at IoT end-node, hybrid network architecture, communication protocols, and application characteristics. Highlighting the most important potential IoT security risks and threats, the book covers both the general theory and practical implications for people working in security in the Internet of Things. Helps researchers and practitioners understand the security architecture in IoT and the state-of-the-art in IoT security countermeasures Explores how the threats in IoT are different from traditional ad hoc or infrastructural networks Provides a comprehensive discussion on the security challenges and solutions in RFID, WSNs, and IoT Contributed material by Dr. Imed Romdhani

Transparency of Stock Corporations in Europe - Vassilios Tountopoulos 2019-12-12

This edited collection explores transparency as a key regulatory strategy in European business law. It examines the rationales, limitations and further perspectives on transparency that have emerged in various areas of European law including corporate law, capital markets law and accounting law, as well as other areas of law relevant for European (listed) stock corporations. This book presents a clear and accurate picture of the recent reforms in the European transparency regime. In doing so it endorses a multi-dimensional notion of transparency, highlighting the need for careful consideration and contextualisation of the transparency phenomenon. In addition, the book considers relevant

enforcement mechanisms and discusses the implications of disparate enforcement concepts in European law from both the private and public law perspectives. Written by a team of distinguished contributors, the collection offers a comprehensive analysis of the European transparency regime by discussing the fundamentals of transparency, the role of disclosure in European business law, and related enforcement questions.

Regulierung für Algorithmen und Künstliche Intelligenz - Daniel Zimmer 2021-11-19

Ob wir einen Flug buchen, einen Kredit beantragen oder auf einer Internetplattform den Lebenspartner suchen – oft wirkt auf der Seite unseres Vertragspartners eine Maschine mit, die auf der Grundlage einer algorithmengestützten Vorauswahl zu einer Entscheidung oder zu einem Vorschlag kommt. Der Einsatz von Algorithmen und künstlicher Intelligenz wirft vielfältige Fragen auf, die teils rechtlicher Natur sind, aber auch Bezüge zu Ethik, Ökonomie und Technik haben. Das Buch – das die Vorträge und Diskussionen einer Bonner Tagung wiedergibt – geht diesen Fragen nach: In welchen Bereichen bedarf es einer Regulierung, in welchen können Entwicklung und Einsatz von Algorithmen dem Markt überantwortet werden? Mit Beiträgen von Miriam Buiten, Markus Gabriel, Jan-Frederick Göhsl, Justus Haucap, Andreas Heinemann, Ulrich Kelber, Jürgen Kühling, Matthias Lehmann, Jörn Lüdemann, Michael Mock, Petra Pohlmann, Maximilian Poretschkin, Timo Rademacher, Johannes Rottmann, Matthias Schaut, Stefan Thomas, Maik Wolf, Stefan Wrobel und Daniel Zimmer.

Algorithms and Networking for Computer Games - Jouni Smed 2017-06-06

The essential guide to solving algorithmic and networking problems in commercial computer games, revised and extended Algorithms and Networking for Computer Games, Second Edition is written from the perspective of the computer scientist. Combining algorithmic knowledge and game-related problems, it explores the most common problems encountered in game programming. The first part of the book presents practical algorithms for solving “classical” topics, such as random numbers, procedural generation, tournaments, group formations and

game trees. The authors also focus on how to find a path in, create the terrain of, and make decisions in the game world. The second part introduces networking related problems in computer games, focusing on four key questions: how to hide the inherent communication delay, how to best exploit limited network resources, how to cope with cheating and how to measure the on-line game data. Thoroughly revised, updated, and expanded to reflect the many constituent changes occurring in the commercial gaming industry since the original, this Second Edition, like the first, is a timely, comprehensive resource offering deeper algorithmic insight and more extensive coverage of game-specific networking problems than ordinarily encountered in game development books. Algorithms and Networking for Computer Games, Second Edition: Provides algorithmic solutions in pseudo-code format, which emphasises the idea behind the solution, and can easily be written into a programming language of choice Features a section on the Synthetic player, covering decision-making, influence maps, finite-state machines, flocking, fuzzy sets, and probabilistic reasoning and noise generation Contains in-depth treatment of network communication, including dead-reckoning, local perception filters, cheating prevention and on-line metrics Now includes 73 ready-to-use algorithms and 247 illustrative exercises Algorithms and Networking for Computer Games, Second Edition is a must-have resource for advanced undergraduate and graduate students taking computer game related courses, postgraduate researchers in game-related topics, and developers interested in deepening their knowledge of the theoretical underpinnings of computer games and in learning new approaches to game design and programming.

