

Rodney D. Ryder

Rodney D. Ryder is a lawyer with over twenty-five years of experience in Technology, Data Privacy, Intellectual Property, and New Media Law[s]. He is the Founding Partner of Scriboard, a full-service commercial law firm with cutting edge specialisation in technology, new media and intellectual property laws. Mr. Ryder has been nominated as a 'Leading Lawyer' in intellectual property, technology, communications, and media law by Asia Law, Who'sWhoLegal, Asia Legal 500, amongst other international publications. He counsels a wide range of clients from start-ups to the Fortune 100 and represents them in litigation regarding technology law, data security, compliance with law enforcement and intellectual property strategy.

Nikhil Naren

Nikhil is an Assistant Professor at the Jindal Global Law School and Of Counsel at Scriboard, New Delhi. His teaching and research focus on the intersection of law, technology, and society. Nikhil regularly contributes to renowned national dailies and scholarly platforms. Various educational institutions and organisations invite him to take sessions or teach various aspects around the intersection of law and technology. He has advised leading Social Networking, e-Commerce, Public Sector Undertakings, Start-Ups, and Fortune 500 companies on handling disputes and maintaining compliances pertaining to the Information Technology Act, 2000 and the Rules made thereunder, Intellectual Property, Contractual Disputes, Brand Management, Privacy, and Emerging Technologies. Nikhil is one of the youngest awardees of the prestigious and highly coveted British Chevening Scholarship from India.

AI & LAW

Even though used so frequently in our daily lives, AI is a difficult one to decode for the layman. The authors do a commendable job of covering the challenges around AI from the perspective of legal adoption.

AMISH TRIPATHI,
BESTSELLING AUTHOR AND FORMER INDIAN DIPLOMAT

Accessible, engaging, and relevant. The second edition of this book continues the journey as understood and apply the evolving regulation of AI – now including perspectives on the EU AI Act requirements, as well as practical legal considerations for the application of 'artificial intelligence in fintech and healthcare'.

ROBERT GROSSENER, MANAGING DIRECTOR
(PRIVACY AND DATA COMPLIANCE), ALVAREZ AND MARSAL, LONDON

This book is an excellent primer on the key legal issues which AI will raise. The authors have achieved an impressive balance of depth and breadth. They cover a worldwide geographical span, and an equally impressive range of topics – from intellectual property issues to virtual classrooms – providing both analysis and solutions. International readers are likely to find the sections on Indian law and practice to be particularly informative. The fact that the book is in its second edition already is a testament to its success, and its authors are to be congratulated on their fine achievement.

JACOB TURNER, BARRISTER, FOUNTAIN COURT CHAMBERS,
LONDON, AND AUTHOR OF 'ROBOT RULES'

Many have argued that artificial intelligence (AI) is one of the most consequential technologies of our time. Yet AI is not new, nor are many challenges it brings to light. This book is a vital tool for those seeking to demystify these challenges. Covering issues from intellectual property rights to privacy and competition, it offers a perspective that encourages reflection on whether AI represents a continuation or a revolution in tech policy.

CARL GAHNBERG, Ph.D. INTERNATIONAL RELATIONS (IHEID), GENEVA

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Artificial Intelligence
and Law

Rodney D. Ryder
Nikhil Naren

Second Edition

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Rodney D. Ryder | Nikhil Naren

Second Edition

Artificial Intelligence and Law

Challenges Demystified

Foreword by :

Col. Binej Koshiy, Ex-Director (Technology), UIDAI

Prologue by :

Dr. I. Stephanie Boyce, Former President, Law Society of England and Wales

This work is a groundbreaking synthesis of law and artificial intelligence.
Shri K.J. Alphons, Former MP (Rajya Sabha)
I have greatly benefited from reading this book.
Shri Amitabh Kant, India's G20 Sherpa

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Artificial Intelligence (AI) is at the forefront of today's fast-paced technological landscape, driving unprecedented changes across all sectors. However, these advancements come with significant legal and ethical challenges. In this updated second edition of 'Artificial Intelligence and Law: Challenges Demystified,' we further explore the intricate relationship between AI and law and the various issues that arise from it.

Building on the foundational insights of the first edition, this expanded volume covers the latest developments in AI technology. It addresses new regulatory measures, advancements in machine learning, and the growing impact of AI on privacy, security, digital commerce, and ethical standards. Through real-world applications and case studies, this book is a foundational guide for legal practitioners, policymakers, technologists, and scholars navigating the complex terrain of AI and law.

This edition equips readers with the knowledge and tools to foster responsible AI innovation and ensure that legal systems remain robust and adaptive in rapid technological change. Join us in exploring the future of AI and its profound implications for the law.

