

**ARTIFICIAL INTELLIGENCE IN JUSTICE SYSTEM AND ITS
ETHICAL AND LEGAL IMPLICATIONS: A COMPARATIVE
ANALYSIS**

*A Dissertation submitted to The National University of Advanced Legal Studies,
Kochi, in partial fulfillment of the requirements for the award of Degree of Master
of Laws in Constitutional and Administrative Law*



**THE NATIONAL UNIVERSITY OF ADVANCED LEGAL
STUDIES**

Kalamassery, Kochi-683 503, Kerala, India

2023-2024

Submitted by:

Dhanya K S

(Register Number: LM0123006)

Under the Guidance and Supervision of

Dr. Nandita Narayan

June 2024

NUALS, Kochi

CERTIFICATE

This is to certify that Ms. DHANYA K S (Reg No: LM0123006) has submitted this Dissertation titled 'ARTIFICIAL INTELLIGENCE IN JUSTICE SYSTEM AND ITS ETHICAL AND LEGAL IMPLICATIONS: A COMPARATIVE ANALYSIS' in partial fulfillment of the requirement of the award of Degree of Master of Laws in Constitutional and Administrative Law to The National University of Advanced Legal Studies, Kochi, under my guidance and supervision. It is also affirmed that the Dissertation submitted by her is original, bonafide and genuine.

Date:

Dr. NANDITA NARAYAN

Assistant Professor, NUALS, Kochi

Place: Ernakulam

DECLARATION

I hereby declare that the Dissertation titled 'ARTIFICIAL INTELLIGENCE IN JUSTICE SYSTEM AND ITS ETHICAL AND LEGAL IMPLICATIONS: A COMPARATIVE ANALYSIS' researched and submitted by me to The National University of Advanced Legal Studies, Kochi, in partial fulfillment of the requirement for the award of Degree of Master of Laws in Constitutional and Administrative Law, under the guidance and supervision of Dr. Nandita Narayan is an original bonafide and legitimate work and it has been pursued for academic interest. This work or any type thereof has not been submitted by me or anyone else for the award of another degree from either this University or any other University.

DHANYA K S

Reg No: LM0123006

LL.M (Constitutional and Administrative Law)

NUALS, Kochi

Date:

Place: Ernakulam

ACKNOWLEDGEMENT

I take this opportunity to express my profound respect and deep gratitude to Dr. Nandita Narayan, my guide and supervisor, for the support, guidance and encouragement throughout my research work. She has been patient with me, helped me to maintain my belief in my research, and has given me cogent and meaningful suggestions, which helped me navigate the relevant issues.

I would also like to express my sincere gratitude to the Vice Chancellor, Hon'ble Justice (Retd.) Mr. S. Siri Jagan, for his constant support. I express my sincere thanks to Prof. Dr. Mini S, The Director of the Centre for Post Graduate Legal Studies, for her support and encouragement extended during the course.

I would further extend my deep gratitude to all the Professors of NUALS for their guidance and support. I would also like to thank all the library and technical staff for their assistance in carrying out this work. I express my appreciation and gratitude to my family, friends and classmates for their love and encouragement. Without their unwavering support, I could not have completed this work. My heartfelt love and gratitude go to my parents, who have always been my unwavering power and pillars of strength.

DHANYA K S

TABLE OF CONTENTS

SL NO:	TITLE	PAGE NO:
	LIST OF CASES	7
	LIST OF ABBREVIATIONS	8
I	INTRODUCTION	11-22
	1.1 INTRODUCTION	11
	1.2 RELEVANCE OF AI IN JUSTICE SYSTEM	14
	1.3 HISTORICAL OVERVIEW OF AI IN JUSTICE SYSTEM	15
	1.4 AI: KEY TERMS AND CONCEPTS USED IN THE DISSERTATION	17
	1.5 STATEMENT OF PROBLEM	19
	1.6 RESEARCH OBJECTIVES	19
	1.7 SCOPE OF THE STUDY	19
	1.8 HYPOTHESIS	20
	1.9 RESEARCH QUESTIONS	20
	1.10 RESEARCH METHODOLOGY	20
	1.11 LIMITATIONS OF THE STUDY	20
	1.12 CHAPTERISATION	21
II	ADOPTION OF AI IN JUSTICE SYSTEM	23-42
	2.1 INTRODUCTION	23
	2.2 THE INTERFACE BETWEEN AI AND LAW	23
	2.3 AI APPLICATIONS IN JUSTICE SYSTEM: IMPLICATIONS FOR STAKEHOLDERS	25
	2.4 AI AND JUDICIARY	25
	2.5 AI AND LAWYERS	27
	2.6 AI AND LITIGANTS	30
	2.7 AI AND LAW ENFORCEMENT AGENCIES	32
	2.8 AI APPLICATIONS IN THE CRIMINAL JUSTICE SYSTEM	33
	2.9 AI APPLICATIONS IN THE CIVIL JUSTICE SYSTEM	38
	2.10 CONCLUSION	41
III	ADOPTION OF AI IN JUSTICE SYSTEM: A COMPARATIVE ANALYSIS	43-76
	3.1 INTRODUCTION	43
	3.2 AI IN INDIAN JUSTICE SYSTEM	44
	3.3 AI IN US JUSTICE SYSTEM	51
	3.4 AI IN UK JUSTICE SYSTEM	57
	3.5 AI IN CHINESE JUSTICE SYSTEM	64
	3.6 AI IN BRAZILIAN SYSTEM	68
	3.7 COMPARATIVE ANALYSIS OF AI ADOPTION IN JUSTICE SYSTEM	71

	3.8 CONCLUSION	75
IV	ADOPTION OF AI IN JUSTICE SYSTEM: ETHICAL AND LEGAL IMPLICATIONS	77-99
	4.1 INTRODUCTION	77
	4.2 ETHICAL IMPLICATIONS	78
	4.3 LEGAL IMPLICATIONS	87
	4.4 CONCLUSION	98
V	REGULATORY FRAMEWORK FOR USE OF AI IN JUSTICE SYSTEM	100-125
	5.1 INTRODUCTION	100
	5.2 AI REGULATORY FRAMEWORK IN INDIA	101
	5.3 AI REGULATORY FRAMEWORK IN US	108
	5.4 AI REGULATORY FRAMEWORK IN UK	110
	5.5 AI REGULATORY FRAMEWORK IN CHINA	112
	5.6 AI REGULATORY FRAMEWORK IN BRAZIL	113
	5.7 THE EU AI REGULATORY FRAMEWORK	114
	5.8 UNESCO RECOMMENDATIONS ON ETHICS OF AI	118
	5.9 THE OECD PRINCIPLES OF AI	119
	5.10 THE 2023 AI SAFETY SUMMIT	120
	5.11 COMPARATIVE ANALYSIS OF AI REGULATORY FRAMEWORK	120
	5.12 CONCLUSION	123
VI	CONCLUSIONS AND SUGGESTIONS	126-132
	6.1 FINDINGS	127
	6.2 SUGGESTIONS	129
	BIBLIOGRAPHY	133-136

LIST OF CASES

1. Big Brother Watch and Others v. United Kingdom (Applications nos. 58170/13, 62322/14, and 24960/15)
2. Bonilla v. Iowa Board of Parole, 930 Northwestern Reporter, Second Series 751 (2019).
3. Christian Louboutin Sas & Anr. v. M/s The Shoe Boutique – Shutiq., 2023 LiveLaw (Del) 755.
4. Civil society groups v. The Netherlands (2020).
5. Ed Bridges v South Wales Police, Court of Appeal (Civil Division), United Kingdom, (2020).
6. Flores and Ors v. Stanford and Ors, 18 CV 2468 (VB).
7. Flores et al. v. Motorola Solutions Inc. et al, States District Court for the Northern District of Illinois, (2020).
8. Jaswinder Singh @ Jassi v. State of Punjab & Anr., 2023 LiveLaw (PH) 48.
9. Justice K.S. Puttaswamy (Retd.) & Anr. v. Union of India & Ors., AIR 2017 SC 4161.
10. Miller v. Alabama, 567 United States Reports 460 (2012).
11. Salomon v. A Salomon & Co Ltd, Appeal Cases 22 (1897).
12. State v. Loomis, 881 North Western Reporter 749 (2016).

LIST OF ABBREVIATIONS

ADR.....	Alternate Dispute Resolution
ADM.....	Algorithmic Decision Making
AGI.....	Artificial General Intelligence
AI.....	Artificial Intelligence
AIDP.....	Artificial Intelligence Development Plan
ALPR.....	Automated License Plate Recognition
ANI.....	Artificial Narrow Intelligence
ANPD.....	National Data Protection Authority
ATF.....	Bureau of Alcohol, Tobacco, Firearms and Explosives
BIPA.....	Biometric Information Privacy Act
CCTV.....	Closed Circuit Television
CCIPS.....	Computer Crime and Intellectual Property Section
CFAA.....	Computer Fraud and Abuse Act
CJI.....	Chief Justice of India
CNJ.....	National Council of Justice
COMPAS.....
.....	Correctional Offender Management Profiling for Alternative Sanctions
CRT.....	Civil Resolution Tribunal
DASH.....	Domestic Abuse, Stalking, and Harassment
DEA.....	Drug Enforcement Administration
DIA.....	Digital India Act
DL.....	Deep Learning
DMCA.....	Digital Millennium Copyright Act
DNA.....	Deoxyribo Nucleic Acid
DOJ.....	Department of Justice
ECHR.....	European Convention on Human Rights
ECtHR.....	European Court of Human Rights
EBIT.....	Evidence-Based Investigative Tool
ESI.....	Electronically Stored Information
EPSRC.....	Engineering and Physical Sciences Research Council
EU.....	European Union
Etc.....	Et cetera

