

Book Review

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Book: Multidisciplinary Perspectives on Artificial Intelligence and the Law

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Abstract

Artificial Intelligence (AI) is an important emerging topic in research and practice. Our daily lives, as well as the society and indeed the industry are being reshaped by AI. The implementation of AI in different technologies will have impacts and implications from different perspectives. Recent advancements in the relevant fields have been reported in several book chapters. However, the most useful works would be those approaching the problem from a multidisciplinary perspective. The recently published book title **"Multidisciplinary Perspectives on Artificial Intelligence and the Law"** has this advantage. The book utilizes a new attitude towards the emerging challenges in regulation of AI-based technologies. Chapters are diverse and written by different pioneering scholars from different fields. This note is dedicated to introduce and review the contents of the book from a practical perspective. This book elaborates the challenges in regulating AI and explores a number of significant topics emerging in legal studies as the AI is being increasingly introduced to the society. The book firstly introduces the AI and includes a brief history as well as the state of the art. Then it dedicates each chapter to an important topic which has legal consequences and challenges.

Keywords Regulation of artificial intelligence, Security and privacy, ethics, discrimination, Liability.

Introduction

AI-based technological advancements have been emerging to a significant milestone in which they play an increasingly critical role in the human life. This emergence is largely due to the increased computing power, the growing availability of data and the advancement of algorithms. AI is expected to be a central part of many prospective technological achievements in near future. The application of AI brings opportunities and challenges. Among the opportunities are the economic growth and efficiency. Among the challenges are the ethical and legal risks and uncertainty entailed by AI-based systems. It is ad-

mitted by many, that the AI was initially allowed to largely develop without guidelines or rules [1]. It is very well understood that regulations and laws are fundamental for shaping the way the AI is going to form our future. To have a grasp of what challenges AI can cause to our lives, let's probe into some aspects of AI-based technologies.

1. Ethics: One of the many fields in which AI is expected to be applied, is the field of decision making. Decision making is a process in which an executive manager, a politician or a financial advisor decides on a specific choice among several alternatives based on qualitative and quantitative evaluations of uncertain and usually indeci-



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sive data. AI systems can be tamed to imitate the human decision-making process by being fed very large number of decisions made by successful managers in different situations. The decision of the AI system can be used as a recommendation for managers. However, it is not certain that an AI-based decision is ethical. In fact, AIO is not trained to care about ethical issues and human values. Therefore, it is likely that an AI-based decision/ recommendation is against the ethical values and requirements. It is important to devise plans to assess the AI system and to determine its ability to avoid catastrophic consequences before it is used in large scale.

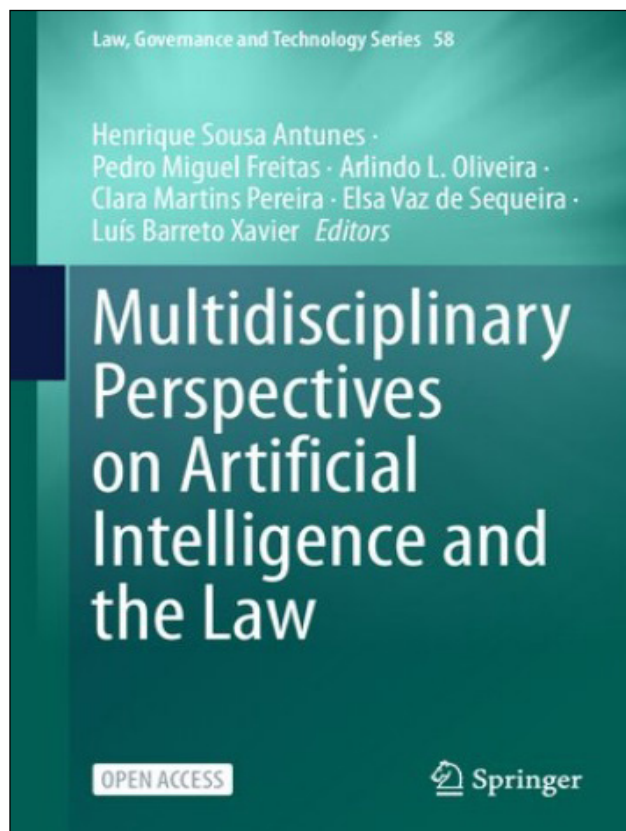
2. Discrimination: AI-based systems may automatically categorize people based on their gender, ethnicity, etc. and discriminate based on these categories. The discrimination may be based on past data in which the cost of depriving some groups from their rights was higher than other groups.

3. Privacy and security: AI-based systems are likely to breach the people privacy and compromise personal or national security. This is very likely because not only AI but also politicians and security agencies are eager to gather as much personal data as possible for processing and classification.

4. Liability: A very important concern in AI-based activities is the question of liability. If an AI-based system causes some loss of benefit or even an injury, it will be crucial to determine who was responsible for that incident. An AI-based system may be generated by using large training data from the internet. Those data are uploaded by different yet unknown people from different countries. Therefore, it is a very challenging task to determine the culprit behind these incidents.

The book **“Multidisciplinary Perspectives on Artificial Intelligence and the Law”** elaborates the aforementioned challenges and discusses legal aspects for these problems. As the book states: “The debate over AI is far from over, the need for rigorous analysis has never been greater. This book thus brings together contributors from different fields and backgrounds to explore how the law might provide answers to some of the most pressing questions raised by AI. An outcome of the Católica Research Centre for the Future of Law and its interdisciplinary working group on Law and Artificial Intelligence, it includes contributions by leading scholars in the fields of technology, ethics and the law.” [1].