Estudios de derecho de la competencia - Ingrid Soraya Ortiz Baquero 2022-07-01

Las transformaciones tecnológicas, sociales, económicas y políticas han hecho que el derecho de la competencia sea hoy una de las herramientas más importantes para garantizar la economía social, la libertad y permanencia de los operadores económicos en el mercado, la eficiencia económica y el bienestar del consumidor. Más reciente, controversial e

interesantes resulta la posición según la cual el derecho de la competencia debe propender igualmente por la equidad y la justicia en las relaciones de poder y, en esa medida, debe ser claramente un instrumento no solo de intervención en la economía sino de política social. El derecho de la competencia enfrenta a día de hoy retos a todo nivel, desde la generación de un sistema de prohibiciones y excepciones coherente, pasando por la revisión de ciertas conductas prohibidas, el rol que juegan estas normas como mecanismos de lucha contra la corrupción y su injerencia en el manejo y protección de datos personales, al igual que su utilidad frente a los nuevos desarrollos tecnológicos, hasta llegar a temas como la abogacía de la competencia -en cuanto mecanismo para evitar la indebida intervención del Estado en los mercados- y los fines que deben cumplir las autoridades de regulación y competencia. Todos estos tópicos se abarcan en este libro fruto del esfuerzo de numerosos expertos e investigadores cuyo examen se pone al servicio de una mayor difusión y desarrollo de la materia en nuestro país.

Algorithms and Law - Martin Ebers 2020-07-23

Exploring issues from big-data to robotics, this volume is the first to comprehensively examine the regulatory implications of AI technology. *Big Data and Competition Policy* - Professor Maurice Stucke 2016-08-02 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.

Robotics, AI and the Future of Law - Marcelo Corrales 2018-11-02

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.

Virtual Competition - Ariel Ezrachi 2016-11-30

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.

Foundations of Data Science - Avrim Blum 2020-01-23

This book provides an introduction to the mathematical and algorithmic foundations of data science, including machine learning, high-dimensional geometry, and analysis of large networks. Topics include the counterintuitive nature of data in high dimensions, important linear algebraic techniques such as singular value decomposition, the theory of random walks and Markov chains, the fundamentals of and important algorithms for machine learning, algorithms and analysis for clustering, probabilistic models for large networks, representation learning including topic modelling and non-negative matrix factorization, wavelets and compressed sensing. Important probabilistic techniques are developed including the law of large numbers, tail inequalities, analysis of random projections, generalization guarantees in machine learning, and moment methods for analysis of phase transitions in large random graphs. Additionally, important structural and complexity measures are discussed such as matrix norms and VC-dimension. This book is suitable for both undergraduate and graduate courses in the design and analysis of algorithms for data.

The Cambridge Handbook of Responsible Artificial Intelligence - Silja Voenekey 2022-11-17

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.

EU Competition Law - Alison Jones 2019-09

The essential guide to EU competition law for students in one volume; extracts from key cases, academic works, and legislation are paired with incisive critique and commentary from an expert author team. In this fast-paced subject area, the authors carefully highlight the most important cases, legislation, and developments to allow students to navigate the breadth of legislation and case law. With their clear explanations and commentary, the authors provide invaluable support to students as they approach this complex and highly technical area of law. Extracts provide opportunities for students to understand the law in practice, and to see its relevance to business. Indispensable for undergraduate and postgraduate students alike, this is the standalone guide to the competition law of the EU. Online resources: The text is accompanied by online resources containing: -An additional chapter on State Aid -Web links -Updates in the law

Economic Analysis in EU Competition Policy - Parcu, Pier L. 2021-12-10

This insightful book assesses emerging trends in the role of economic analysis in EU competition policy, exploring how it has substantially increased in terms of both theories and methods.