Et.al,	Et alia
FBI	Federal Bureau of Investigation
FRT	Facial Recognition Technology
GDPR	General Data Protection Regulation
GRRS	General Recidivism Risk Scale
GPT	Generative Pre-trained Transformer
GVA	Gross Value Added
GVM	Gangs Violence Matrix
HART	Harm Assessment Risk Tool
IBM	International Business Machines Corporation
ICT	Information and Communication Technology
<i>Id.</i> ,	<i>Idem</i>
<i>i.e.</i> ,	<i>id est</i>
IQ	Intelligence Quotient
JMD	Justice Management Division
JUDIS	Judgment Information System
KYC	Know Your Customer
LGPD	General Data Protection Law
LISA	Legal Intelligence Support Assistant
MNI	National Interoperability Model
ML	Machine Learning
MeitY	Ministry of Electronics and Information Technology
NASSCOM	National Association of Software and Service Companies
NIST	National Institute of Standards and Technology
NJDG	National Judicial Data Grid
NITI	National Institution for Transforming India
NLP	Natural Language Processing
NDGFP	National Data Governance Framework Policy
ODR	Online Dispute Resolution
OECD	Organisation for Economic Co-operation and Development
OJP	Office of Justice Programs
OLP	Office of Legal Policy
OGRS	Offender Group Recidivism Score
OTT	Over The Top

PIPL.....	Personal Information Protection Law
PJe.....	Electronic Judicial Process
PSA.....	Public Safety Assessment
PSR.....	Pre-Sentence Report
R&D.....	Research and Development
RAI.....	Risk Assessment Instrument
RoSH.....	Risk of Serious Harm
RSR.....	Risk of Serious Recidivism
SCC.....	Supreme Court Cases
SML.....	Supervised Machine Learning
SPC.....	Supreme People’s Court
SSL.....	Strategic Subject List
STF.....	Supreme Federal Tribunal
STJ.....	Supreme Tribunal of Justice
SUPACE.....	Supreme Court Portal for Assistance in Court’s Efficiency
SUVAS.....	Supreme Court Vidhik Anuvaad Software
SyRI.....	System Risk Indication
TAR.....	Technology Assisted Review
THRIVE.....	Threat, Harm, Risk, Investigation Opportunities, Vulnerability of the victim, and Engagement level
UML.....	Unsupervised Machine Learning
UNESCO.....	United Nations Educational, Scientific and Cultural Organization
v.....	versus
VRRS.....	Violent Recidivism Risk Scale
WRNA.....	Women’s Risk and Needs Assessment

CHAPTER I

INTRODUCTION

1.1 INTRODUCTION

Artificial Intelligence (hereinafter referred to as AI) has become a buzzword with its increasing significance and ubiquitous presence in multiple facets of human life. In the 21st century, as technological development and scientific progress reach their zenith, the integration of AI into everyday life has become inevitable. AI applications can be found in many aspects of our lives, from agriculture to industry, communications, education, finance, government, service, manufacturing, medicine, and transportation.¹ AI has been helpful in many applications, including robotic vehicles, speech recognition, autonomous planning and scheduling, game playing, logistics planning, robotics, machine translation, etc.,² AI can potentially transform various aspects of our daily lives, including healthcare, agriculture, finance, education, e-commerce, etc.³ In this context, forecasts suggest emerging technologies will either replace or enhance various facets of human activities.⁴

AI technology is remarkably different from any other technology humankind has ever witnessed in the past in so far as these technologies are capable of having actual consequences in real-world applications that previously only human beings could generate. For instance, by guiding automobiles, making and executing business deals, engaging in meaningful conversations, participating in games alongside humans, offering crucial guidance to human decision-makers like physicians and judges, administering medical treatment, and even producing artistic works.⁵ The use of AI has become so pervasive that law and justice systems are no exception to it. The advent of AI into the legal domain is an emerging phenomenon that has the potential to revolutionize the justice systems worldwide. Today, machine learning processes are

¹ Christopher Rigano, *Using Artificial Intelligence to Address Criminal Justice Needs*, NIJ JOURNAL, 1 (2019), <https://www.nij.gov/journals/280/Pages/using-artificialintelligence-to-address-criminal-justice-needs.aspx>.

² STUART J. RUSSELL & PETER NORVIG, *ARTIFICIAL INTELLIGENCE: A MODERN APPROACH* 28–29 (Third edition, Global edition ed. 2016).

³ Aayushi Johari, *Top 10 Real World Artificial Intelligence Applications | AI Applications*, EDUREKA (Oct. 25, 2018), <https://www.edureka.co/blog/artificial-intelligence-applications/> (last visited Jun 10, 2024).

⁴ Fuso Jovia Boahemaa, *The impact of Artificial Intelligence on justice systems*, Trento BioLaw Selected Student Papers, PAPER N. 25 a.a. 2018/2019 1

⁵ Emod Veress, *A General Overview of Artificial Intelligence and Its Current Implications in Civil Law*, 11 ACTA UNIV. SAPIENTIAE: LEGAL STUD. 98 (2022).

transforming the way legal services are provided, whether it is assisting in legal research, rapidly reviewing contract provisions or extensive discovery responses, predicting settlement values or trial outcomes, or actively managing routine legal tasks for parties.⁶

AI may be simply understood as the intelligence employed and exhibited by computer systems as opposed to that of the natural intelligence of human beings or animals. AI responds to inputs in a manner consistent with traditional human responses, given the human capacity for contemplation, judgment, and intention.⁷ AI technology has progressed beyond executing pre-established codes to becoming a more advanced entity with human-like cognitive capabilities. This transformation holds significant potential for reshaping justice systems globally. There is no universally accepted comprehensive definition for AI; those available are mostly defined according to particular contexts and, therefore, have many disparities. AI involves applying technology to automate tasks that would ‘normally require human intelligence.’⁸

AI may be defined as a science and a set of computational technologies inspired by how human beings use their nervous system and senses and how they learn, reason, and take action.⁹ Dartmouth College is the institution accredited with the birth of AI, where in 1955, John McCarthy brought together a number of researchers at a workshop in order to study automata theory, neural nets and the study of intelligence.¹⁰ According to Richmond Thomason, AI is the subfield of Computer Science devoted to developing programs that enable computers to display behaviour that can (broadly) be characterized as intelligent.¹¹ According to Andrew Arruda, co-founder of ROSS Intelligence, AI means teaching a machine how to do a task that was thought to be human, and the term encompasses learning, speech, vision and language.¹² The

⁶ Paul Armstrong, *Artificial Intelligence: From Law Office to Administrative Proceedings*, 59 JUDGES J. 20 (2020).

⁷ Ameen Jauhar, Vaidehi Misra, & Arghya Sengupta, *Responsible AI for the Indian Justice System – A Strategy Paper*, (2021).

⁸ Harry Surden, *Artificial Intelligence and Law: An Overview*, 35 GA. ST. U. L. REV. 1305 (2019); *Artificial Intelligence*, ENG. OXFORD LIVING DICTIONARIES,

⁹ BARBARA J GROSZ ET AL., *Artificial Intelligence and Life in 2030*, 52 4 (2016).

¹⁰ Stanley Greenstein, *Preserving the Rule of Law in the Era of Artificial Intelligence (AI)*, 30 A.I. & L. 291 (2022). Pg 8; Russell and Norvig (2010), p. 17

¹¹ Richmond Thomason, *Logic and Artificial Intelligence*, in THE STANFORD ENCYCLOPEDIA OF PHILOSOPHY (Edward N. Zalta & Uri Nodelman eds., Summer 2020 ed. 2020), <https://plato.stanford.edu/archives/sum2020/entries/logic-ai/> (last visited Jun 10, 2024).

¹² Andrew Arruda, *An Ethical Obligation to Use Artificial Intelligence: An Examination of the Use of Artificial Intelligence in Law and the Model Rules of Professional Responsibility*, 40 AM. J. TRIAL ADVOC. 443 (2017).

foundations for the development of AI were laid down by significant but not exhaustive contributions from various disciplines, including Economics, Neuroscience, Psychology, Computer Engineering, etc. AI can be considered relevant to any intellectual task and has become a universal field.¹³

Across the world, the integration of AI into justice systems is reshaping the ways in which courts operate, legal professionals work, and justice is administered. AI technologies, encompassing machine learning, natural language systems, and data analytics, have entered courtrooms, offering the promise of enhanced efficiency, accuracy, and accessibility. These technologies empower legal professionals, judges, and litigants by providing powerful tools for legal research, document analysis, case prediction, legal advice, document automation and decision support, among other capabilities. This dynamic evolution necessitates a comparative analysis, seeking to understand the global landscape of AI in various legal contexts, its applications, challenges, and the implications it holds for justice systems worldwide. This transformative shift raises a crucial research problem: How is AI being adopted, implemented, and regulated in different countries, and the various implications of these varying approaches for the administration of justice.

With technological innovation and progress in AI techniques in particular, many countries are adopting AI-equipped technologies to spearhead developments and necessary changes in the justice system. Digital transformation and AI indeed matter for justice systems in two ways: primarily as to how AI can be responsibly adopted across justice systems and secondly, how judicial operators, including lawyers, judges, academicians, etc., in their pursuit to uphold the rule of law, are affected by these techniques. The adoption and use of AI techniques in justice systems are in their nascent stages, and the developments so far have not been uniform worldwide. Even the current technological capacities across justice systems vary from one country to another. AI technologies can improve the administration of justice in so far as it can assist through predictive justice by using algorithms to process cases, supporting judges in their decision making. It also helps in law enforcement by enabling predictive policing. As AI technologies advance, they have the potential to revolutionise how legal systems operate, from streamlining administrative tasks to aiding in complex legal decision-

¹³ RUSSELL AND NORVIG, *supra* note 2 at 1.

making. AI is increasingly integrated into the criminal justice system to enhance outcomes, reduce crime, and expedite judicial processes. In law enforcement, AI improves efficiency by automating time-consuming tasks and reducing human error. For example, AI-powered facial recognition can identify individuals and track their locations, significantly improving surveillance. This technology can also detect suspicious behaviours, such as shoplifting or traffic violations, and assist in vehicle identification by reading license plates under poor conditions. Several governments have adopted AI for these purposes.¹⁴

In the judicial system, AI aids in forensic analysis, particularly with low-level or degraded DNA samples, helping to solve cold cases and reduce the number of unsolved crimes. Predictive justice uses AI to analyze large volumes of case law data, helping judges make more consistent decisions and focus on cases where their expertise is most needed. AI also predicts recidivism by analyzing extensive criminal justice data, which helps in the efficient allocation of resources and speeds up justice processes. This application enhances public safety and increases community trust in the criminal justice system.¹⁵ Yet, this transformative wave of innovation in the legal field is not without its ethical and legal complexities. The ethical and legal implications of employing AI within the justice system are multifaceted, ranging from concerns about algorithmic bias and transparency to questions of accountability and human oversight.