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DEDICATION

For Rebecca, Mark and Gunjan

—Rodney D. Ryder

***For a Viksit Bharat and the generation navigating through AI-
may you blend wisdom with innovation to create a sustainable future***

—Nikhil Naren

FOREWORD TO THE SECOND EDITION

This book isn't just about technology – it's about the human element. This book shines by recognising AI's profound impact on our decision-making, our perceptions of justice, and even our understanding of bias within legal systems. Whether you are a legal professional, a technology enthusiast, or simply a concerned citizen, this book offers essential understanding. The Authors, deftly navigate the often-bewildering terrain of AI, explaining core concepts in plain language without sacrificing nuance.

For anyone seeking to grasp the far-reaching implications of AI on law and society, "Artificial Intelligence and Law: Challenges Demystified" is an indispensable guide. It strikes a masterful balance – informative, engaging, and thought-provoking. The legal fraternity cannot just stay away from the storm, as the present advent of AI is only a ripple in the teacup. Every technology and business leader must use AI as a tool. A Law Professional will supervise for the first time, and machines will perform for the users through Generation and even Prediction. This can be seen as an enabler so that we professionals can focus on the very essence of our work. This new creative AI revolution comes with a plethora of goodies, thus equipping us, the users, so that each of us can have a place for ourselves in this age of advanced technologies. 'AI' is the new jargon that is sweeping the world, and the book will leave you better informed and empowered to participate in the vital conversations about shaping our legal system for the AI-driven future.

What sets this book apart is its focus on solutions and a positive vision for the future. Crucially, the book doesn't just identify challenges; it extrapolates thoughtfully with potential solutions. Some chapters are dedicated to bias and accountability, the future of legal jobs, and the urgent need for updated regulatory frameworks with a practical roadmap for navigating the complexities ahead. The Author's endeavour to highlight how AI can augment human judgement, streamline processes, and potentially uncover hidden biases to enable fairer justice is remarkable. AI, if used thoughtfully, will address issues like transparency, accountability, and expeditious deliverance of justice through the positive enablers that the envisaged AI-driven legal system will genuinely serve its users and the human at large.

Most importantly, the book left me feeling empowered, not fearful. It provides honest insight and an ultimate hope-inspiring guide. I highly recommend this book to anyone interested in the intersection of technology and justice.

COLONEL BINOJ KOSHY

Indian Army;

Ex-Director (Technology), UIDAI (Aadhaar)

FOREWORD TO THE FIRST EDITION

The world is not only of animals anymore but is shared with artificial intelligence, which has, over time, made space for itself and has a rather mandatory inclusion in the lives of people and their daily to-do in the present day. With its frequent use, law must necessarily revolve around it. This first book on Artificial Intelligence and Law by Indian Authors Shri Rodney D. Ryder and Nikhil Naren is a book that is setting history and making the Indian authors proud.

Artificial intelligence is treated as a natural person and the books sets off with the understanding of the same. The book introduces the concept of artificial intelligence and lays a bare understanding for its readers coming from all walks of life. The title sufficiently justifies the work of the authors who have taken into consideration a number of challenges that one can face in the use of artificial intelligence and have, in fact, demystified it for the readers to make the concept easily comprehensible.

It begins with understanding the fundamental concepts of AI and leads on to discussing the regulatory mechanism and the potholes it faces in this regulation. The Book does not limit itself to dealing with the regulatory mechanism of India but also covers international jurisdictions for a better understanding. The book treats three individual arenas that artificial intelligence is closely related to and discusses them in isolation from the others – namely, Intellectual Property Rights, Privacy, and Digital Marketplaces. Apart from noting the legal side, the authors have sufficiently considered the sharp presence of artificial intelligence in copyright, trademarks, and patents. The Authors have also discussed the concept of legal personhood here. It regards to privacy, it is a settled matter of law now that privacy is a fundamental right that crosses with artificial intelligence – dedicating a chapter to AI and Privacy including cross-border challenges behind the development of such technologies and algorithms, the Authors have successfully covered the spectrum of issues revolving around AI.

One of the most unique features of the book is its inclusivity. Encapsulating the interface of AI with digital marketplace, the book has been opened to a wide range of audiences not restricted to legal professionals and students. It discusses the relevant market, the effect on competition, the international jurisdictions, challenges and potholes, and the ways to move ahead in a place where the sue of AI is promoting a monopolistic market.

The USP of the book is that not only does it discuss the challenges but also proposes probable solutions. It does not stick to what has been or what is but enlarges its approach to what can be. The authors' ability to observe the futuristic approach of the book is commendable. The authors have successfully managed to engage the judiciary in this context.

I highly recommend this book. It is a one-stop for new-learners of any field who intend to gain first-hand knowledge of artificial intelligence.

Justice A.K. Sikri

Former Judge, Supreme Court of India
Presently, International Judge, SICC Singapore

PROLOGUE TO THE SECOND EDITION

I had the pleasure of meeting Nikhil Naren in late 2022 when he presented a copy of the first edition of this book. I was about to leave office as President of the Law Society of England and Wales, having completed my historical term during one of the most tumultuous periods in British history. Armed with the gift of this new book and the ever-evolving world of AI and the technological revolution, it was a fitting start to my reading repertoire. I am pleased to welcome the second edition, providing even more insight into the advancement of AI since the last edition.