Noise - Daniel Kahneman 2021-05-18

From the Nobel Prize-winning author of *Thinking, Fast and Slow* and the coauthor of *Nudge*, a revolutionary exploration of why people make bad judgments and how to make better ones—"a tour de force" (*New York Times*). Imagine that two doctors in the same city give different diagnoses to identical patients—or that two judges in the same courthouse give markedly different sentences to people who have committed the same crime. Suppose that different interviewers at the same firm make different decisions about indistinguishable job applicants—or that when a company is handling customer complaints, the resolution depends on who happens to answer the phone. Now imagine that the same doctor, the same judge, the same interviewer, or the same customer service agent makes different decisions depending on whether it is morning or afternoon, or Monday rather than Wednesday. These are examples of noise: variability in judgments that should be

identical. In Noise, Daniel Kahneman, Olivier Sibony, and Cass R. Sunstein show the detrimental effects of noise in many fields, including medicine, law, economic forecasting, forensic science, bail, child protection, strategy, performance reviews, and personnel selection. Wherever there is judgment, there is noise. Yet, most of the time, individuals and organizations alike are unaware of it. They neglect noise. With a few simple remedies, people can reduce both noise and bias, and so make far better decisions. Packed with original ideas, and offering the same kinds of research-based insights that made Thinking, Fast and Slow and Nudge groundbreaking New York Times bestsellers, Noise explains how and why humans are so susceptible to noise in judgment—and what we can do about it.

Le droit antitrust de l'Union européenne - Tome I 1 - Walid Chaiehloudj 2022-11-17

Le droit antitrust de l'Union européenne correspond à l'application des articles 101 et 102 TFUE. Il s'agit des règles juridiques visant la lutte contre les ententes et les abus de position dominante anticoncurrentiels, ayant un impact sur le marché intérieur de l'Union européenne et affectant le commerce entre ses États membres. La spécificité de ces règles, par rapport aux autres composantes du droit de la concurrence de l'Union européenne, est qu'elles permettent essentiellement - mais non exclusivement - une intervention ex post de la Commission européenne. Leur définition s'appuie aujourd'hui sur une longue expérience décisionnelle, aussi bien administrative que juridictionnelle, qui permet d'en dégager les grands traits et ainsi constituer un socle stable de règles d'application. Pourtant, si les définitions classiques restent primordiales, elles sont régulièrement soumises à ces évolutions plus ou moins contextuelles. Cette dualité est au cœur de ce nouvel opus du Commentaire J. Mégret qui a voulu à la fois ancrer les définitions classiques du droit antitrust de l'Union européenne, tout en tenant compte de leur évolution la plus récente, et, en même temps, faire une place importante aux sujets les plus actuels comme les algorithmes ou les liens entre ce droit et la propriété intellectuelle. L'ouvrage est organisé en deux titres. Le premier permet de poser les quatre chapitres

centraux qui renvoient aux règles fondamentales d'application des articles 101 et 102 TFUE et qui concernent, dans l'ordre, les ententes, les abus de position dominante, la définition du marché pertinent et l'approche plus économique de la matière. Il est complété par un deuxième titre qui permet de mettre en œuvre ces règles fondamentales dans une optique dynamique. Les quatre chapitres qui le composent sont consacrés respectivement au cas spécifique de la détermination du marché pertinent pour les ententes, aux liens entre le droit antitrust et les abus de dépendance économique ainsi qu'avec la propriété intellectuelle et enfin aux pratiques algorithmiques dans le cadre du droit antitrust. L'ouvrage réunit autour de Mehdi Mezaguer, maître de conférences en droit public à l'Université Côte d'azur/IDPD, une équipe composée de spécialistes confirmés de la matière : Marie Cartapanis, maître de conférences en droit privé à Aix-Marseille Université, Walid Chaiehloudj, professeur de droit privé à l'Université de Perpignan et membre du collège de l'Autorité de la concurrence de la Nouvelle-Calédonie, Faustine Jacomino, docteure en droit, avocate au barreau de Nice, Julie Malet-Vigneaux, maître de conférences à l'Université du Littoral - Côte d'Opale, Frédéric Marty, chargé de recherche au CNRS, membre de l'Autorité de la concurrence en qualité de personnalité qualifiée pour les professions réglementées et Emma Salemme, docteure en droit, juriste à la Cour de justice de l'Union européenne. À PROPOS DES AUTEURS Walid Chaiehloudj est professeur de droit privé à l'Université de Perpignan et membre du collège de l'Autorité de la concurrence de la Nouvelle-Calédonie. Mehdi Mezaguer est maître de conférences en droit public à l'Université Côte d'azur/IDPD, directeur adjoint du Laboratoire de droit international et européen (LADIE) au sein de l'Université Côte d'Azur, et responsable des masters droit économique de l'Union européenne et migration studies. Marie Cartapanis est maître de conférences en droit privé à Aix-Marseille Université. Faustine Jacomino est docteure en droit, avocate au barreau de Nice. Frédéric Marty est chargé de recherche au CNRS, membre de l'Autorité de la concurrence en qualité de personnalité qualifiée pour les professions réglementées. Julie Malet-Vigneaux est maître de conférences à

l'Université du Littoral - Côte d'Opale.