1.2 RELEVANCE OF ARTIFICIAL INTELLIGENCE IN THE JUSTICE SYSTEM

AI could be considered an extension of human intelligence since the whole idea of AI springs from the thought as to whether machines could think like humans. The inevitable consequence of this is that human involvement is crucial to the operation of AI systems. AI systems invariably require human involvement, at least somewhere in the loop. Thus, the relation between AI and humans is a reciprocal arrangement. AI works based on human-coded algorithms and principles. In return, AI augments human effort with its distinct attributes, including learning and adaptation, perception, reasoning, scalability, interconnectivity, problem-solving, and efficiency. Given the pace at which technology is developing, the time is not very far when AI systems can

¹⁴ Stephane Coulaux Asma Idder, *Artificial Intelligence in Criminal Justice: Invasion or Revolution?*, <https://www.ibanet.org/dec-21-ai-criminal-justice> (last visited Jun 6, 2024).

¹⁵ *Id.*

improve themselves autonomously, resulting in rapid and exponential growth in capabilities and surpassing human intelligence, often called ‘technological singularity’.¹⁶ However, regarding AI and its application in the justice system, humans will continue to be at the heart of all judicial work and philosophy.

AI offers a significant opportunity and a powerful tool for enhancing the efficiency and quality of any task involving human thought. At the same time, it also presents challenges and critical questions, some of which are existential. This is particularly relevant to the judiciary. Courts will encounter AI in every aspect of their work, including their fundamental role in finding and overseeing facts in an era where real events occur within completely synthetic environments. Therefore, it is essential to learn to ask the right questions and make informed decisions about when to harness AI’s benefits and when to be cautious of its risks.

1.3 HISTORICAL OVERVIEW OF ARTIFICIAL INTELLIGENCE IN JUSTICE SYSTEM

The birth of the concept of AI dates back to 1950, when a young British polymath named Alan Turing mooted the possibility of machines being able to think like humans.¹⁷ Later, in 1955, John McCarthy, an American computer scientist, coined the term “Artificial Intelligence” for the first time at the Dartmouth Conference.¹⁸ He explored the possibility of designing machines capable of learning through trial and error processes. He emphasised the need for an artificial language that enables computers to engage in conjecture and self-reference, similar to human language.¹⁹ The late 1970s witnessed rapid growth and development in AI research, especially the development of programming languages. During the 1980s, there was a notable increase in the popularity of deep learning techniques and the utilisation of expert systems.²⁰ These advancements facilitated computers in learning from their mistakes and making independent decisions. During this period, legal expert systems emerged,

¹⁶ Vernor Vinge, *The Coming Technological Singularity: How to Survive in the Post-Human Era* (1993), <https://edoras.sdsu.edu/~vinge/misc/singularity.html> (last visited Jun 8, 2024).

¹⁷ Alan M. Turing, *Computing Machinery and Intelligence*, 49 MIND 433, 436 (1950)

¹⁸ J McCarthy et al., *A PROPOSAL FOR THE DARTMOUTH SUMMER RESEARCH PROJECT ON ARTIFICIAL INTELLIGENCE*, 10.

¹⁹ *Id.*

²⁰ What is the history of artificial intelligence (AI)? | Tableau, <https://www.tableau.com/data-insights/ai/history> (last visited Jun 1, 2024).

such as the TAXMAN²¹ project, introduced by McCarty, who is known as the “Father of Artificial Intelligence and Law,” for basic legal reasoning by constructing concepts, rules and their relationships in the field of corporate tax law²² and HYPO for case-based legal reasoning.²³

Between 2000 and 2010, significant advancements were brought with more powerful computers and machine learning. Despite debates over bias and fairness, predictive analytics began to be used in judicial processes, with tools like COMPAS for risk assessment in bail and sentencing decisions.²⁴ E-discovery platforms, including IBM’s Watson Debater, started analyzing vast amounts of legal documents, enhancing research efficiency.²⁵

Recently, AI applications have become more sophisticated and widespread. Natural language processing (NLP) technologies now analyze legal texts, assist in contract reviews, and draft documents. Systems like ROSS Intelligence²⁶ leverage IBM Watson to answer legal questions and aid research. AI-driven analytics also provide insights into judicial decision patterns to identify inconsistencies and biases. These advancements have raised ethical concerns about transparency, accountability, and bias, prompting efforts to develop ethical guidelines and regulatory frameworks for responsible AI use in the justice system.

In 2020, the release of OpenAI’s GPT-3 model revolutionised language tasks, producing content almost indistinguishable from human-created work.²⁷ ChatGPT is a tool hailed by some as a transformative advancement in the intersection of AI and the legal profession.²⁸ This AI language model, developed by OpenAI, can comprehend and promptly respond to a wide range of inquiries, even analysing documents. What

²¹ Richard E. Susskind, *Expert Systems in Law: A Jurisprudential Approach to Artificial Intelligence and Legal Reasoning*, 49 THE MODERN LAW REVIEW 168, 179 (1986).

²² Caixia Zou, Fangchun Li & Yi’nan Dong, *The Rationale and Approach of the Legal Expert System Construction*, 13 BEIJING LAW REVIEW 204 (2022).

²³ *Id.*

²⁴ Alexis Morin-Martel, *Machine Learning in Bail Decisions and Judges’ Trustworthiness*, AI & SOC (2023), <https://doi.org/10.1007/s00146-023-01673-6> (last visited Jun 22, 2024).

²⁵ IBM Watson Discovery, <https://www.ibm.com/products/watson-discovery> (last visited Jun 22, 2024).

²⁶ What is AI, ROSS INTELLIGENCE, <https://rossintelligence.com/what-is-ai.html> (last visited Jun 22, 2024).

²⁷ OpenAI’s new language generator GPT-3 is shockingly good—and completely mindless | MIT Technology Review, <https://www.technologyreview.com/2020/07/20/1005454/openai-machine-learning-language-generator-gpt-3-nlp/> (last visited Jun 1, 2024).

²⁸ Samuel D. Jr. Hodge, *Revolutionizing Justice: Unleashing the Power of Artificial Intelligence*, 26 SMU SCI. & TECH. L. REV. 217, 224 (2023).

sets ChatGPT apart is its ability to handle open-ended questions and provide answers without the need for legal professionals to conduct extensive research. The system processes user prompts and generates responses based on its extensive training data, which includes books, articles, and online content covering various topics.²⁹ In 2021, OpenAI's DALL-E showcased AI's progress in understanding and generating images from text captions, marking significant strides toward visual comprehension.³⁰ These developments underscore the ongoing evolution of AI, reshaping industries and human-machine interactions.

1.4 ARTIFICIAL INTELLIGENCE: KEY TERMS AND CONCEPTS USED IN THE DISSERTATION

AI is both a concept and a category of technological tools powered by advanced mathematical models and data, capable of augmenting, replicating, or improving human cognitive tasks that require thinking beyond mere calculation.³¹ AI encompasses various techniques, one of which is Machine Learning (ML), the most common subset used to process vast amounts of data, detect patterns, and make predictions.³² A further specialization within ML is Deep Learning (DL), which uses neural networks to analyze complex data patterns, often without human intervention.³³ These neural networks, inspired by the human brain, consist of interconnected nodes organized into layers that identify relationships between data points.³⁴

The application of AI extends to systems composed of models, algorithms, data, and associated technologies, referred to as AI Systems.³⁵ These systems operate within an ecosystem that includes humans and their organizations throughout the AI lifecycle. A crucial component of AI and its related systems is the algorithm, which is the mathematical logic used to organize, evaluate, and assess data for patterns and matches.³⁶ However, algorithms can introduce algorithmic bias, where the AI model

²⁹ *Id.*

³⁰ DALL·E: Creating images from text, <https://openai.com/index/dall-e/> (last visited Jun 1, 2024).

³¹ KAY FIRTH-BUTTERFIELD & KAREN SILVERMAN, *Artificial Intelligence and the Courts: Artificial Intelligence - Foundational Issues and Glossary*, 36 (2022), https://www.aaas.org/sites/default/files/2022-09/Paper%201_AI%20Foundational%20Issues_NIST_FINAL.pdf (last visited Jun 8, 2024).

³² *Id.* at 45.

³³ *Id.* at 40.

³⁴ *Id.* at 47.

³⁵ *Id.* at 35.

³⁶ *Id.*

produces skewed outputs due to its construction or the data on which it is trained.³⁷ This leads to the broader issue of bias, where preferences or tendencies for one thing over another can result in rational choices or discrimination, both intentional and unintentional.³⁸

Data plays a vital role in AI, particularly big data, which refers to the enormous and growing amounts of complex data driving today's AI models.³⁹ This data, however, can harbor data bias, reflecting historical patterns and inequalities that, when used to train models, can perpetuate these biases in future predictions.⁴⁰ Consequently, human biases can also infiltrate AI systems through various stages of development, influencing outcomes based on how data is selected, questions are framed, and model outputs are interpreted.

AI models often operate as black boxes, producing outputs without transparent explanations of their internal workings.⁴¹ This lack of explainability poses challenges, as it becomes difficult to understand how models reach their decisions, especially as they grow more complex. The field of explainable AI seeks to address this by developing techniques to approximate model decision-making processes and provide analog descriptions of how AI models influence outcomes.⁴² Facial Recognition is an application of AI that uses computer vision technology to identify or verify individuals based on their facial features.⁴³ While AI's predictive capabilities, such as making predictions based on past data to forecast future events, are powerful, they come with inherent uncertainties. Predictive analytics, a broader category of statistical tools, leverages historical data to inform decision-making, but the need for transparency and accountability remains critical.⁴⁴

Supervised Learning, where humans guide models on relationships within data, and Technology Assisted Review (TAR)⁴⁵, which uses algorithms to sift through large datasets, are techniques employed to refine AI's accuracy and efficiency. Privacy

³⁷ *Id.* at 36.

³⁸ *Id.* at 38.

³⁹ *Id.*

⁴⁰ *Id.* at 39.

⁴¹ *Id.* at 38.

⁴² *Id.* at 42.

⁴³ *Id.*

⁴⁴ *Id.* at 49.

⁴⁵ *Id.* at 52.

concerns arise as AI systems often handle personal information, leading to debates about unauthorized observation, surveillance, and intrusion. Responsible AI, Ethical AI, and Trustworthy AI are concepts that advocate for designing, building, and operating AI models with principles that protect human well-being, such as fairness, safety, and transparency.⁴⁶

1.5 STATEMENT OF PROBLEM

The introduction and use of AI technologies in the justice system worldwide have raised ethical and legal implications which are capable of affecting the process of administration of justice. Rapid developments in AI technologies necessitate a regulatory framework to address the ethical and legal issues arising from the use of AI in justice systems. As there is a lack of regulation on the use of AI in the Indian justice system, there is a need for a regulatory framework addressing the ethical and legal implications affecting the process of administration of justice in the Indian context.

