

# ARTIFICIAL INTELLIGENCE AND THE LAW



ARTIFICIAL INTELLIGENCE  
AND THE LAW

Second Revised Edition

Jan DE BRUYNE  
Cedric VANLEENHOVE  
(eds.)



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**Chapter 19.**

**AI and Antitrust: Between Collision and Collusion**

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**Chapter 20.**

**AI in the Belgian Media Landscape. When Fundamental Risks Meet  
Regulatory Complexities**

Noémie KRACK, Marie BEUDELS, Peggy VALCKE and Aleksandra  
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# FOREWORD

Artificial intelligence (AI) is becoming increasingly more prevalent in our daily social and professional lives. AI can be of benefit to a wide range of sectors such as healthcare, energy consumption, climate change and financial risk management. AI can also help to detect cybersecurity threats and fraud as well as enable law enforcement authorities to fight crime more efficiently.<sup>1</sup> AI systems are more accurate and efficient than humans because they are faster and can better process information.<sup>2</sup> They can perform many tasks ‘better’ than their human counterparts.<sup>3</sup> Companies from various economic sectors already rely on AI applications to decrease costs, generate revenue, enhance product quality and improve competitiveness.<sup>4</sup> AI systems and robots can also have advantages for the specific sector in which they are to be used. Take the example of autonomous vehicles. Transport will become more time-efficient with autonomous car technology. Self-driving cars will also enable people currently facing restrictions for operating a vehicle – such as the elderly, minors or disabled people – to fully and independently participate in traffic. Traffic will become safer as well. The number of accidents will decrease as computers are generally much better drivers than humans.<sup>5</sup>

At the same time, however, the introduction of AI systems and robots will present many challenges. These will only become more acute in light of the predicted explosive growth of the robotics industry over the next decade.<sup>6</sup> AI

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<sup>1</sup> European Commission, Press Release, IP/19/1893, ‘Artificial intelligence: Commission takes forward its work on ethics guidelines’, 8 April 2019, [https://europa.eu/rapid/press-release\\_IP-19-1893\\_en.htm](https://europa.eu/rapid/press-release_IP-19-1893_en.htm).

<sup>2</sup> S.G. Tzafestas, *Roboethics: A Navigating Overview* (Athens: Springer, 2015), p. 147.

<sup>3</sup> H.M. Deitel and B. Deitel, *Computers and Data Processing: International Edition* (Orlando: Academic Press, 2014), p. 434. See in this regard the experiment with supercomputer WATSON and the identification of lung cancer cases (I. Steadman, ‘IBM’s Watson is better at diagnosing cancer than human doctors’, *Wired*, 11 February 2013, [www.wired.co.uk/article/ibm-watson-medical-doctor](http://www.wired.co.uk/article/ibm-watson-medical-doctor)).

<sup>4</sup> S.H. Ivanov, ‘Robonomics – Principles, Benefits, Challenges, Solutions’, *Yearbook of Varna University of Management*, 2017, vol. 10, pp. 283–285.

<sup>5</sup> See for example: J.R. Zohn, ‘When Robots Attack: How Should the Law Handle Self Driving Cars That Cause Damages?’, *University of Illinois Journal of Law, Technology and Policy*, 2015, vol. 2, p. 471; T. Malengreau, ‘Automatisation de la conduite: quelles responsabilités en droit belge? (Première partie)’, *RGAR*, 2019, vol. 5, nos. 15578–15607. Also see: J. De Bruyne and J. Tanghe, ‘Liability for damage caused by autonomous vehicles: a Belgian perspective’, *Journal of European Tort Law*, vol. 8, no. 3, pp. 324–371.

<sup>6</sup> R. Calo, ‘Robots in American Law’, University of Washington School of Law Research Paper no. 2016–04, 2016, p. 3.

has implications for various facets of our society.<sup>7</sup> Some even predict that AI systems can completely eradicate humanity in the long run.<sup>8</sup> There are also several important ethical issues associated with (programming and using) AI systems. The commercialisation of AI will pose several challenges from a legal and regulatory point of view as well.<sup>9</sup>

In this second edition, scholars from various legal disciplines critically examine how AI systems may have an impact on Belgian law. While specific topics of Belgian private and public law are thoroughly addressed, the book also provides a general overview of many regulatory and ethical AI evolutions and tendencies in the European Union. The book additionally explains basic AI-related concepts such as machine learning, robots, Internet of Things and expert systems. Therefore, it is a must-read for legal scholars, practitioners and government officials as well as for anyone with an interest in law and technology. As AI influences a wide range of legal areas, a choice of topics had to be made. We decided to base this selection on several criteria. We included topics that already attracted attention in international scholarship and policy documents (e.g., tort law, consumer protection, human rights and data protection). The second edition of this book builds upon the chapters of the first edition. They were updated where necessary. Two new chapters were included in the second edition.