In May 2023, I was invited to address a dinner of regulatory and professional disciplinary lawyers at the Guildhall London, famed for being the home of the City of London Corporation and the centre of government in the City of London. The impressive interiors of the Grade I-listed landmark provided the perfect setting for me to address the inequalities of AI. What struck me the most was the number of people who had not sought to address, let alone discuss, how the impact of AI might disproportionately affect some over others.

We read almost daily about the potential of AI, from its influence and impact on society and how businesses operate to the power of generative AI to transform the legal industry by automating and enhancing various aspects of legal work, such as contract analysis, due diligence, litigation processes, and regulatory compliance. Indeed, it has not gone unnoticed, with some law firms leading the way by developing and leveraging AI as part of their daily operating model to assist with research, disclosure, and assessing risk exposure.

There is no doubt that technology is redefining the legal field and society. As practitioners, we have to equip and prepare ourselves for the changing landscape and the way we work and keep pace with technology; otherwise, we will get left behind and even become redundant due to our failure to keep pace with this pervasive technology we call AI. This book provides an easy tool to access, boost our knowledge, and demystify the world of AI and its global impact. It provides an easy and insightful read into the world of artificial intelligence. In the absence of a global approach to regulating AI, it provides us with an active voice and reference point as to the many challenges and opportunities AI presents us with.

Dr. I. Stephanie Boyce

Former President of the Law Society of England and Wales

PROLOGUE TO THE FIRST EDITION

Demystification undoubtedly is one of the most important contributions of any scholarship. This highly interesting book serves the above purpose successfully and adequately justifies its title, as it demystifies the world of AI for a common reader. It leads reader into an enigmatic world and allows him or her to be at home there. Written in an extremely lucid manner it takes reader to a highly interesting journey into the world of AI, the concept and a contemporary reality. Explanations on some fundamental terms and concepts will offer a good starting point for informed and rational debates on emerging challenges related to AI, with greater chances for proper solutions to deal with same. The book performs an extremely difficult task of explaining a highly technical world of AI in such a simple manner. Dotted with examples the book has converted what could be an otherwise dry subject matter into a highly interesting read. Possibility to learn difficult concepts 'cognitive computing', 'neural network', 'artificial neural network' 'robot scientists' creates a desire to read further and know more.

It is almost trite to say that no innovation, especially technological innovation, ever comes alone. It comes accompanied by threats, potential of turning into a Frankenstein monster. Ensuring deployment of technological innovations into growth of humanity is possible only when it is understood properly with its strength and weakness. This book serves that purpose as it makes the reader aware that AI is an unavoidable reality and at the same time cautions on what aspects of AI have potential of misuse. Authors are candid to mention, 'no matter how much of a good intent one puts behind using these advancements for the good, it might be used and misconstrued in some way to be used for bad'. The above, for the authors, is not a reason to shun innovations.

A near perfect example of interdisciplinary scholarship the book would be a great help for non-technical persons, the lawyers, judges, and policy makers. As claimed by the authors it avoids jargon, but at the same time ensures that concepts are explained in proper depth despite simplification.

The book gives the reader a clear message- AI is the future, it is here to stay howsoever it may be apprehended or disliked. The authors mince no words as they declare, 'AI is now regarded to be the catapult of the 21st century Industrial Revolution [Industrial Revolution 4.0]'. However, on a very positive note, it highlights meaningful impact of AI on our lives. It in its own way aims to prepare the world to understand and find ways to deal with its challenges rather closing

our eyes to them or looking at them as threats. The book carries an interesting discussion on inherent biases in the AI system and how even AI can reflect mind-set prevalent in society at a given point of time. It admits that ‘reports of AI biases aren’t new, and various technical institutes/corporations have accepted that their AI systems display bias’. There are some intriguing examples of system being biased in favour of men in selection processes or the criminal system being biased against blacks in the U.S.

With its comprehensive coverage of legal and policy-oriented efforts at the global level, it will also prove to be an important starting point for approaches in different jurisdictions and philosophical underpinnings of legal efforts. An extensive coverage of Indian Data Protection Bill is a useful guide to understand developments in India while placing them in global context.

This book is a useful resource for any legal professional and the student who wants to take a plunge in the world of AI with clarity about basic concepts and legal and ethical issues. Its treatment of issues relating to intellectual property, competition law, legal personhood for AI and Robots aptly demonstrates interface between and AI and Law and would encourage a reader to know more. This book also brings the perfect balance between and among diverse disciplines together.

Prof. (Dr.) V. Vijayakumar

Vice-Chancellor, National Law Institute University, Bhopal

Member, Executive Committee, former Vice President and President,
Consortium of National Law Universities

[Former Registrar, Professor & UNHCR Chair on Refugee Law, NLSIU, Bangalore &
Former Vice Chancellor of TNDALU, Chennai, Tamil Nadu]

TESTIMONIALS TO THE SECOND EDITION

“Ryder and Naren’s masterful exploration of Artificial Intelligence and Law navigates the intricate terrain of legal innovation with precision and clarity. Their insightful analysis illuminates the transformative potential of AI, offering an indispensable roadmap for legal professionals and tech enthusiasts alike. This work is a ground-breaking synthesis of law and artificial intelligence.”