1.6 RESEARCH OBJECTIVES

- To identify how AI is adopted and implemented in the justice system across selected countries.
- To conduct a comparative analysis of the adoption and implementation of AI in these countries.
- To identify and examine the ethical and legal implications associated with AI use in the process of administration of justice.
- To examine the various regulatory frameworks that govern the use of AI across selected countries.
- To examine whether a regulatory framework is necessary with respect to the use of AI in the Indian justice system.

1.7 SCOPE OF THE STUDY

This study aims to understand the implications of the adoption of Artificial Intelligence in the justice systems across the world. It attempts to analyse how far the use of AI techniques and tools has influenced the process of administration of justice and the

⁴⁶ *Id.* at 51.

extent to which they are being applied in the various ways in justice systems. The study entails an analysis of the adoption of AI techniques in the Indian justice system and attempts to compare it with that of other selected countries. The study also looks into the ethical and legal implications and challenges resulting from the use of AI in the process of administration of justice. It aims to understand the legal frameworks in place for the regulation of use of AI in justice systems and also seeks to find the requirement of a regulatory framework governing the use of AI in the Indian scenario and to arrive at resultant conclusions accordingly.

1.8 HYPOTHESIS

The lack of regulatory framework addressing the ethical and legal implications of the use of Artificial Intelligence in the Indian justice system affects the process of administration of justice.

1.9 RESEARCH QUESTIONS

1. How do different countries adopt and implement Artificial Intelligence in their justice system?
2. What ethical and legal implications arise from the use of Artificial Intelligence in the process of administration of justice?
3. What are the regulatory frameworks that govern the use of Artificial Intelligence in the process of administration of justice?
4. Whether a regulatory framework governing the use of Artificial Intelligence is necessary in the Indian justice system?

1.10 RESEARCH METHODOLOGY

The study is meant to be a doctrinal and comparative one which seeks to refer to various legislations, guidelines and policies, regional regulations, case laws, research reports, and government publications; the secondary sources which shall be used for the study include journal articles, blogs, etc. in relation to this topic.

1.11 LIMITATIONS OF THE STUDY

The research entails a comparative analysis of the adoption of AI in the justice system. AI, being a technology undergoing unprecedented developments and updates, has made

significant progress across a large number of countries. However, for the purposes of the present study, the researcher has focused on certain selected jurisdictions only, based on availability and access to relevant data, extent of AI adoption and extent of AI regulation.

1.12 CHAPTERISATION

The chapterisation of this project is as follows:

CHAPTER I: INTRODUCTION

The first Chapter entails a concise introduction to the topic. It includes the research problem, objectives of the research, the scope of the study, the hypothesis, the research questions proposed, the Research Methodology adopted and Chapterisation.

CHAPTER II: ADOPTION OF ARTIFICIAL INTELLIGENCE IN THE JUSTICE SYSTEM

This chapter focuses on the application of artificial intelligence techniques to the justice system. It covers how far AI has been of assistance to the important stakeholders in the justice system, such as judges, lawyers and litigants. It examines the varying levels of integration of AI technologies, such as crime risk prediction, technology-assisted review, automated decision-making, etc., across different legal systems.

CHAPTER III: ADOPTION OF ARTIFICIAL INTELLIGENCE IN THE JUSTICE SYSTEM: A COMPARATIVE ANALYSIS

This chapter delves into the global landscape of AI adoption within the justice system, exploring case studies and comparative analyses of different jurisdictions with special reference to India. Through comparative analysis of selected jurisdictions, it aims to identify trends, challenges, and success factors associated with adopting AI in justice systems worldwide.

CHAPTER IV: USE OF AI IN JUSTICE SYSTEM: ETHICAL AND LEGAL IMPLICATIONS

In this chapter, the ethical and legal implications of utilizing AI technologies within the justice system are thoroughly examined. It explores issues surrounding fairness, accountability, transparency, and bias in AI-driven decision-making processes. Drawing on ethical frameworks and legal principles, this chapter critically analyzes the

potential risks and benefits of AI applications in areas such as criminal justice, judicial decision-making, and legal analytics. Additionally, it explores existing guidelines and emerging best practices for addressing ethical and legal concerns related to AI adoption in the justice sector.

CHAPTER V: REGULATORY FRAMEWORK FOR THE USE OF AI IN JUSTICE SYSTEM

This chapter investigates the regulatory landscape governing the use of AI technologies in the justice system. It examines existing laws, regulations, and guidelines at the national, regional, and international levels that shape the deployment and operation of AI systems within legal contexts. Furthermore, it assesses the adequacy and effectiveness of current regulatory frameworks in safeguarding fundamental rights, ensuring procedural fairness, and promoting accountability in AI-assisted decision-making processes within the justice sector. Through a comparative analysis of regulatory approaches, this chapter aims to identify gaps and propose recommendations for enhancing the regulatory framework governing AI use in the justice system.

CHAPTER VI: CONCLUSIONS AND SUGGESTIONS

In this final chapter, conclusions, findings and suggestions from the preceding chapters are synthesised.

CHAPTER II

ADOPTION OF ARTIFICIAL INTELLIGENCE IN THE JUSTICE SYSTEM

2.1 INTRODUCTION

The legal realm, formerly guided by the seasoned wisdom of jurists, judges and legal professionals, is undergoing a remarkable transformation with the rise of AI. As AI technologies continue to develop, they are reshaping traditional legal frameworks and introducing new methodologies for resolving disputes and administering justice⁴⁷. AI-enabled automated technologies are increasingly being incorporated into the justice systems worldwide. The rapid scientific and technological advancements across the globe have expedited the application and use of AI in justice systems. As significant progress occurs in the academic field of AI, this technology is increasingly permeating into digital decision-making systems, effectively supplanting human decision-makers.⁴⁸ AI as a tool, helps in enhancing and facilitating the working of various stakeholders involved in the justice system. It has implications for judges, lawyers, litigants, law enforcement agencies, academicians, government and regulatory bodies, technology developers and vendors etc. AI tools are capable of assisting in legal research, document review, legal decision making etc., which ordinarily requires substantial human effort and intelligence.

2.2 THE INTERFACE BETWEEN AI AND LAW

AI as an interdisciplinary branch of computer science focused on designing, developing, and implementing models, algorithms, and data processing systems. AI refers to the theory and development of computer systems capable of generating responses or performing operations without or with most minor human assistance. It is distinct from any technology invented so far, as it does not necessarily require human intervention and can also respond to queries to which it has not been previously trained and also to learn from past mistakes.

AI aims to enable machines, including computers, robots, and programmed devices, to perform tasks that traditionally require human intelligence. AI encompasses reasoning,

⁴⁷ INDIAai, <https://indiaai.gov.in/article/navigating-the-legal-frontier-the-rise-of-ai-in-the-judiciary> (last visited May 30, 2024).

⁴⁸ Stanley Greenstein, *Preserving the Rule of Law in the Era of Artificial Intelligence (AI)*, 30 A.I. & L. 291, 2 (2022).

learning from data, problem-solving, self-improvement, and the capacity to imitate human intelligence and thought processes. AI aims to create systems that can emulate or recreate cognitive abilities associated with human intelligence, advancing technology's capacity to understand, interact with, and adapt to complex environments.⁴⁹

The interface between AI and law lies where both heavily rely on data for their functioning. The legal field, in general, generates a humungous amount of data as laws, academic works, judicial decisions, etc. In this context, AI comes into play by sifting such a huge pile of data, thereby cutting down time spent on routine tasks and organising it into the most relevant data sets. Thus, it helps saving time and human effort required in legal research, document review, identifying relevant judicial decisions, etc. AI tends to excel in scenarios with underlying patterns or structures that can be identified through data analysis or by representing knowledge. This could be one of the reasons why AI could help the justice system regarding case analysis, predictive justice, predictive policing, etc. since these tasks invariably involve analysing historical data and making decisions or conclusions.

AI systems are fed with enormous amounts of data, out of which the system identifies patterns and similarities, making it easier to perform tasks based on these patterns. However, the same feature could prove to be a double-edged sword where the tendency to draw patterns and identify similarities could perpetuate inequalities when the case requires specialised treatment. This is where the lack of AI to employ subjective interpretation in problem areas that require common sense, judgment, or intuition arises. AI automated technologies fail to interpret situations or places that involve abstract concepts or ideas, such as "reasonableness" or "goodwill," which require understanding the underlying meaning of words and applying logic to the problem.⁵⁰ This could be considered the biggest challenge in employing automated tools in judicial decision-making, thereby questioning the current possibilities of an AI-enabled robot judge dealing with a complicated case. Even then, the integration of AI into justice

⁴⁹ Emile Loza de Siles, *AI, on the Law of the Elephant: Toward Understanding Artificial Intelligence*, 69 BUFF. L. REV. 1389, 31 (2021).

⁵⁰ Harry Surden, *Artificial Intelligence and Law: An Overview*, 35 GA. ST. U. L. REV. 1305, 1326 (2018).

systems has the potential to enhance the efficiency of judicial services for citizens, improve access to justice, and reduce costs.

2.3 ARTIFICIAL INTELLIGENCE APPLICATIONS IN THE JUSTICE SYSTEM: IMPLICATIONS FOR STAKEHOLDERS

The advent of AI in the justice system can have significant implications for various stakeholders involved in the justice system. AI can enhance the efficiency of operations in significant areas⁵¹ such as litigation review, expertise automation, legal research, contract and litigation document generation, predictive analytics and contract analytics.⁵² One of the strongest criticisms and reasons for resistance against the use of AI in justice systems, especially by lawyers, is that it will replace human labour by subsuming the legal work which is traditionally carried out through human effort. However, it is merely a misnomer in so far as AI can only supplement but not supplant intelligent human effort. For instance, an AI system can generate the most likely outcomes based on predictive analytics in a particular case. However, the rationale in arriving at the outcomes is inexplicable by AI systems. Still AI systems can be of immense help in enhancing operational efficiency of judges, lawyers, law enforcement agencies etc. It can be of help to the litigants and the public at large by promoting access to justice. Leveraging the operational efficiency of the justice system requires a collaborative effort with both machine and human input.