This book review is dedicated to introduce and discuss the recently published book entitled as **“Multidisciplinary Perspectives on Artificial Intelligence and the Law”**.



Book description

The bibliographical information of the book are as follows: Henrique Sousa Antunes, Pedro Miguel Freitas, Arlindo L. Oliveira, Clara Martins Pereira, Elsa Vaz de Sequeira, Luís Barreto Xavier (Editors), *Multidisciplinary Perspectives on Artificial Intelligence and the Law*, Springer Cham, Dec. 2023, Cham, Switzerland.

The book is published in English. The publisher; Springer, is a well-known highly reputed publication house which publishes applied and theoretical books in many scientific disciplines. Authors and editors are among celebrated experts from around the world.

The book contains 456 pages, three parts, 23 chapters and many figures.

Significance of the subject

AI has an increasingly important role in our daily lives. The effects of AI on different facets of human civilization and society are not yet fully comprehended. Therefore, the importance of this book can't be emphasized enough.

Readership

The book has a broad audience. Legal experts, attorney and experts working at regulating organizations are the most relevant. Engineers who develop or use AI as a tool are also an important audience.

Structure and organization

"Multidisciplinary Perspectives on Artificial Intelligence and the Law" has three parts and 23 chapters. Each chapter is dedicated to a specific challenge of AI-based systems. In the following, the main contents of each chapter are given:

Part I. Scientific, Technological and Societal Achievements in Artificial Intelligence

This part of the book introduces the subject and makes the reader familiar with different perspectives in AI systems. The following chapters are included in this part:

1. Artificial Intelligence: Historical Context and State of the Art
2. The Impact of Language Technologies in the Legal Domain
3. Societal Implications of Recommendation Systems: A Technical Perspective
4. Data-Driven Approaches in Healthcare: Challenges and Emerging Trends
5. Security and Privacy

While the first chapter is a must-read for all readers who are not familiar with AI, the second and third chapters are only relevant to those working in the domains of law and sociology. The fourth section would be of interest to bio-medical engineers as well as standardization and conformity assessment experts. The fifth chapter has the most diverse audience as it is the concern of almost all people.

Part II. Ethical and Legal Challenges in Artificial Intelligence

The second part of the book introduces the legal challenges AI poses to the society. The following chapters are included in this part:

6. Before and Beyond Artificial Intelligence: Opportunities and Challenges
7. Autonomous and Intelligent Robots: Social, Legal and Ethical Issues
8. The Ethical and Legal Challenges of Recommender Systems Driven by Artificial Intelligence
9. Metacognition, Accountability and Legal Personhood of AI
10. Artificial Intelligence and Decision Making in Health: Risks and Opportunities
11. The Autonomous AI Physician: Medical Ethics and Legal Liability
12. Ethical Challenges of Artificial Intelligence in Medicine and the Triple Semantic Dimensions of Algorithmic Opacity with Its Repercussions to Patient Consent and Medical Liability

Chapter 6 is a brilliant introduction on the opportunities

and challenges of AI. Chapters 7, 8 and 9 are most relevant for legal experts and researchers. Chapters 10-12 are equally interesting for bio-medical engineers, physicians and legal experts.

Part III. The Law, Governance and Regulation of Artificial Intelligence

The third part of the book is dedicated to the regulation of AI. The following chapters are included in this part:

13. Dismantling Four Myths in AI & EU Law Through Legal Information 'About' Reality
14. AI Modelling of Counterfactual Thinking for Judicial Reasoning and Governance of Law
15. Judicial Decision-Making in the Age of Artificial Intelligence
16. Liability for AI Driven Systems
17. Risks Associated with the Use of Natural Language Generation: Swiss Civil Liability Law Perspective
18. AI Instruments for Risk of Recidivism Prediction and the Possibility of Criminal Adjudication Deprived of Personal Moral Recognition Standards
19. The Relevance of Deepfakes in the Administration of Criminal Justice
20. Antitrust Law and Coordination Through AI-Based Pricing Technologies
21. The "Artificial Intelligence Act" Proposal on European e-Justice Domains Through the Lens of User-Focused, User-Friendly and Effective Judicial Protection Principles
22. The European Union's Approach to Artificial Intelligence and the Challenge of Financial Systemic Risk
23. Regulating AI: Challenges and the Way Forward Through Regulatory Sandboxes

Chapters 13-19 are mostly relevant for legal research. Chapter 20 may be of interest to financial researchers. Chapters 21-23 are relevant for law-makers and experts in regulatory administrations.

Novelty and Innovation

The book is very novel as it actually contains several research topics.

Conclusion

In this book review, a recently published book titled: "Multidisciplinary Perspectives on Artificial Intelligence and the Law" is introduced and reviewed. Content, chapters, practicality and innovative aspects of the book are briefly discussed. The book provides a concise and comprehensive resource. With its strengths lying in dealing with novel and emerging topics, the book effectively aids in understanding challenges in law development, regulation, standardization and conformity assessment.

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Consent for publication

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[1] Henrique Sousa Antunes, Pedro Miguel Freitas, Arlindo L. Oliveira, Clara Martins Pereira, Elsa Vaz de Sequeira, Luís Barreto Xavier (Editors), Multidisciplinary Perspectives on Artificial Intelligence and the Law, Springer Cham, Dec. 2023, Cham, Switzerland.

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