– ***K.J. Alphons, Former Member of Parliament (Rajya Sabha);
Former Minister of State (Electronics And Information Technology)***

This book excellently simplifies the world of AI in law, making it an excellent read for understanding the future of technology and its legal considerations. I have greatly benefitted from reading this book.

– ***Amitabh Kant, India’s G20 Sherpa, Former CEO, NITI Aayog***

Accessible, engaging, and relevant. The second edition of this book continues the journey to understand and apply the evolving regulation of AI – now including perspectives on the EU AI Act requirements, as well as practical legal considerations for the application of artificial intelligence in fintech and healthcare.

– ***Robert Grosvenor, Managing Director (Privacy and Data Compliance),
Alvarez and Marsal, London***

This book is an excellent primer on the key legal issues which AI will raise. The authors have achieved an impressive balance of depth and brevity. They cover a worldwide geographical span, and an equally impressive range of topics – from intellectual property issues to virtual classrooms – providing both analysis and solutions. International readers are likely to find the sections on Indian law and practice to be particularly informative. The fact that the book is in its second edition already is a testament to its success, and its authors are to be congratulated on their fine achievement.”

– ***Jacob Turner, Barrister, Fountain Court Chambers, London,
and Author of ‘Robot Rules’***

Many have argued that artificial intelligence (AI) is one of the most consequential technologies of our time. Yet AI is not new, nor are many challenges it brings to light. This book is a vital tool for those seeking to demystify these challenges. Covering issues from intellectual property rights to privacy and competition, it offers a perspective that encourages reflection on whether AI represents a continuation or a revolution in tech policy.

– ***Carl Gahnberg, Director, Policy Development and
Research, Internet Society***

TESTIMONIALS TO THE FIRST EDITION

Even though used so frequently in our daily lives, AI is a difficult one to decode for the layman. The authors do a commendable job of covering the challenges around AI from the perspective of legal adoption.

– ***Amish Tripathi, Bestselling Author and Former Indian Diplomat***

Rodney and Nikhil's Artificial Intelligence and Law: Challenges Demystified is an insightful and easy read, dispelling the notion that AI is only for the techie. The balanced approach of realizing the criticality and future of AI in education, governance, fintech and health against concerns on privacy, trust and biases make this a compelling read. Regulations to tackle transparency, responsible use, risk reduction are dealt with effectively by the authors. AI is part of our lives, and the book lessens the fear brought on by far-fetched science fiction films

– ***Supriya Chawla, Head-Chevening Scholarships India,
British High Commission, New Delhi***

This book is a timely and crucial reminder of AI's potential to be used to address biases and inequity in health. The authors also take a close look at the critical issues of consent, privacy, and data and patient protection, and outlines some useful suggestions on the way forward. This book is an excellent step towards starting a much-needed conversation on integrating AI in health ethically and conscientiously to create a healthy society.

– ***Himangi Bhardwaj, Senior Health and Policy Advisor,
British High Commission, New Delhi***

Artificial intelligence is growing in popularity. As machines emulate human intelligence and behaviours, we need an authoritative voice like the authors to help us understand the implications of human laws on sentient beings.

– ***Pooja Kothari, Director, Star Records Management
Private Limited, India***

This book is special for students, professionals as well as the public since it covers the types of issues not found in other materials available on the same subject. Highly recommended!

– ***Prof. Abhishek Mishra, Dean (Admissions and Recruitment),
BML Munjal University***

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This text marks the start of an exciting ongoing journey. We write to put on record our grateful thanks!

Our special thanks to Ms Aditi Singh, final year student of law, DSNLU, Vishakhapatnam for assisting us with the research. Your attention to detail and tireless efforts are commendable.

To our friends and families, thank you for your unwavering support and understanding during the long hours we spent on this work. Your patience and encouragement have been a constant source of motivation.

We owe gratitude to Prof. Krishna Deo Singh Chauhan for his insightful feedback and numerous discussions that have greatly enriched the book. Our special thanks and gratitude to O.P. Jindal Global University for its commitment to fostering innovative discussions and interdisciplinary approaches that significantly influence our work. We are deeply appreciative of and acknowledge the unwavering support of Shri Suneel Galgotia, Dr. Dhruv Galgotia, and Ms Aradhana Galgotia for their support and enthusiasm, which have been incredibly motivating.

We are profoundly grateful to the numerous universities and institutions that have provided us with the platforms to share our knowledge and insights on artificial intelligence and law. Your invitations to deliver lectures and conduct sessions have been invaluable in shaping the dialogue and understanding of this complex field. To all the students, faculty, and staff at these institutions, thank you for your curiosity, insightful questions, and enthusiastic participation.