2.4 ARTIFICIAL INTELLIGENCE AND JUDICIARY

Integration of AI into courts holds significant potential for the legal sector, especially the judiciary. The legal sector, in general, is involved in processes that invariably require extensive documentation. It requires a lot of paperwork, and an enormous amount of data in the form of text is generated, be it in the form of statutes, rules and regulations, judgments, contracts or other legal documents, books, law reviews, journals, etc. The judiciary, in particular, also generates a huge amount of data; from when a litigant file a suit or a complaint until his case is decided and a judgment is

⁵¹ Christophe Frèrebeau, *The Evolution Of AI In Law And Why The Contract Analysis Market Calls For The Next Step*, BRITISH LEGAL TECHNOLOGY FORUM (Sep. 1, 2021), <https://www.britishlegalitforum.com/news/the-evolution-of-ai-in-law-and-why-the-contract-analysis-market-calls-for-the-next-step/> (last visited Jun 5, 2024).

⁵² Suvigya Awasthy, Pintu Babu & Shubhangi Singh, *Application of Artificial Intelligence and Machine Learning in the Indian Legal System: Use Cases for Judiciary, Law Firms, and Lawyers*, 2 Part 2 INDIAN J. INTEGRATED RSCH. L. 1, 5 (2022).

delivered, a lot of text data and information are generated. It could be safely stated that the judiciary is one of the largest “text-producing industries.”⁵³ The adoption of technology in courts connotes digitization and automation of existing procedures. With the advent of technological developments in the last few decades, promising changes have opened doors for the justice delivery systems to use the tremendous amount of generated data to train state-of-the-art AI models to organise, analyse and interpret relevant information.⁵⁴ One of the ways in which AI interference can assist the judiciary would be by enhancing the efficiency of case management, which involves both knowledge and process management. The Indian judiciary, for instance, is quite sluggish in the efficient disposal of cases, and the humungous backlogs result from various reasons, including the lack of optimal utilisation of judicial resources, of which the most crucial resource is ‘judicial time’.⁵⁵ It is trite to say that judicial time is often expended unnecessarily for carrying out administrative responsibilities instead of actual judicial work. Increasing the number of judges or courts cannot enhance the judicial capacity unless the available judicial time is properly allocated to resolving cases expeditiously and efficiently.⁵⁶ At this juncture, AI promises to streamline and facilitate the judicial process by saving the judicial time. AI can intervene to assist the judicial process in numerous ways.

AI tools and techniques can assist the judiciary in judicial as well as administrative work. It can assist in knowledge management and process management.⁵⁷ In the context of knowledge management AI helps in knowledge creation, storing and retrieving, knowledge sharing and knowledge application. Knowledge creation using AI involves enabling predictive analytics through self-learning analytical capabilities. Using statistical algorithms and machine learning techniques AI can sift through historical data such as previous case laws or precedents, to identify and predict the likelihood of

⁵³ Eckard Schindler, *Judicial Systems Are Turning to AI to Help Manage Vast Quantities of Data and Expedite Case Resolution*, IBM BLOG (2024), <https://www.ibm.com/blog/judicial-systems-are-turning-to-ai-to-help-manage-its-vast-quantities-of-data-and-expedite-case-resolution/www.ibm.com/blog/judicial-systems-are-turning-to-ai-to-help-manage-its-vast-quantities-of-data-and-expedite-case-resolution> (last visited May 19, 2024).

⁵⁴ *Id.*

⁵⁵ Working Paper I - A framework for Constitution Bench cases, VIDHI CENTRE FOR LEGAL POLICY, <https://vidhilegalpolicy.in/research/differentiated-case-management-for-indian-judiciary/> (last visited May 20, 2024).

⁵⁶ *Id.*

⁵⁷ Integrating Artificial Intelligence in Judiciary.pdf, https://nja.gov.in/Concluded_Programmes/2022-23/P-1313_PPTs/1.Integrating%20Artificial%20Intelligence%20in%20Judiciary.pdf (last visited Jun 1, 2024).

future outcomes. This is done through machine learning techniques in which AI systems can improve over with experience and learn from past mistakes without being explicitly trained for each task. Such techniques can be used to identify legal issues and charges in a particular case. This can help judges in decision making and forecasting.⁵⁸ In the context of knowledge storing and retrieving, AI systems can help in harvesting, classifying, organising, storing and retrieving explicit knowledge. For instance, AI systems can organize and summarise legal precedents relevant to a new case.

Regarding knowledge-sharing, AI systems facilitate collaborative intelligence and shared organisational memory by facilitating real-time smart sharing between judges, staff, etc.⁵⁹ AI systems can be of immense help in knowledge application as well. Knowledge databases on precedents and statutory provisions can be created using AI, thereby saving time from extensive legal research and offering ready-made resources for decision-making and real-time assistance to judges. Q&A databases can be created with common legal questions and detailed answers based on relevant precedents, statutory provisions, and settled legal principles, thereby enhancing efficiency and consistency in judicial decision-making.⁶⁰ Regarding process management, the use of AI systems in the administrative tasks of judges helps in automating redundant tasks and reducing manual errors.⁶¹

2.5 ARTIFICIAL INTELLIGENCE AND LAWYERS

It is trite to say that the legal profession is one that is reluctant to change. Lawyers find it hard to accept any technology into the field at the risk of denouncing established norms of lawyering.⁶² AI is perceived as a threat to replacing lawyers one day, which is justified by this traditional resistance of the lawyers' community to imbibe and adapt technological developments into the profession.⁶³ The fear of being replaced at work by intelligent machines is one of the reasons for this resistance. To begin with, the legal

⁵⁸ *Id.* at 9.

⁵⁹ *Id.* at 11.

⁶⁰ *Id.* at 12.

⁶¹ *Id.* at 13.

⁶² Melanie Reid, *A Call to Arms: Why and How Lawyers and Law Schools Should Embrace Artificial Intelligence The Role of Technology in Professional Advice Symposium*, 50 U. TOL. L. REV. 477, 2 (2018).

⁶³ Parth Lalit Sagdeo, *Blending Machine Intelligence with Natural Intelligence: Artificial Intelligence and Law*, 3 Issue 6 INT'L J.L. MGMT. & HUMAN. 1215, 1217 (2020).

profession, by its very nature, makes the human element inevitable⁶⁴⁶⁵, in so far as a lawyer's job includes interacting and advising the clients, framing arguments and applying facts to the relevant legal framework, finding loopholes to win the case, appearing in the courtroom, etc., which no state-of-the-art technology can replace. Nevertheless, AI tools can make the laborious tasks of legal research and document review a lot easier. It is sufficient to say that the advent of AI in the practice of law brings more benefits than challenges. AI tools can help lawyers in legal research and e-discovery⁶⁶, due diligence, contract review, legal analytics etc.⁶⁷

In the context of legal research, several AI tools are in vogue. For instance, ROSS's AI Search uses natural language processing algorithms in understanding, retrieving and ranking the case law most suited to the query.⁶⁸ It makes use of four capabilities of AI technology, such as machine learning⁶⁹, grammatical structure⁷⁰, word embeddings⁷¹ as well as proprietary and ranking algorithms.⁷² E-Discovery or Electronic Data Discovery as a mode of information retrieval has enabled lawyers to collect evidence by efficiently managing large volumes of data that will help in litigation support and management.⁷³ With the advent of AI, data mining and machine learning help to enable next generation E-Discovery. AI-enabled NLP and Social Network Analysis help to find relationships and communication patterns within large datasets which can further facilitate E-Discovery.⁷⁴ Due diligence is conducted using AI tools, this would include contract review, legal research and electronic discovery among others. Several software are

⁶⁴ A.I. Is Doing Legal Work. But It Won't Replace Lawyers, Yet. - The New York Times, <https://www.nytimes.com/2017/03/19/technology/lawyers-artificial-intelligence.html> (last visited Jun 2, 2024).

⁶⁵ Reid, *supra* note 62 at 4.

⁶⁶ *Id.* at 479.

⁶⁷ Surden, *supra* note 50 at 1329–1332.

⁶⁸ What is AI, ROSS INTELLIGENCE, <https://rossintelligence.com/what-is-ai.html> (last visited Jun 2, 2024).

⁶⁹ Machine learning enables computers to recognize patterns of context, syntax and meaning within legal documents.

⁷⁰ AI tool understands the changes in meaning of sentences depending on the relationship between types of words, identifies the parts of speech and groups them into discrete phrases.

⁷¹ A mathematical technique for placing words in a multi-dimensional space so that words that are similar in meaning are closer together. It helps matching words in query to words in database.

⁷² ROSS identifies additional context apart from keyword search by matching facts and procedural posture of details in the query using proprietary and retrieval algorithms.

⁷³ Jack G. Conrad, *E-Discovery Revisited: The Need for Artificial Intelligence beyond Information Retrieval Special Issue: E-Discovery*, 18 A.I. & L. 321, 332 (2010).

⁷⁴ *Id.* at 338.

available for due diligence such as Casetext⁷⁵, Disco⁷⁶, Docusign⁷⁷, Kira Systems⁷⁸, MRI Contract Intelligence⁷⁹ (formerly Leverton AI), eBravia⁸⁰ etc. AI-powered legal document review is another application which can be of assistance to lawyers in reducing manual effort in parsing through the vast amounts of documents. With the help of machine learning and Natural Language Processing (NLP) technology, AI-based tools can swiftly undertake contract review by analyzing documents and identifying and extracting problematic clauses or necessary portions in seconds. These tools, such as Clearlaw⁸¹, Lexion⁸², can be used to detect, extract, and scrutinise contract clauses, redline text, and edit contracts effectively.

AI-powered document review uses AI and machine learning algorithms to help in sorting out and analysing electronic documents based on their relevance to a legal case.⁸³ E-Discovery basically makes use of this technology to sift through Electronically Stored Information (ESI) for use as evidence in court proceedings.⁸⁴ AI document review is carried out using Technology Assisted Review (TAR) or generative AI the former is useful in case of text-heavy documents and is the currently used method, while the latter is more futuristic and can review text as well as videos.⁸⁵ Everlaw⁸⁶, Opentext⁸⁷, Brainspace⁸⁸ are examples of some of the AI platforms that are used in document review and E-Discovery. In the context of legal analytics, Lex

⁷⁵ Casetext - CoCounsel, <https://casetext.com/> (last visited Jun 8, 2024).