Competition Law for the Digital Economy - Björn Lundqvist 2019-12-27

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.

For the Record - National Research Council 1997-07-09

When you visit the doctor, information about you may be recorded in an office computer. Your tests may be sent to a laboratory or consulting physician. Relevant information may be transmitted to your health insurer or pharmacy. Your data may be collected by the state government or by an organization that accredits health care or studies medical costs. By making information more readily available to those who need it, greater use of computerized health information can help improve the quality of health care and reduce its costs. Yet health care organizations must find ways to ensure that electronic health information is not improperly divulged. Patient privacy has been an issue since the oath of Hippocrates first called on physicians to "keep silence" on patient matters, and with highly sensitive data—genetic information, HIV test results, psychiatric records—entering patient records, concerns over privacy and security are growing. For the Record responds to the health care industry's need for greater guidance in protecting health information that increasingly flows through the national information infrastructure—from patient to provider, payer, analyst, employer, government agency, medical product manufacturer, and beyond. This book makes practical detailed recommendations for technical and organizational solutions and national-level initiatives. For the Record describes two major types of privacy and security concerns that stem from the availability of health information in electronic form: the increased potential for inappropriate release of information held by individual organizations (whether by those with access to computerized records or those who break into them) and systemic concerns derived

from open and widespread sharing of data among various parties. The committee reports on the technological and organizational aspects of security management, including basic principles of security; the effectiveness of technologies for user authentication, access control, and encryption; obstacles and incentives in the adoption of new technologies; and mechanisms for training, monitoring, and enforcement. For the Record reviews the growing interest in electronic medical records; the increasing value of health information to providers, payers, researchers, and administrators; and the current legal and regulatory environment for protecting health data. This information is of immediate interest to policymakers, health policy researchers, patient advocates, professionals in health data management, and other stakeholders.

Cloud Computing and Security - Xingming Sun 2018

This six volume set LNCS 11063 - 11068 constitutes the thoroughly refereed conference proceedings of the 4th International Conference on Cloud Computing and Security, ICCCS 2018, held in Haikou, China, in June 2018. The 386 full papers of these six volumes were carefully reviewed and selected from 1743 submissions. The papers cover ideas and achievements in the theory and practice of all areas of inventive systems which includes control, artificial intelligence, automation systems, computing systems, electrical and informative systems. The six volumes are arranged according to the subject areas as follows: cloud computing, cloud security, encryption, information hiding, IoT security, multimedia forensics.

The Future of Copyright in the Age of Artificial Intelligence - Gaon, Aviv H. 2021-09-07

The Future of Copyright in the Age of Artificial Intelligence offers an extensive analysis of intellectual property and authorship theories and explores the possible impact artificial intelligence (AI) might have on those theories. The author makes compelling arguments via the exploration of authorship, ownership and artificial intelligence.

Financial Regulation and Technology - Sheridan, Iain 2022-02-15

This important book analyses recurring issues within financial services regulation relevant to the use of technology, at a time when competition

is moving towards greater use of technology in the financial services sector. Iain Sheridan assumes no advanced knowledge of computers and related technology topics, but where necessary encapsulates the essential aspects to offer a comprehensive yet accessible guide to the regulation of finance and technology.