Our special thanks to all our colleagues and clients at Scriboard with whom we have explored new technology and artificial intelligence. The road is comparatively new and barely treaded, but your wisdom and insight are unparalleled. For our esteemed clients, thank you for thinking of Scriboard as your first port of call.

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Special thanks to the legal and AI communities, whose ongoing dialogue and innovations inspired many of the discussions within these pages. Your work continues to push the boundaries of what is possible and necessary in this field.

Finally, to our readers, thank you for your interest in this book. We hope it provides valuable insights and contributes to the ongoing conversation about the intersection of artificial intelligence and law. We humbly request the future readers [and users] of this book to share your feedback, constructive suggestions, views, and criticisms, if any, through any means of communication.

As this book is now in its second edition, we thank everyone for their contributions, support, and belief in this book.

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PREFACE TO THE SECOND EDITION

Whatever we write on this day, we know, will not last more than a few years, or will it? The idea that the future which we imagined [and, to an extent, dreaded] is upon us and is real is a fact. As lawyers and someone thinking about risk, we need to ask ourselves that as artificial intelligence [or ‘AI’] continues to advance at an unparalleled pace, what are the opportunities and challenges for the individual and business? Managing legal risks, anticipating challenges, and ensuring compliance requires deep thought and an understanding of the evolving technical and technological landscape and the complexities of the law and the legal process. In this preface to the second edition, it is essential for us to mark and highlight the primary points to be considered by individuals, business legal counsels, and managers in the space of artificial intelligence. We must, collectively and individually, focus on the big picture. We need to ask the right questions in the right context and have a vision that places artificial intelligence at the centre of the conversation.

We need to ask ourselves a basic yet fundamental question. How does artificial intelligence impact our industry in a positive way? We also need to ask ourselves, what is the impact of artificial intelligence, and how can we harness it for a better, free, unbiased, transparent, and more equal world? When we started as technology lawyers, we were convinced that technology would transform the practice of law, that it would transform the legal delivery mechanism, and, if managed properly, would be the greatest enabler that humankind has ever seen.

We are well aware that we fear how rapidly the existing technology, including Generative AI, is advancing – as well as we should be. After all, it is the stuff of science fiction sentient robots, malicious computers, wicked spiteful code taking over the world, enslaving the human race. Being aware of the risk is important. We have always been aware of the threat that we as human beings face to life on the planet but have been fearful of what would happen if our very own creations went beyond our control. However, despite our fears, we must look towards building a planet that can protect and nurture itself. A planet that is equal. Artificial Intelligence can help us create an unbiased transparent apparatus for the delivery of welfare or for citizens to access justice. It is time that we spoke of the ‘equal algorithm’. It is important, therefore, that we focus correctly on the issues that can lead to greater empowerment of the human race in its entirety. It would be to our disadvantage, however, if we disengage now and cease further development of technology that can drastically change and improve our lives for the better.

Algorithmic bias indeed poses a significant challenge in artificial intelligence systems. Whether we like it or not, bias can unintentionally perpetuate. And if we may say so, institutionalised discrimination can proliferate as well. Bias has [and has always had] far-reaching implications in our lives. However, we must remember that bias, unfairness, inequality, and other such stigmas have long existed before technology could quantify, evaluate, and expose them. Risks for business, as well as risks for corporate counsels, should be mapped, evaluated, and, to an extent, embraced. We should be aware of the risks associated with algorithmic bias and strive towards developing fair and unbiased artificial intelligence systems.

As we delve deeper into the second edition of this document on AI and Legal Risk, it is imperative to expand our understanding of how artificial intelligence is reshaping the legal landscape and its broader societal and economic implications. Over the last few years, AI has transitioned from an abstract concept used and discussed by niche sections of society to an integral part of our daily lives. From smart assistants in our homes to sophisticated algorithms driving complex decisions in industries, AI's influence is undeniable. We believe this presents both unprecedented opportunities and significant challenges for legal professionals.

Primarily, AI's ability to process vast amounts of data at incredible speeds has revolutionised legal research and case management – something we have personally witnessed during the course of our work. Traditional methods of sifting through mountains of documents are now, to the relief of many, being replaced by AI-powered tools that can identify relevant information in a fraction of the time. This enhances efficiency and allows legal professionals to focus on other, perhaps 'higher-value tasks', such as strategy development and client interaction. However, this shift also justifiably raises concerns about data privacy and the ethical use of information. As custodians of sensitive data, lawyers must tackle these challenges with a keen understanding of both the legal and technical nuances involved. Merely using AI tools without understanding how they fundamentally function may not be sufficient in the coming years, if one wishes to harness such tools in day-to-day legal practice.

Moreover, AI's role in predictive analytics is becoming increasingly significant. Legal teams are leveraging AI to predict case outcomes, assess risks, and even recommend settlement strategies. While these tools can provide valuable insights, they are not infallible. As discussed earlier, the reliance on historical data to train AI models can inadvertently perpetuate existing biases, leading to skewed predictions. It is, therefore, imperative for legal professionals to critically evaluate the outputs of AI systems and ensure that they are used merely as supplementary tools rather than definitive arbiters of decisions.