**Chapter 1** provides a broad overview of AI. After some introductory thoughts on how to define AI, the authors focus on the foundations and main paradigms of AI. The current state of the art for a wide range of applications as well as their expected evolutions are discussed. The chapter ends with a glance at the more distant future and some considerations regarding the ethical and safety aspects of AI.

**Chapter 2** examines which legal rules are most conducive to the emergence of innovation within a market economy. Western legal systems follow the OECD and the World Bank and welcome tax incentives for research and development (R&D) as sound innovation policy. Based on developments in institutional economics, the chapter illustrates that the proposal of tax incentives for innovation encounters significant information problems. Relying on enriched models of what innovation is, the author argues that the best innovation policy lies in supporting secure, stable and general rules of property and contract.

**Chapter 3** provides an overview of the main highlights of the debate on AI ethics and regulation that is currently taking place at various societal levels and

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<sup>7</sup> See: Y.N. Harari, *Homo Deus. A Brief History of Tomorrow* (London: Random House, 2016), 528 p.; J. De Bruyne and N. Bouteica, *Artificiële intelligentie en maatschappij* (Turnhout: Gompel&Svacina, 2021), forthcoming.

<sup>8</sup> See: N. Bostrom, *Superintelligence: Paths, Dangers, Strategies* (Oxford: Oxford University Press, 2014), 328 p.

<sup>9</sup> R. Leenes et al., 'Regulatory challenges of robotics: some guidelines', *Law, Innovation and Technology*, 2017, vol. 9, no. 2, p. 2.

in various parts of the world. The chapter hopes to give a glimpse of the direction in which the ethical and legal framework on AI might evolve in the coming years.

**Chapter 4** discusses the advent of AI techniques such as natural language processing and machine learning within the area of dispute resolution, focusing namely on the development and challenges of quantitative legal prediction applications. It examines some existing applications and highlights the advantages that this new development could bring, whilst shedding light on the challenges that quantitative legal prediction poses to the legal system. The author concludes by critically appraising the situation in Belgium.

**Chapter 5** addresses the potential of AI for international arbitration, and, more specifically, the question of whether an AI system could be appointed as an arbitrator. The first part of this chapter goes into the technical (data) requirements which would need to be met in order to develop an AI arbitrator. The second part discusses a number of possible legal obstacles to AI arbitrators. On the basis of the findings of the first two parts, the author goes on to consider how the future of AI-based dispute resolution and arbitration may evolve.

**Chapter 6** addresses the relationship between AI and human rights. It explores how AI systems and applications pose risks and opportunities for human rights. The chapter provides an in-depth analysis of the prohibition of discrimination in an AI-context. The authors explore what role human rights can play in fulfilling AI's potential.

**Chapter 7** sheds some light on important questions of international law when dealing with robots. The reader is introduced to basic concepts of international humanitarian law and several *prima facie* concerns regarding their relationship to lethal autonomous weapons (LAWs). The authors then explore the legal aspects of LAWs relating to two themes: the authority awarded to machines in an armed conflict, as well as the processes and procedural safeguards behind targeting and engagement choices. This is followed by a discussion of the current applications of LAWs and their foreseeable developments.

**Chapter 8** discusses AI from a data protection perspective by using smart home assistants (SHAs), such as Amazon Alexa and Google Home, as a case study. SHAs are studied through the lens of the data protection framework and the GDPR in particular. The contribution investigates the obligations of data controllers, the rights of data subjects, the remedies the latter can rely on and the enforcement actions that have already been undertaken in relation to SHAs' data protection issues. Specific attention is devoted to the grounds for lawful processing of data, children as 'invisible' data subjects, and concerns regarding automated decision-making.

**Chapter 9** deals with the interface of AI and intellectual property (IP) law, with a focus on copyright and patent law. First, the protection of AI technology is discussed. Second, attention shifts to the protection of output generated through or by an AI system. In this context, the author thoroughly analyses the

issue of AI authorship and/or inventorship as well as the question of ownership of IP rights associated with AI-generated content.

**Chapter 10** focuses on the tax implications related to AI and robots from a domestic and international perspective. In this respect, the chapter firstly analyses the current tax rules applicable in Belgium in relation to AI and robots and discusses whether there is a general need to implement a robot tax. In addition, it analyses the tax challenges posed by AI and smart robots from an international perspective by using a simplified case study and concludes by providing an overview of the opportunities that AI can create for tax authorities, tax practitioners and corporations.