Hauptgutachten. Wettbewerb 2018 - Monopolkommission, 2018-11-24

Die Monopolkommission empfiehlt in ihrem XXII. Hauptgutachten "Wettbewerb 2018", die gesetzlichen Rahmenbedingungen an den digitalen Wandel anzupassen. Die Digitalisierung schreitet in vielen Bereichen der Wirtschaft voran. Preise werden zunehmend auf Grundlage von Algorithmen gesetzt. Streaming-Dienste und Videoportale schieben sich in der Zuschauergunst nach vorne und ersetzen das klassische Fernsehen. Bei der Arzneimittelversorgung ergänzt der Online-Handel zunehmend die Leistungen der niedergelassenen Apotheken. Den daraus resultierenden Strukturwandel gilt es zum Wohle der Verbraucher zu gestalten, mit fairen Regeln für die hergebrachten und die neuen Anbieter. Weiterhin befasst sich die Monopolkommission mit der Konzentration und Verflechtung von Großunternehmen sowie der Entwicklung von Marktmachtindikatoren. Auf der Grundlage einer Analyse der nationalen und europäischen Kartellamtspraxis werden Handlungsempfehlungen an den Gesetzgeber und die Kartellbehörden gemacht.

Algorithms and Law - Martin Ebers 2020-07-31

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.

Twenty Lectures on Algorithmic Game Theory - Tim Roughgarden 2016-08-30

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.

The Economics of Artificial Intelligence - Ajay Agrawal 2019-05-22

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 Treffler, University of Toronto Catherine Tucker, MIT Sloan School of Management Hal Varian, University of California, Berkeley

New Developments in Competition Law and Economics - Klaus Mathis 2019-03-18

This book further develops both the traditional and the behavioural

approach to competition law, and applies these approaches to a variety of timely issues. It discusses several fundamental questions regarding competition law and economics, and explores the applications of competition law and economics. In turn, the book analyses the interplay of intellectual property rights and patents in various aspects of competition law, and investigates the impacts that developments in information technology, such as big data analytics, have on competition law. The book also discusses the impact of energy law reforms on energy markets from a competition law perspective. Competition law is a classic field of economic analysis. This is largely due to the fact that competition law uses terms such as market, price, and competition and must therefore rely on economic know-how and analyses. In the United States, economic analysis has greatly influenced not just the scholarship on antitrust law, but also judicial decisions and agency enforcement. Antitrust law and economics are based on the traditional paradigm of neoclassical economics, which relies on the assumption that the market players, i.e. consumers and producers, are rational. This approach to competition law was later received in Europe under the banner of a “more economic approach”. For the past two decades, behavioural law and economics, which seeks to generate better insights into legal phenomena by providing more realistic psychological foundations for economic models, and to offer a multitude of applications in legislation and legal adjudication, has challenged the traditional economic approach to law in general and, more recently, to competition law specifically.

[Fighting Cross-Border Cartels](#) - Pierre Horna 2020-03-19

This book is the first detailed treatment of the approaches taken to enforce competition laws against cross-border cartels (CBCs) from the perspective of young and small competition authorities (more than 70% of the total number of authorities worldwide). No other legal or interdisciplinary scholarship exists in the market that deals with the issue of a taxonomy of CBCs combined with young/small competition authorities' problems. The book looks at the extent of the harms caused by CBCs and issues associated with tackling them at a transnational level. It explains why past solutions to problems with cooperation have failed and

proposes novel ideas on how to improve cooperation and coordination in certain types of CBC investigations (transnational and regional CBCs). The proposals are based on primary-source information and observations made by the author as part of his work in the UN, and interviews with leading enforcers from young, small, old and large jurisdictions. Young/small competition authorities, competition lawyers and economists, scholars and students within the fields of competition law and international law, and those interested in international cooperation and coordination in the area of cartel enforcement in emerging markets will greatly benefit from this book. It is clearly structured and extensively referenced, providing a valuable guide to the topic.

Anomaly Detection Principles and Algorithms - Kishan G. Mehrotra
2017-11-18

This book provides a readable and elegant presentation of the principles of anomaly detection, providing an easy introduction for newcomers to the field. A large number of algorithms are succinctly described, along with a presentation of their strengths and weaknesses. The authors also cover algorithms that address different kinds of problems of interest with single and multiple time series data and multi-dimensional data. New ensemble anomaly detection algorithms are described, utilizing the benefits provided by diverse algorithms, each of which work well on some kinds of data. With advancements in technology and the extensive use of the internet as a medium for communications and commerce, there has been a tremendous increase in the threats faced by individuals and organizations from attackers and criminal entities. Variations in the observable behaviors of individuals (from others and from their own past behaviors) have been found to be useful in predicting potential problems of various kinds. Hence computer scientists and statisticians have been conducting research on automatically identifying anomalies in large datasets. This book will primarily target practitioners and researchers who are newcomers to the area of modern anomaly detection techniques. Advanced-level students in computer science will also find this book helpful with their studies.