In business, AI drives innovation across various sectors, from finance to healthcare. Companies harness AI to optimise operations, enhance customer experiences, and develop new products and services. However, the integration of AI also introduces

new legal and regulatory challenges. Compliance with evolving regulations, such as data protection laws and AI-specific guidelines, will require continuous vigilance and adaptability. Businesses must establish robust governance frameworks to oversee AI implementation and ensure its ethical [and legally compliant] usage.

One of the most profound implications of AI is its potential to democratise access to justice. By automating routine legal tasks and providing affordable legal assistance, AI can help bridge the justice gap, particularly for underserved populations. Initiatives such as AI-powered legal chatbots and online dispute resolution platforms are already making legal services more accessible. In some jurisdictions, judiciaries harness AI tools to improve and enhance day-to-day functioning. Nevertheless, these technologies must be deployed by stringent quality controls to ensure that they deliver accurate and reliable advice.

Ethical considerations are paramount when discussing AI's impact on society. The development and deployment of AI must be guided by principles that prioritise fairness, transparency, and accountability – similar principles to those enshrined in Data Protection Laws such as the European Union's *General Data Protection Regulation*. This will require collaborative efforts from policymakers, technologists, and legal professionals to create a regulatory environment that promotes innovation while protecting individual rights with equal fervour. Transparency in AI decision-making processes will be essential to build trust and ensure that AI systems are subject to appropriate oversight.

Furthermore, the global nature of AI development will require international cooperation. As AI technologies transcend national borders, countries must look towards harmonising regulatory standards while catering to individual needs and circumstances. International bodies and coalitions must work together to establish frameworks that address cross-border data flows, intellectual property rights, and the ethical use of AI.

The second edition of this work, therefore, aims to provide an overview of these multifaceted issues. Through such discussions, we can glean valuable lessons that will inform future developments.

As Co-Authors, this book is written in the first-person plural. However, when we speak of 'we', we may be referring, variously, to our joint views or experience, or either of one of us.

Happy Reading!

Rodney D. Ryder
Nikhil Naren

PREFACE TO THE FIRST EDITION

As we celebrate *Azadi ka Amritmahotsav* marking 75 years of India's independence this year, we should be proud of India's contribution to the technological revolution that is being witnessed by the world today and that has made India a resilient tech-hub.

New age technologies are intriguing. While working on our previous book- *Internet Law: Regulating Cyberspace and Emerging Technologies*, both Rodney and I felt the desire to come up with a book around Artificial Intelligence (AI) and law. This was further fueled when I underwent a certification course on *Introduction to AI* by IBM on Coursera. We began working on the book around July'20, but the pandemic kept affecting the work. So much so that it brought us to a halt during the second wave in April'21. We intended [and were determined] to come up with a book that builds the understanding of AI and its intersection with law. Our target was to cater to laypersons and businesses alike. In the mid-way I was awarded with the *Chevening* Scholarship to pursue my Master of Laws (LL.M.) from the United Kingdom. With Rodney being in India, moving to the UK proved to be a roadblock for the book, as pursuing post-graduate studies demands wealth of time. After finishing 50 % of my LL.M. in the first semester, we came back to finishing this book. But on the other side, the fabulous Professors and the lectures at Queen Mary have only helped in making this book even better.

Are the artificially intelligent systems around us intelligent? Or are they simply producing intelligent results without intelligence? Is it time that we take a break, and introspect about how are lives and day to day chores are being driven by AI [and so our increased dependency]? *Chris Reed*, professor of e-commerce law at Queen Mary has rightly stated that- *an important purpose of law is to create order in human relations, so that individuals can interact with each other on a rational and reasonably certain basis*. Therefore, the policymakers and legislatures today need to introspect that whether this modern age of technological advancements have made the governance of such systems chaotic?

Can AI replace humans in various professions, or would it replace the ones who do not use it? *Marc Lauritsen* in one of his papers on *machine-assisted legal work* referred to AI-savvy lawyers to be as rare as vegan butchers. Therefore, this analogy, in our humble opinion, makes this book a rare one too! (*Wink*)

The text aims to bring forth such discussions by simultaneously analysing the developments in the field of artificial intelligence *albeit* in a lucid manner and for the understanding of layperson; students and practitioners of law; and developers of such systems.

The text starts by introducing the important history and core concepts behind the working of AI, and the significant developments over the period. We also introduce the challenges that we are currently faced with [and the upcoming!] around the development and regulation of these intelligent systems.

We then move forward and discuss the methodologies for an effective regulation of AI systems, *vis-à-vis* compare the approaches undertaken by different jurisdictions. This also helps us to understand the ascertainment of rights in different types of intellectual properties that are created using AI. Before that, we also discuss the important concept of personhood, which remains fundamental across jurisdictions in the context of creation of AI-assisted intellectual properties.