⁷⁶ Advanced ediscovery solutions | Cutting-edge AI and legal technology, <https://csdisco.com/> (last visited Jun 8, 2024).

⁷⁷ Docusign | #1 in Electronic Signature and Intelligent Agreement Management, <https://www.docusign.com/en-in> (last visited Jun 8, 2024).

⁷⁸ Machine Learning Contract Search, Review and Analysis Software, <https://kirasystems.com/> (last visited Jun 8, 2024).

⁷⁹ Contract Intelligence Homepage, MRI SOFTWARE, <https://mricontractintelligence.com/> (last visited Jun 8, 2024).

⁸⁰ eBrevia, EBREVIA (2024), <https://www.ebrevia.com> (last visited Jun 8, 2024).

⁸¹ What is Clearlaw? | AI Contracting Intelligence, CLEARLAW 1.20, <https://www.clearlaw.ai/what-is-clearlaw> (last visited Jun 8, 2024).

⁸² AI Contract Assist - Lexion, <https://www.lexion.ai/products/ai-contract-assist> (last visited Jun 8, 2024).

⁸³ Justin Smith, *How Legal Teams Utilize AI Document Review*, CLOUD-NATIVE EDISCOVERY SOFTWARE | EVERLAW (2024), <https://www.everlaw.com/blog/ai-and-automation/how-legal-teams-can-utilize-ai-document-review/> (last visited Jun 2, 2024).

⁸⁴ *Id.*

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ Legal Industry Technology Solutions | Legal Tech, OPENTEXT, <https://www.opentext.com/solutions/industry/legal> (last visited Jun 2, 2024).

⁸⁸ eDiscovery, <https://brainspace.revealdata.com/ediscovery> (last visited Jun 2, 2024).

Machina⁸⁹ is a prominent AI tool that offers in-depth insights and data analysis for the legal field. Part of LexisNexis, it leverages advanced technologies to examine legal cases, judge rulings, court activities, and attorney performance. This data helps legal professionals make informed decisions, anticipate case outcomes, craft legal strategies, and identify trends across different areas of law. Lex Machina's detailed judicial analytics give lawyers and firms a competitive advantage and help enhance their legal practices. One another instance of where AI can help lawyers is in predictive coding.⁹⁰ It refers to the general name for computer-based document review techniques that help filter out irrelevant documents and is based on machine learning and knowledge representation.⁹¹ AI can aid lawyers in generating automated pleadings, including responsive pleadings and other legal documents. By utilizing various AI technologies, these tools can create numerous types of legal documents that align with the lawyer's specific formatting and response approach. These high-quality drafts can be fully tailored to meet the lawyer's needs using tools such as Woodpecker⁹², Legalup⁹³, etc.

2.6 ARTIFICIAL INTELLIGENCE AND LITIGANTS

Like how the adoption of AI can help judges and legal professionals, it also has a significant bearing on the litigants. The major advantage of bringing AI into the legal arena is the democratization of law. It involves breaking down barriers to legal information and services and empowering individuals to understand and navigate legal issues without the need for extensive legal expertise or resources. Automated legal systems possess the capacity to process legal documents within mere seconds.⁹⁴

Artificial intelligence (AI) aids litigants by providing accessible legal resources and assistance through online platforms, offering predictive guidance and basic court information. In the courtroom, AI-powered smartphones facilitate evidence presentation, while AI-driven interpretation services overcome language barriers via remote videoconferencing. Additionally, virtual proceedings and remote witness

⁸⁹ Marketing, *Legal Analytics - Quickly Uncover Strategic Information*, LEX MACHINA, <https://lexmachina.com/legal-analytics/> (last visited Jun 8, 2024).

⁹⁰ Surden, *supra* note 50 at 1329.

⁹¹ *Id.*

⁹² Woodpecker | Legal Document Automation, <https://www.woodpeckerweb.com/> (last visited Jun 8, 2024).

⁹³ LegalUp | Legal Document Automation, <https://legalup.me/> (last visited Jun 8, 2024).

⁹⁴ The Promise and Peril of AI Legal Services to Equalize Justice, HARVARD JOURNAL OF LAW & TECHNOLOGY (2023), <https://jolt.law.harvard.edu/digest/the-promise-and-peril-of-ai-legal-services-to-equalize-justice> (last visited Jun 8, 2024).

appearances, enabled by AI technology, streamline case proceedings and improve accessibility, particularly for minor cases and urgent matters. Overall, AI enhances access to justice by providing efficient and cost-effective solutions to legal challenges faced by litigants.⁹⁵ An AI tool called Rocket Lawyer functions as an online legal services provider, offering access to legal documents, attorney services, and legal advice through its platform. It uses AI in its platform for document automation to help users create customised legal documents, such as business contracts, lease agreements, eviction notices, wills, divorce settlement agreements, etc., more efficiently.⁹⁶ Such tools help understand the law without a lawyer's assistance, enhancing access to legal services. In the realm of legal technology, several AI-driven bots are revolutionising the way legal services are accessed and delivered.

AI can also answer legal queries and offer assistance at lower costs. DoNotPay, a legal chatbot, has garnered attention for its ability to help users dispute parking tickets with a success rate of 64%.⁹⁷ By utilising machine learning algorithms, DoNotPay continually improves its efficacy over time. Similarly, Robot Lawyer LISA (Legal Intelligence Support Assistant) offers a streamlined approach to legal document creation, particularly for confidentiality agreements and property-related contracts.⁹⁸ Employing a series of questions and responses, LISA facilitates the negotiation process and produces legally binding agreements. Meanwhile, ROSS leverages IBM Watson's supercomputing capabilities to expedite legal research and case management tasks, enabling firms like BakerHostetler to handle complex cases more efficiently.⁹⁹ BillyBot serves as a virtual junior clerk, assisting users in finding the appropriate legal resources and professionals for their needs.¹⁰⁰

⁹⁵ Fredric Lederer, *Improving Access to Justice via Technology*, ABA JOURNAL, https://www.abajournal.com/news/article/improving_access_to_justice_via_technology (last visited Jun 8, 2024).

⁹⁶ Rocket Lawyer: Free Legal Documents, Attorneys, Incorporations & Taxes, <https://www.rocketlawyer.com/> (last visited Jun 8, 2024).

⁹⁷ Save Time and Money with DoNotPay!, <https://donotpay.com/> (last visited Jun 8, 2024).

⁹⁸ LISA – your Legal Intelligence Support Assistant, <https://robotlawyerlisa.com/> (last visited Jun 8, 2024).

⁹⁹ PTL, *World's First Robot Lawyer ROSS Hired by US Law Firm*, MINT (2016), <https://www.livemint.com/Politics/bQNLHR96A5G4Kvg81JwWFM/Worlds-first-robot-lawyer-ROSS-hired-by-US-law-firm.html> (last visited Jun 8, 2024).

¹⁰⁰ Welcome to BillyBot, BILLYBOT, <http://www.billybot.co.uk/> (last visited Jun 8, 2024).

2.7 ARTIFICIAL INTELLIGENCE AND LAW ENFORCEMENT AGENCIES

AI technologies are increasingly being integrated into policing, offering new methods to predict and identify suspects and crime hotspots. The enhanced computational power and vast data resources enable the generation of inferences about potential violence and threats. These AI applications are set to transform policing much like they are revolutionizing other fields such as healthcare, insurance, commerce, and transportation.¹⁰¹ Police departments employ AI-powered predictive algorithms to forecast where crimes are likely to occur and identify individuals at high risk of becoming crime victims or perpetrators. These algorithms analyze extensive data sets to predict criminal activity, enabling law enforcement to allocate resources more effectively and potentially prevent crimes before they occur.¹⁰² Law enforcement agencies are beginning to explore the use of autonomous drones and robots.¹⁰³ These technologies can be used for surveillance and patrolling, potentially enhancing public safety while raising questions about accountability and the appropriate use of force. AI is also utilized in Automated License Plate Recognition (ALPR) systems, which have become a common tool for police departments.¹⁰⁴ These systems use cameras and plate-reading algorithms to record and analyze millions of license plates, aiding in the identification of stolen vehicles and monitoring traffic violations.

AI systems, defined by the U.S. Code¹⁰⁵, are machine-based systems that can make predictions, recommendations, or decisions based on human-defined objectives. These systems use inputs from both machines and humans to perceive environments, abstract these perceptions into models, and formulate actionable information.¹⁰⁶ AI enhances the capabilities of automated license plate readers by using machine vision to automate tasks such as issuing red-light violation tickets. This application increases efficiency and allows for more effective traffic law enforcement.¹⁰⁷ Security cameras equipped with AI-embedded hardware can perform real-time facial recognition to identify

¹⁰¹ Elizabeth E. Joh, *Artificial Intelligence and Policing: First Questions*, 41 SEATTLE U. L. REV. 1139, 1139 (2017).

¹⁰² *Id.* at 1140–1141.

¹⁰³ *Id.* at 1141.

¹⁰⁴ *Id.* at 1140.

¹⁰⁵ Kristin Finklea, *Law Enforcement Use of Artificial Intelligence and Directives in the 2023 Executive Order*, 1 LAW ENFORCEMENT USE OF ARTIFICIAL INTELLIGENCE AND DIRECTIVES IN THE 2023 EXECUTIVE ORDER 1 (2023).

¹⁰⁶ *Id.* at 1.

¹⁰⁷ *Id.*

potential suspects. This capability helps law enforcement agencies quickly and accurately identify individuals involved in criminal activities.¹⁰⁸ AI-enhanced facial recognition and text analysis tools can scan online advertisements to detect potential crimes, such as human trafficking. By automating the analysis of vast amounts of online data, AI helps law enforcement agencies identify criminal activities more efficiently.¹⁰⁹ In addition to traditional gunshot detection technology, security cameras with AI-enhanced software can detect weapons and alert police before shots are fired. This preemptive capability can prevent violent incidents and enhance public safety.¹¹⁰ AI can be integrated with predictive policing models to identify individuals or locations at high risk of involvement in crime. This proactive approach helps law enforcement agencies allocate resources more effectively and potentially prevent crimes before they occur.¹¹¹ While the adoption of AI in policing is still in its early stages and uneven across different jurisdictions, its potential to enhance law enforcement capabilities is significant. However, addressing the complex issues of fairness, accountability, transparency, and ethics is crucial to ensure that AI systems contribute positively to public safety without undermining civil rights.¹¹² Further applications of ai for assisting law enforcement agencies are explained in the upcoming section and in the next chapter.