**Chapter 11** provides an overview of issues regarding robotisation from a labour law perspective. It explains the concept of robotisation and positions it in the broader context of Industry 4.0. It examines the impact of robotisation on employment with special attention for the Belgian labour market and proposes some recommendations in that regard. Finally, it investigates the impact of robotisation on health and safety, responsibility, privacy and discrimination in the workplace.

**Chapter 12** deals with the hypothesis of technological unemployment caused by AI-driven automation and its impact on social security law. This hypothesis is especially relevant for social security systems that either put employment structurally at their centre for determining eligibility or in which employment serves as the legitimation for the rights-based character of social security entitlements. This chapter describes the possible flaws in social security systems that are designed this way when hypothetically confronted with mass technological unemployment.

**Chapter 13** focuses on the use of AI systems in Belgian contract law. In the chapter both standard solutions to deal with a faulty contract are discussed. That is, on the one hand, considering AI as a mere communication tool, or on the other hand, granting the AI system legal personality. The goal of this chapter is to come up with a logical framework that would offer a solution to spread the risk of a faulty contract, due to the AI system, more evenly over both contracting parties.

**Chapter 14** deals with extra-contractual liability for damage caused by AI systems. It examines whether the existing traditional liability regimes in Belgian tort law are adapted to the reality of AI systems and their unique characteristics such as autonomy and opaqueness. The authors analyse fault-based liability, liability for defective things and products, legal personality for AI systems, and also shed light on causation in an AI context.

**Chapter 15** examines the impact of telematics on policy underwriting in vehicle insurance. It provides an analysis of some legal challenges of using telematics in vehicle insurance. The author focuses on the challenges centred around the underwriting policy technique in vehicle insurance and data protection concerns.

**Chapter 16** focuses on the automation of creditworthiness assessments, and more specifically on credit scoring systems. Although digitalisation and automation within financial services should be encouraged as they may benefit consumer-borrowers, the fact that this method triggers a lot of challenges and potential ramifications for consumers cannot be ignored. This chapter therefore tries to answer the question whether the current (European) regulation is strong enough to withstand this new digital reality facing consumers and to fully protect consumers against negative effects that may go alongside automated credit decisions.

**Chapter 17** analyses consumer law in the era of AI. The author first provides a context for the use of AI in the business to consumer (B2C) context. He then examines the building blocks for an AI consumer policy. Finally, he analyses some of the hurdles AI presents to consumers and how this can be dealt with through consumer law.

**Chapter 18** deals with the use of AI in the healthcare sector. One of the major concerns expressed in literature is the ‘dehumanisation’ of the healthcare sector and the possible negative impact of AI and robotics on the personal relationship between physicians and patients. In this chapter the author nuances this fear of ‘dehumanisation’ of the physician-patient relationship in light of the current legal framework in Belgium.

**Chapter 19** focuses on the implications of AI for the field of EU competition law and provides a comprehensive overview of the current state of the art. The underlying theme within this contribution is ‘predictability’: while AI is often said to function as a black box, it needs to be borne in mind that algorithms essentially perform a set of steps that any individual could also carry out himself. The ability to retrace these steps offers some solace to competition authorities put in a position to judge the anticompetitive nature of machine intelligence.

**Chapter 20** sets the scene with a brief sketch of how AI systems are used in the media sector and of the complex Belgian media law landscape. It subsequently discusses risks and opportunities arising from the use of three AI media applications: recommender systems, content moderation systems and deepfakes. For each of these technologies, it analyses to what extent existing and upcoming rules in Belgian and EU media law (and related frameworks) can address the identified challenges. It formulates concluding thoughts in light of the specificities of Belgian media law and of the crucial role that the media represents for democracy and fundamental rights.

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**Dina Scornos** is managing associate at Deloitte Legal and a PhD candidate at the Institute of Tax Law at KU Leuven. She studied law at KU Leuven and completed her studies *cum laude* in June 2011. During the academic year 2011–2012, Dina undertook a Masters in Taxation also at KU Leuven which she completed *magna cum laude* in June 2012. During that year she participated in the European and International Tax Moot Court Competition. She and her team won the competition and also several other prizes such as “best pleading team for applicant” and “best defendant memorandum”. In 2012, Dina worked as a tax consultant at a large consultancy firm before registering as a lawyer-trainee in 2013 at the Brussels Bar. She became a qualified lawyer in 2016 while she was working at an international law firm dealing with tax matters, specialising in transfer pricing cases. She joined the Institute of Tax Law at the KU Leuven as a PhD candidate in 2017, working on her PhD relating to the impact of AI on international corporate taxation.