Las plataformas en línea y el transporte discrecional de viajeros por

carretera - Boboc, Silvia 2021-10-01

La intervención de plataformas en línea en el desarrollo de todo tipo de actividades realizadas bien entre iguales (peer to peer: P2P), sean estos particulares (consumer to consumer: C2C) o profesionales (business to business: B2B), bien de profesional a consumidor (business to consumer: B2C), constituye uno de los fenómenos económicos más relevantes del siglo XXI. El transporte no es ajeno al mismo y, de hecho, ha sido este ámbito uno de los de mayor conflictividad, con la plataforma francesa de carpooling BlaBlaCar y las plataformas de ridehailing Uber (estadounidense) y Cabify (española) como protagonistas del conflicto. Esta obra ofrece un completo análisis de la ordenación del mercado, la naturaleza jurídica y los interrogantes que desde el Derecho de la competencia plantea la actividad de Uber, Cabify y BlaBlaCar y de los conductores registrados en dichas plataformas. Examina el régimen jurídico del transporte discrecional de viajeros en vehículo de turismo, tanto público como privado, y de la intermediación en el transporte, en la normativa estatal y autonómica; determina la naturaleza jurídica de la actividad de las plataformas de transporte y de los conductores registrados en las mismas, y analiza los modelos de negocio de las plataformas desde la óptica de la ley de competencia desleal, así como si las mismas incurren en una conducta colusoria de fijación de precios.

The Collaborative Economy and EU Law - Vassilis Hatzopoulos
2018-02-22

'Disruptive innovation', 'the fourth industrial revolution', 'one of the ten ideas that will change the world'; the collaborative/sharing economy is shaking existing norms. It poses unprecedented challenges in terms of both material policies and governance in almost all aspects of EU law. This book explores the application - or indeed inadequacy - of existing EU rules in the context of the collaborative economy. It analyses the novelties introduced by the collaborative economy and discusses the specific regulatory needs and instruments employed therein, most notably self-regulation. Further, it aims to elucidate the legal status of the parties involved (traders, consumers, prosumers) in these multi-sided economies, and their respective roles in the provision of services,

especially with regard to liability issues. Moreover, it delves into a sector-specific examination of the relevant EU rules, especially on data protection, competition, consumer protection and labour law, and comments on the uncertainties and lacunae produced therein. It concludes with the acute question of whether fresh EU regulation would be necessary to avoid fragmentation or, on the contrary, if such regulation would create unnecessary burdens and stifle innovation. Taking a broad perspective and pragmatic view, the book provides a comprehensive overview of the collaborative economy in the context of the EU legal landscape.

Algorithms and Models for the Web-Graph - Stefano Leonardi
2004-10-11

This volume contains the 14 contributed papers and the contribution of the distinguished invited speaker Béla Bollobás as presented at the 3rd Workshop on Algorithms and Models for the Web-Graph (WAW 2004), held in Rome, Italy, October 16, 2004, in conjunction with the 45th Annual IEEE Symposium on Foundations of Computer Science (FOCS 2004). The World Wide Web has become part of our everyday life and information

retrieval and data mining on the Web is now of enormous practical interest. Some of the algorithms supporting these activities are based substantially on viewing the Web as a graph, induced in various ways by links among pages, links among hosts, or other similar networks.

The aim of the 2004 Workshop on Algorithms and Models for the Web-Graph was to further the understanding of these Web-induced graphs, and stimulate the development of high-performance algorithms and applications that use the graph structure of the Web. The workshop was meant both to foster an exchange of ideas among the diverse set of researchers already involved in this topic, and to act as an introduction for the larger community to the state of the art in this area. This was the third edition of a very successful workshop on this topic, WAW 2002 was held in Vancouver, Canada, in conjunction with the 43rd Annual IEEE Symposium on Foundations of Computer Science, FOCS 2002, and WAW 2003 was held in Budapest,

Hungary, in conjunction with the 12th International World Wide Web Conference, WWW 2003. This was the first edition of the workshop with formal proceedings.