2.8 ARTIFICIAL INTELLIGENCE APPLICATIONS IN THE CRIMINAL JUSTICE SYSTEM

As a fast-advancing field of computer science, AI significantly contributes to medicine, communications, education, finance, government, service, manufacturing, industry, transportation, etc. In the legal arena, AI has added significance for the criminal justice system as well as the civil justice system. Like humans, AI systems can process data sets to identify and sort images, objects, etc., to detect crime. AI systems have numerous applications in the criminal justice system, particularly in crime detection, crime prediction and prevention, criminal investigations, etc. Following are some of the use cases where AI tools facilitate the criminal investigation process.

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*

¹¹⁰ *Id.*

¹¹¹ *Id.* at 2.

¹¹² Joh, *supra* note 101 at 1143–1144.

Although AI is still in its infancy, developments are occurring rapidly, and it has the potential to assist the criminal justice system by predicting crimes and acting as a criminal investigation tool. Using AI tools in criminal proceedings facilitates the transition from the conventional reactive approach to crime-fighting to a more proactive and preventive strategy.¹¹³ By making use of tools that could assist in the following areas, AI seeks to facilitate crime prediction and prevention.

In law enforcement, predictive policing systems have proved to be an innovative tool to reduce the rate of criminal activities by predicting the likelihood of such events using AI tools. At the heart of this measure is to initiate a proactive approach towards crime prevention. Predictive policing, an anticipatory approach, harnesses data analysis, statistical modelling, and AI algorithms to predict the time and location of potential crimes. By examining historical crime data, geography, weather, and other pertinent factors, it pinpoints areas prone to criminal activity. Law enforcement agencies utilize AI-driven predictive models to translate this data into actionable intelligence. The effectiveness of predictive policing relies on AI algorithms' capacity to rapidly and precisely analyze vast datasets. Leveraging AI's prowess in pattern recognition and data processing, it can pinpoint crime trends, correlations, and anomalies that might elude human analysts.

In order to cater to particular crime prevention targets, various predictive policing models in vogue include hot spot analysis, crime trend analysis, repeat offender identification and resource optimization.¹¹⁴ Predictive policing algorithms, including PredPol and HunchLab, inform police deployment with estimates of where crime is most likely to occur.¹¹⁵ One significant application of ai in criminal justice is crime risk prediction using risk assessment tools. Risk assessment Instruments (RAIs) aim to forecast a defendant's likelihood of future misconduct. These forecasts are crucial in important legal decision-making, such as whether to detain an individual pending trial.

¹¹³ ERA – Academy of European Law, *Artificial Intelligence (AI) in Criminal Justice- Automated Decision-Making and Its Application in Criminal Law*, (2023), https://www.era.int/cgi-bin/cms?_SID=NEW&_sprache=en&_bereich=artikel&_aktion=detail&idartikel=131850 (last visited Jun 10, 2024).

¹¹⁴ Prithwish Ganguli, *Predictive Policing and Crime Prevention: The Role of AI*, INDIAAI (2023), <https://indiaai.gov.in/article/predictive-policing-and-crime-prevention-the-role-of-ai> (last visited Jun 10, 2024).

¹¹⁵ Alex Chohlas Wood, *Understanding Risk Assessment Instruments in Criminal Justice*, BROOKINGS (2020), <https://www.brookings.edu/articles/understanding-risk-assessment-instruments-in-criminal-justice/> (last visited Jun 10, 2024).

For instance, one RAI known as the Public Safety Assessment (PSA) considers factors like age and past misconduct to generate three distinct risk scores: the probability of future conviction for any offence, the likelihood of future conviction for a violent offence, and the risk of non-appearance in court.¹¹⁶ Risk assessment tools are statistical models employed to predict the likelihood of specific future events. These predictions are made by analysing how an individual's characteristics, such as demographics, criminal record, or responses to a psychological questionnaire, relate to the outcome and combining them into a numerical risk score. Typically, these scoring systems are developed using statistical methods and guidelines applied to data to understand the contribution of each characteristic to predicting a particular outcome, like missing a court appearance. These scores are then used to categorise individuals into different risk groups. Although they are less complex than the deep neural networks in many modern artificial intelligence systems, these tools represent basic forms of AI in the criminal justice system. Some use heuristic frameworks to generate scores, while others rely on simple machine-learning techniques to build predictive models from input data. Therefore, they clearly illustrate the potential social and ethical implications of automated AI decision-making.¹¹⁷

AI and machine learning algorithms are crucial in fraud detection. Machine learning algorithms are adept at analyzing large datasets, identifying patterns and irregularities that suggest fraudulent behavior. AI-powered systems are effective in combating different types of fraud, such as payment fraud, identity theft, and phishing attempts. Moreover, these systems evolve continuously, learning from emerging fraud patterns, which improves their ability to detect fraudulent activities. Machine learning algorithms serve as vital elements of AI, enabling advanced pattern recognition and data analysis. They operate through two main approaches: supervised machine learning (SML) and unsupervised machine learning (UML), which contribute to fraud detection.

SML utilises labelled data to forecast outcomes, enabling it to classify transactions as either fraudulent or legitimate based on past data. Conversely, UML employs anomaly detection algorithms to pinpoint transactions that diverge significantly from established patterns, making it adept at uncovering novel forms of fraud. While UML demands less human intervention, SML typically provides greater precision. AI and ML technologies

¹¹⁶ *Id.*

¹¹⁷ Report on Algorithmic Risk Assessment Tools in the U.S. Criminal Justice System.

bolster cybersecurity endeavours by enhancing the capacity to detect and counter online fraud and cyber threats. Online fraud detection systems, empowered by AI algorithms, can monitor and identify suspicious activities in real-time. This capability fortifies digital transactions across diverse platforms, including credit cards, online banking, and e-commerce, safeguarding against potential cyber threats.¹¹⁸

Gunshot detection technology, is another area which employs microphones and AI algorithms to detect and record gunshots, ascertain their locations, and alert law enforcement swiftly. These systems are pivotal in enhancing civilian security services and are increasingly adopted by cities worldwide. AI-powered visual gun detection systems utilize computer vision to detect firearms in existing CCTV or surveillance camera footage. This technology, often integrated with facial recognition capabilities, enables swift threat detection and response, including automated safety protocols activation.¹¹⁹

Crime forecasting involves predicting crimes before they occur, and law enforcement utilizes various tools for this purpose. Examples include stingrays, which track phones by mimicking cellphone towers but face privacy and legal concerns, and stakeouts, traditional surveillance techniques effective but limited by human factors like fatigue. Drones are also used for mapping cities and investigating crime scenes, though legal and airspace issues need addressing. Technologies like facial recognition, license plate recognition, and body cams aid in suspect identification and data recording but raise privacy and misuse concerns. While these tools offer benefits individually, integrating their positive aspects into a single machine could be highly beneficial. Moreover, machine learning techniques have shown promise in crime prediction studies, with algorithms accurately forecasting crime occurrences and rates in various datasets, showcasing their potential for improving law enforcement efforts.¹²⁰

In criminal justice and law enforcement, video and image analysis are crucial tools for gathering information on individuals, objects, and activities to aid in criminal investigations. Nonetheless, this analysis is highly labour-intensive, demanding a substantial investment in specialised personnel. Moreover, human error is a significant

¹¹⁸ Gilles Hilary & Bin Ke, *Artificial Intelligence and Fraud Detection* (2020).

¹¹⁹ How Technologies Help Mitigate Gun Violence, <https://www.scylla.ai/how-technologies-help-mitigate-gun-violence/> (last visited Jun 10, 2024).

¹²⁰ Neil Shah, Nandish Bhagat & Manan Shah, *Crime Forecasting: A Machine Learning and Computer Vision Approach to Crime Prediction and Prevention*, 4 VIS. COMPUT. IND. BIOMED. ART 9 (2021).

risk due to the vast amount of data, rapid technological advancements like smartphones and operating systems, and the scarcity of qualified personnel capable of processing such data.

AI technologies offer a solution to mitigate these challenges and operate as expert counterparts. Unlike traditional software algorithms that rely on predefined features such as facial characteristics or demographic information, AI algorithms for video and image analysis are capable of learning intricate tasks and establishing their own sophisticated facial recognition parameters. They possess the ability to match faces, identify objects like weapons, and detect complex events such as accidents or ongoing criminal activities, surpassing human capabilities in certain aspects.¹²¹ Modern technology empowers law enforcement to do more than just identify individuals and objects; it enables them to discern intricate accident and crime scenes, whether unfolding in real-time or after the fact. Moreover, recent technological breakthroughs have enhanced the capability to identify faces even in challenging scenarios, such as poor image quality, imperfect angles, or obscured faces. One innovative approach involves simulating lower-quality images by degrading clear images of numbers and letters and then utilizing mathematical representations of the degraded images to facilitate identifications.¹²²

AI holds promise for the law enforcement community, particularly in the realm of scientific evidence processing, notably in forensic DNA testing, which has significantly impacted the criminal justice system in recent decades. In collaboration with forensic science institutions, Syracuse University researchers have explored a novel machine learning-based approach to mixture deconvolution.¹²³ A hybrid method combining human analysts' expertise with data mining and AI algorithms aims to separate and identify individual DNA profiles, mitigating potential weaknesses inherent in using a single approach. While ongoing evaluation of AI techniques in DNA analysis is essential, research suggests that AI technology has the potential to assist in these

¹²¹ Christopher Rigano, *supra* note 1.

¹²² The Growing Role of AI in Criminal Justice, MASTERSINAI.ORG, <https://www.mastersinai.org/industries/criminal-justice/> (last visited Jun 10, 2024).

¹²³ Harnessing Machine Learning For Human Justice, COLLEGE OF ARTS & SCIENCES AT SYRACUSE UNIVERSITY, <https://artsandsciences.syracuse.edu/fall-21-magazine/harnessing-machine-learning-for-human-justice/> (last visited Jun 10, 2024).

intricate analyses, offering opportunities to enhance forensic investigations and provide critical leads for law enforcement.