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**Bruno Van den Bosch** is a former researcher at Consumer Competition Market (CCM) and a former affiliated researcher at the University of Leiden. He started his research on the application of mathematics and computational analysis to legal matters in the research master programme in law at KU Leuven, which he completed in 2020. Currently, Bruno is pursuing a degree in bioscience engineering at KU Leuven.

**Carl Vander Maelen** is a PhD candidate and academic assistant at the research group Law & Technology at Ghent University, Belgium. He commenced his doctoral research in February 2018 and studies codes of conduct based on Articles 40 and 41 GDPR, as well as the impact they have on corporate behavior and global data protection standards. For his work, he has received the 'Young Scholar Award – 1<sup>st</sup> Prize' during the 2018 Amsterdam Privacy Conference and the award for 'Best Postgraduate Article' during the 2019 BILETA Conference. He has completed internships at the Brussels data protection law firm Time.Lex and the Embassy of Belgium in Washington D.C.

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**Peggy Valcke** is Full Professor of Law and Technology (BOFZAP) at KU Leuven and Vice Dean for Research at the Faculty of Law and Criminology. She is co-director of the Centre for IT & IP Law, executive committee member of Leuven.AI, and principal investigator in the Security & Privacy Department of imec. She has taken up visiting and part-time positions at Tilburg University, Bocconi University, the European University Institute and Central European University. She served as elected Vice-Chair of the Council of Europe's Ad hoc Committee on Artificial Intelligence (CAHAI) and is currently Bureau member of its successor committee, CAI. She is co-director of the Flemish Knowledge Centre on Data and Society and has been assessor/judge at the Flemish Media Regulator since 2008 (and, between 2008 and 2021, assessor/judge at the Belgian Competition Authority).

**Matthias Van Der Haegen** is judicial trainee within the Belgian judiciary and invited professor of civil procedure at the Free University of Brussels. Until 2021, he was assistant professor at the Maastricht Law & Tech Lab (Maastricht University) and invited professor at Ghent University, where he taught legal history. He obtained his PhD in 2019 at Ghent University as a PhD fellow of the Research Foundation Flanders (FWO). Matthias studied law at the University of Oxford (M.Jur., 2015) and Ghent University (LL.M., 2014).

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**Sebastiaan Van Severen** is a PhD candidate and academic assistant at the research group Public International Law at Ghent University, Belgium. Before acquiring his Master's Degree in Law at Ghent University, he completed internships at the political desk of the Belgian Embassy in Bangkok, at the UN Directorate of the Belgian Ministry of Foreign Affairs, and at the Human Rights and Law division of UNAIDS. His research focuses on the Russian approaches to public international law, with a recent focus on International Humanitarian Law.



**Benjamin Verheye** is a part-time post-doctoral researcher at the Institute for Property Law of the KU Leuven (Belgium). In December 2020, he defended his PhD dissertation on land registration in a comparative perspective. Apart from general property law, his research also concerns law and technology, law and sustainability and the crossroads of both. He approaches these topics mostly from a real estate and notarial angle. In 2019, he won the TPR-Price for a contribution on the future circular real estate. Benjamin is also a notarial trainee at the office of notary Dirk Hendrickx in Bruges. Furthermore, he is the managing editor of the *European Review of Private Law*, a member of the board of the *Belgian Journal for Justices of the Peace* and a correspondent for the *Belgian Journal for Notaries*.

**Judith Vermeulen** is a voluntary postdoctoral researcher at the Faculty of Law and Criminology of Ghent University, Belgium. There, she is a member of the Law & Technology research group, the Human Rights Centre and PIXLES. Judith obtained her PhD in July 2022 after she successfully defended her doctoral thesis “The Algorithmic State of Mind: A Human Rights Frame for Governing News Recommendation”. The main research aim was to establish how existing legal rules, including human rights, apply to news recommendation practices and whether they require further regulation. The research formed part of a larger, interdisciplinary research project called #NewsDNA.

**Jakob Markus Werbrouck** holds a PhD in social security law from KU Leuven. After working as a doctoral researcher at the Institute for Social Law (ISR) for 5 years, he successfully defended his thesis on the multidimensional nature of the pension concept in December 2021. Prior to his position as a doctoral researcher, he studied law at KU Leuven, Trinity College Dublin, and the University of Cambridge. Jakob Markus currently works as a policy advisor to the Belgian federal Minister for Pensions.

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