OECD Business and Finance Outlook 2021 AI in Business and Finance -
OECD 2021-09-24

The OECD Business and Finance Outlook is an annual publication that presents unique data and analysis on the trends, both positive and negative, that are shaping tomorrow's world of business, finance and investment.

The Algorithmic Foundations of Differential Privacy - Cynthia Dwork 2014

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.

Graph Algorithms - Mark Needham 2019-05-16

Discover how graph algorithms can help you leverage the relationships within your data to develop more intelligent solutions and enhance your machine learning models. You'll learn how graph analytics are uniquely suited to unfold complex structures and reveal difficult-to-find patterns lurking in your data. Whether you are trying to build dynamic network models or forecast real-world behavior, this book illustrates how graph algorithms deliver value—from finding vulnerabilities and bottlenecks to detecting communities and improving machine learning predictions. This practical book walks you through hands-on examples of how to use graph algorithms in Apache Spark and Neo4j—two of the most common choices for graph analytics. Also included: sample code and tips for over 20 practical graph algorithms that cover optimal pathfinding, importance through centrality, and community detection. Learn how graph analytics vary from conventional statistical analysis Understand how classic graph algorithms work, and how they are applied Get guidance on which algorithms to use for different types of questions Explore algorithm examples with working code and sample datasets from Spark and Neo4j See how connected feature extraction can increase machine learning accuracy and precision Walk through creating an ML workflow for link prediction combining Neo4j and Spark

Kartellrechtliche Grenzen der Preisberatung - Laura Marie Bolz 2021-03-31

Ausgehend von der nationalen Anwendungspraxis und der jüngeren Rechtsprechung des EuGH untersucht die Arbeit am Beispiel der Preisberatung, als spezialisierter Form der Unternehmensberatung, den kartellrechtlichen Beurteilungsmaßstab für Verstöße gegen Art. 101

AEUV unter Mitwirkung Dritter. Dabei wird differenziert zwischen einer möglichen Haftung der Mandanten und einer Haftung des Dritten. Die herausgearbeiteten Kriterien werden sodann auf verschiedene Fallkonstellationen der Preisberatung angewendet. Die Arbeit zeigt Haftungsrisiken für Mandanten und Berater, aber auch Haftungslücken auf und erörtert, wie diese de lege ferenda geschlossen werden sollten, um eine Kartellförderung durch Dritte effektiv zu unterbinden.

L'intelligence artificielle et le droit - 2017-11-09

Depuis quelques années, on observe des avancées majeures dans le domaine de l'intelligence artificielle et des robots, en raison des progrès techniques indéniables et des traitements de données sans cesse plus performants (en lien avec le phénomène big data). Parmi les réalisations concrètes les plus marquantes, on pointe les véhicules autonomes, les drones militaires ou les logiciels susceptibles d'aider les médecins, les juges, ou les avocats dans leurs activités professionnelles. Au-delà des questions éthiques ou philosophiques qu'elle pose, cette robotisation de la vie constitue un véritable défi pour le droit, en ce sens que les règles actuellement en vigueur peuvent se révéler inadaptées ou insuffisantes pour encadrer cette nouvelle réalité. Cet ouvrage a pour objet d'analyser, de manière transversale, les principales questions posées par l'intelligence artificielle et les robots, en matière de protection de la vie privée, de propriété intellectuelle, de droit des obligations (contractuelles ou extra-contractuelles) ou de droit de la concurrence, avant d'adopter une approche sectorielle, avec l'examen des enjeux posés par la robotisation de la justice, de la finance, des services publics ou des transports (drones et véhicules autonomes).

Multiagent Systems - Yoav Shoham 2008-12-15

Multiagent systems combine multiple autonomous entities, each having diverging interests or different information. This overview of the field offers a computer science perspective, but also draws on ideas from game theory, economics, operations research, logic, philosophy and linguistics. It will serve as a reference for researchers in each of these fields, and be used as a text for advanced undergraduate or graduate courses. The authors emphasize foundations to create a broad and

rigorous treatment of their subject, with thorough presentations of distributed problem solving, game theory, multiagent communication and learning, social choice, mechanism design, auctions, cooperative game theory, and modal logics of knowledge and belief. For each topic, basic

concepts are introduced, examples are given, proofs of key results are offered, and algorithmic considerations are examined. An appendix covers background material in probability theory, classical logic, Markov decision processes and mathematical programming.