It is time to think about how AI gets its nutrition and power for working effectively, and whether it is self-sustainable? We promise you will enjoy reading this section as much as we enjoyed writing it for you. With day-to-day examples of how our data are being used to 'strengthen' the desired output of these intelligent systems, to the way our endless interactions are empowering their autonomous behavior and decision making. Do the users' ever get to exercise their control in the middle? We will understand the way such systems interact with the privacy rights and the possible steps to keep in mind for building a symbiotic relationship.

The use of AI has become commonplace, but the core issues of regulation remain out of grasp. The text examines how the growth of AI technology, and the digital marketplaces are disrupting competition, and calls for the reformulation of the norms of regulation around this area. We discuss if it is the time to amend our approach of looking at monopolisation of markets from the bird's eye-view of brick-and-mortar shops and consider the ways in which algorithms [coupled with ownership of huge datasets] have penetrated and forced to change our perspective of looking at the anti-trust laws.

The text while discussing the interaction of AI with various facets of our day-to-day lives does not miss out on looking at the future. The text dives into looking at different sectors and their interaction with AI. We are sure that AI is a disruptive innovation that holds the prowess of changing our future and the way we do simplest of things! Hence, the motivation of coming up with this book was to remind us in the present age of Industrial Revolution 4.0, that we must be thoughtful of the ways in which emerging technologies are interacting [and changing] our daily behaviours. The book should act as a reminder for us to move ahead with caution, and by balancing innovation and regulation, especially when our daily habits, our professions, our ways of commuting, and almost every

common [or not so common] actions are getting increasingly dependent on the success of these algorithms.

We shall consider ourselves successful if upon finishing the text, the reader is better placed in understanding the fundamentals of AI, are clear with the core-concepts behind functioning of AI, and are confident about knowing different facets of AI and its interaction with the law. Most importantly, we would be elated if this book becomes your basic guide and deepens your interest in pursuing further information on the topic. We strongly encourage you to go through the reading list mentioned in this book and keep your thinking caps on!

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Mr. Naren received a record Pre-Placement Offer in December 2018 from Scriboard [Advocates and Legal Consultants], and as a trainee and later on as a lawyer, he received an opportunity to advise leading Social Networking, e-Commerce, Public Sector Undertakings, Start-Ups, and Fortune 500 companies on handling disputes and maintaining compliances pertaining to the Information Technology Act, 2000 and the Rules made thereunder, Intellectual Property, Contractual Disputes, Brand Management, Data Protection and Privacy, and Emerging Technologies.

He co-authored the book – *Internet Law: Regulating Cyberspace and Emerging Technologies* with Rodney D. Ryder during his final year at the law school, later published by Bloomsbury Professional India in March 2020. The book carries the Foreword by Hon'ble Justice (Retd.) Dipak Misra, Former Chief Justice of India.

After completing his undergraduate degree in Bachelor of Arts and Bachelor of Laws [B.A.LL.B.] from Symbiosis Law School, NOIDA, in 2020, and after months of trepidation, Mr. Naren became one of the youngest awardees of the prestigious and highly coveted *British Chevening Scholarship* for pursuing his Master's from the United Kingdom at the age of twenty-four from India. In furtherance,

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Nikhil was also one amongst the seven Chevening scholars to have been awarded the 'Gold Award' by the Chevening Secretariat and the Foreign, Commonwealth and Development Office, for putting in 100+ hours of volunteering work in the United Kingdom out of a total of 1600 scholars from close to 140 countries in the 2021-22 cohort.

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ABOUT SCRIBOARD

[ADVOCATES AND LEGAL CONSULTANTS]

Scriboard [Advocates and Legal Consultants], New Delhi, is a full-service commercial law firm with cutting-edge specialisation in Information Technology and Intellectual Property and related services. The firm was founded in the year 2010 by Rodney D. Ryder, a leading technology, data privacy, and intellectual property lawyer.

Over the past decade, Scriboard has been listed consistently as a leading law firm in intellectual property, technology, communications and media law by Asia Law, WhosWhoLegal, Chambers, Managing Intellectual Property, Asia Legal Business, Asia Legal 500, amongst several international publications.

The firm is legal counsel to the Ministry of Communications and Information Technology, Government of India and to the National Internet Exchange of India [NIXI], which manages the .in [Indian Country Code Top Level Domain Extensions]. Scriboard is also counsel to leading technology companies like Facebook, Hike Messenger, and Amazon. At the national and international level, the firm has represented leading companies and individuals, Indian Oil, Godrej Consumer Products Limited, ITC Limited, Havells India Limited, FanCraze, and the former Indian cricket captain Shri Mahendra Singh Dhoni.

The firm also advises the Central Bureau of Investigation [CBI] on Internet Security and Cyber Crime. The firm services clients in Nepal, Bhutan, Bangladesh, Pakistan and Sri Lanka. The firm acts as a legal advisor to the Computer Association of Nepal [CAN], the Nepal Supreme Court and the Nepal Telecom Authority [NTA]. In addition, the firm has assisted the government in Nepal in drafting and preparing the Electronic Commerce Law.

AI TIMELINE

1642: First mechanical calculating machine built by French mathematician and inventor Blaise Pascal.

1832: First design for a programmable machine, by Charles Babbage and Ada Lovelace.

1943: Foundations of neural networks established by Warren McCulloch and Walter Pitts drawing parallels between the brain and computing machines.

1950: Marvin Minsky introduced the first ever neural computer; and Alan Turing introduces a test – the Turing test of way of testing a machine's intelligence.

1952: Problem-solving development was designed to emulate the problem-solving approach of humans with Arthur Samuel initiating the first self-learning project for a machine.

1954: IBM tests automatic machine translations.

1955: The term 'Artificial intelligence' was coined during a conference devoted to the topic.

1956: Herbert Simon and Allen Newell developed one of the most primitive reasoning project of logic theorists.

1963: John McCarthy initiates the Artificial Intelligence Lab at Stanford.

1965: ELIZA, a natural language program is created. ELIZA handles dialogue on any topic; similar in concept to today's chatbots.

1966 to 1973: AI winter – lack of outputs that impacted the growth of artificial intelligence. The complexity of computational algorithms restricts the advancement of artificial intelligence.

1970s: The wave of computer systems developed. Gradually with time, they become more affordable and can store more data. The best part of the history of artificial intelligence is that it achieved NLP (Natural Language Processing).

1980s: Edward Feigenbaum creates expert systems which emulate decisions of human experts.

1997: Computer program Deep Blue beats world chess champion Garry Kasparov.

2007: DARPA launches the Urban Challenge for autonomous cars to obey traffic rules and operate in an urban environment.

2009: Google builds the first self-driving car to handle urban conditions.

2011: IBM's Watson defeats champions of US game show Jeopardy.

2011-14: Personal assistants like Siri, Google Now, Cortana use speech recognition to answer questions and perform simple tasks.

2014: Ian Good fellow comes up with Generative Adversarial Networks (GAN).

2016: AlphaGo beats professional Go player Lee Sedol 4-1.

2018: Announcement of Google Duplex, a service to allow an AI assistant to book appointments over the phone.

2018: OpenAI releases GPT 1, the first Generative Pre-trained Transformer.

2019: DeepMind's AlphaStar reaches Grandmaster level at StarCraft II, outperforming 99.8 percent of human players.

2020: Microsoft introduced its Turing Natural Language Generation (T-NLG), which was then the "largest language model ever published at 17 billion parameters."

2020: The record speed of vaccine development was partly thanks to AI models that helped researchers analyse vast amounts of data about coronavirus.

2022: Generative AI becomes mainstream. GPT 3.5 launched and surpassed one million users in a week.

2023: Google launches its Generative AI- Bard [now called Gemini].

2023: Introduction of Multimodal AI that goes beyond traditional single-mode data processing to encompass multiple input types, such as text, images, and sound.

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LIST OF ABBREVIATIONS

S. No.	Abbreviation	Full-Form
1.	AI	Artificial Intelligence
2.	ANN	Artificial Neural Networks
3.	API	Application Programming Interface
4.	CAPTCHA	Completely Automated Public Turing test to tell Computers and Humans Apart
5.	CCI	Competition Commission of India
6.	CDPA	Copyright, Designs and Patents Act (United Kingdom)
7.	CGW	Computer Generated Work
8.	CJEU	Court of Justice of the European Union
9.	CMA	Competitions and Markets Authority (United Kingdom)
10.	CMAPS	Crime Mapping, Analytics and Predictive System
11.	COMPAS	Correctional Offender Management Profiling for Alternative Sanctions
12.	CVIT	Captivating Virtual Instruction for Training
13.	DABUS	Device for the Autonomous Bootstrapping of Unified Sentence
14.	DARPA	Defence Advanced Research Projects Agency
15.	EP	European Parliament
16.	EU	European Union
17.	FTC	Federal Trade Commission
18.	GDPR	General Data Protection Regulation
19.	GP	Genetic Programming
20.	ICTAI	International Centres for Transformational AI

S. No.	Abbreviation	Full-Form
21.	IPONZ	Intellectual Property Office of New Zealand
22.	NITI	National Institution for Transforming India
23.	NJDG	National Judicial Data Grid (India)
24.	NODE	National Open Digital Ecosystems
25.	R&D	Research and Development
26.	SCBMS	Smart Classroom Behaviour Management System
27.	SUPACE	Supreme Court Portal for Assistance in Courts Efficiency (India)
28.	TDM	Text and Data Mining
29.	TFEU	Treaty on the Functioning of the European Union
30.	UKIPO	United Kingdom’s Intellectual Property Office
31.	USPTO	United States Patents and Trademarks Office
32.	WIPO	World Intellectual Property Organisation