Since its inception in the late 1980s, forensic DNA evidence has revolutionised the field of criminal justice, playing a pivotal role in solving cold cases and exonerating wrongly convicted individuals. The evolution of DNA analysis owes much to the integration of AI, transforming it from its rudimentary beginnings to today's sophisticated techniques. AI now enables forensic laboratories to handle DNA evidence that was previously unusable, including low-level, degraded, or otherwise compromised samples. This includes the remarkable ability to detect minuscule amounts of DNA and extract viable DNA from evidence dating back to before DNA testing was available. Moreover, to tackle the challenge of identifying multiple DNA contributors, data mining and AI algorithms are adept at analysing vast amounts of intricate data, ultimately enabling the separation and identification of individual DNA profiles.¹²⁴

2.9 ARTIFICIAL INTELLIGENCE APPLICATIONS IN THE CIVIL JUSTICE SYSTEM

The application of AI to the work procedure in administrative and civil cases is significantly influenced by the intricacy of the information in a case and the extent of foreseeability of the case outcome.¹²⁵ AI plays a transformative role in the civil justice system by streamlining and enhancing various judicial processes. According to Dr. Dory Reiling¹²⁶, one of the primary benefits is the automation of routine cases, which constitute the bulk of the civil cases. AI can automatically predict outcomes based on provided data, generating court rulings and enforceable documents. This reduces the need for manual data entry and speeds up the resolution of cases. In family and employment matters, where many cases involve straightforward legal assessments, AI acts similarly to a civil-law notary.¹²⁷ It verifies the legality of arrangements such as divorces, parental authority provisions, and employment terminations. Here, AI ensures that judgments are produced quickly and accurately, confirming compliance with the law. AI also aids in more complex civil cases by providing smart filing portals that help

¹²⁴ *Id.*

¹²⁵ Dr. A.D. Reiling, *Round Table on Artificial Intelligence in the Legal Domain*, 1 (2018).

¹²⁶ Hon. Dr. Dory Reiling LLM is a retired judge and an international court and IT expert.

¹²⁷ A. D. Reiling, *Courts and Artificial Intelligence Court Administration at a Time of Uncertainty: Professional Article*, 11 IJCA 1, 3 (2020).

parties present their cases effectively.¹²⁸ For cases that may settle out of court, AI analyzes the parties' viewpoints and suggests optimal solutions, facilitating agreements without the need for a formal judgment. Even in non-routine scenarios, AI supports the judiciary by managing digital case files and making legal sources easily accessible.¹²⁹ This capability is crucial for handling large volumes of information efficiently, allowing judges to focus on decision-making. Thus, AI enhances the efficiency, accuracy, and speed of the civil justice system, supporting both routine and complex case management.

Dr. Dory Reiling further identifies the key areas where AI can streamline court processes. According to her, AI presents numerous advantages for courts, addressing various needs and enhancing efficiency. It includes information management, advisory services, predictive analytics etc.,

AI excels in organizing vast amounts of legal information, which is crucial for handling the substantial caseloads often seen in civil courts. For instance, eDiscovery, widely used in the US and the UK, employs AI-powered algorithms to sift through extensive electronic data swiftly and accurately, streamlining the pre-trial discovery process.¹³⁰ AI's advisory capabilities offer valuable assistance to individuals navigating civil legal matters. By analyzing case-related data and providing actionable insights, AI aids in resolving disputes and potentially mitigating the need for formal court proceedings. Platforms like the Civil Resolution Tribunal (CRT)¹³¹ in British Columbia, Canada, leverage AI to provide accessible legal information and guidance to parties involved in civil disputes.¹³² AI's predictive capabilities in civil litigation have shown promise in forecasting case outcomes based on historical data. Though not foolproof, AI algorithms can assist legal professionals in analyzing the probable outcome of a case, aiding in decision-making and settlement negotiations.¹³³

AI can perform tasks traditionally within the exclusive domain of human intelligence, such as document review in civil litigation. Machine learning, a subset of AI, allows computers to improve their performance on tasks over time through training with data

¹²⁸ *Id.*

¹²⁹ *Id.*

¹³⁰ *Id.*

¹³¹ Home » BC Civil Resolution Tribunal, BC CIVIL RESOLUTION TRIBUNAL, <https://civilresolutionbc.ca/> (last visited Jun 10, 2024).

¹³² Reiling, *supra* note 127 at 4.

¹³³ *Id.*

sets, known as seed sets. This enables computers to execute tasks that require pattern recognition and classification, thereby enhancing efficiency and accuracy in document review processes in civil litigation.¹³⁴

Predictive coding leverages machine learning to automate the review of large document sets by using a combination of algorithmic tools, including metadata searching, contextual searching, and concept searching. These tools enable the algorithm to understand the context in which specific terms are used, unlike traditional keyword searches which focus solely on the presence of specific terms. By analyzing a seed set of documents reviewed by legal professionals, the algorithm can learn to identify and classify relevant documents in a larger dataset, reducing the burden on human reviewers and increasing the efficiency of the review process.¹³⁵ In civil litigation, parties are required to disclose and produce all relevant documents in their possession. This process, known as documentary discovery, traditionally involves manual review by legal teams. However, the advent of digital technology has exponentially increased the volume of electronic documents, making manual review impractical and inefficient. Machine learning, through predictive coding, addresses this challenge by automating the identification and classification of relevant documents, thereby streamlining the discovery process and ensuring compliance with legal obligations.¹³⁶

Predictive coding automates document review by training an algorithm to recognize patterns and classify documents based on their content. This process begins with the development of a seed set, which is a sample of documents reviewed and coded by legal professionals. The algorithm uses this seed set to learn and apply the learned patterns to the entire dataset, categorizing documents and filtering out irrelevant ones. This automation not only accelerates the review process but also enhances the accuracy and consistency of document classification, reducing the potential for human error.¹³⁷

Another significant area for AI to enhance efficiency is Online Dispute Resolution (ODR). AI is increasingly integrated into online dispute resolution platforms, allowing parties to resolve civil disputes through digital channels. These platforms use AI algorithms to facilitate communication, assess claims, and suggest potential solutions,

¹³⁴ Gideon Christian, *Predictive Coding: Adopting and Adapting Artificial Intelligence in Civil Litigation*, 97 CAN. B. REV. 486, 488,489 (2019).

¹³⁵ *Id.* at 492–493.

¹³⁶ *Id.* at 493–495.

¹³⁷ *Id.* at 496–497.

thereby reducing the burden on traditional court systems. Online Dispute Resolution (ODR) is gaining traction in the legal landscape, particularly for Alternative Dispute Resolution (ADR) processes like online negotiation, mediation, or arbitration. With the advancement of AI technology, ODR is becoming increasingly sophisticated, especially in Family Law cases.¹³⁸ By employing AI for financial calculations, issue identification, and other dispute resolution functions, participants in online mediation and negotiations can focus more effectively on resolving their conflicts.

2.10 CONCLUSION

The integration of AI into the justice system represents a transformative development with profound implications for both criminal and civil justice systems. Technological advancements in AI have been increasingly adopted to address the multifaceted challenges within legal frameworks, promising enhanced efficiency, accuracy, and accessibility. In the criminal justice system, AI applications such as predictive policing, risk assessment tools, and advanced forensic analysis have shown significant promise. Predictive policing models, utilizing data analysis and AI algorithms, have the potential to proactively prevent crimes by identifying hotspots and predicting the likelihood of criminal activities. Tools like PredPol and HunchLab exemplify how AI-driven insights can inform strategic police deployment, thus enhancing public safety and optimizing resource allocation. Risk assessment tools, such as the Public Safety Assessment (PSA), further illustrate the utility of AI in predicting the likelihood of reoffending or failing to appear in court, thereby assisting in critical judicial decisions regarding pre-trial detentions. Moreover, AI's role in forensic DNA analysis underscores its capability to handle complex data, facilitating the resolution of cold cases and the exoneration of wrongly convicted individuals. These advancements underscore AI's potential to shift the criminal justice system from a reactive to a proactive and preventive approach.

In the civil justice system, AI's role in automating routine tasks and enhancing legal procedures is equally transformative. AI tools streamline administrative processes by automating document generation, scheduling, and legal research, thereby reducing the workload on legal professionals and expediting case resolutions. AI's ability to handle vast amounts of data ensures that legal processes are not only efficient but also more

¹³⁸ Darren Gingras & Joshua Morrison, *Artificial Intelligence and Family ODR Special Issue: Online Dispute Resolution (ODR)*, 59 FAM. CT. REV. 227, 229 (2021).

accessible and cost-effective for litigants. By improving efficiency and highlighting core aspects of disputes, AI ensures that legal outcomes are not only swift but also just and equitable. This integration benefits both large legal firms and smaller practices, making advanced AI tools accessible to a broader range of legal professionals and their clients. However, the adoption of AI in the justice system is not without challenges. Issues of fairness, accountability, transparency, and ethics are paramount. AI systems must be designed and implemented with careful consideration of these factors to ensure they contribute positively to justice without undermining civil rights. The potential biases in AI algorithms, the need for human oversight in decision-making, and the ethical implications of automated judgments are critical areas that require ongoing scrutiny and regulation.

In conclusion, the adoption of AI in the justice system holds great promise for enhancing the efficiency, accuracy, and accessibility of legal processes. The transformative impact of AI spans both criminal and civil justice, offering innovative solutions to longstanding challenges. As AI technologies continue to evolve, their integration into the justice system must be guided by a commitment to ethical principles and a focus on improving justice outcomes for all stakeholders. The future of justice, augmented by AI, envisions a more proactive, fair, and efficient system poised to meet the complexities of modern legal landscapes.

CHAPTER III

ADOPTION OF ARTIFICIAL INTELLIGENCE IN THE JUSTICE SYSTEM: A COMPARATIVE ANALYSIS

3.1 INTRODUCTION

Across the world, AI entered the legal domain not very long ago, and integration of AI into the justice systems across jurisdictions has not been uniform. However, over such a short span, AI has managed to be a powerful tool ensuring access to justice and reshaping justice delivery through technology. The incorporation of AI in the legal field helps supplement human effort with machine intelligence, thereby increasing the overall efficiency of the justice system. AI has several functioning fundamentals, namely, Machine Learning (ML), Deep Learning (DL), Natural Language Processing (NLP), image recognition, speech recognition etc.,¹³⁹ The current AI tools in vogue mostly employ narrow AI and operate based on machine learning capabilities.¹⁴⁰ AI can be used to search for patterns, discover new insights, extract meaning from raw data, make predictions, and interact with people, machines and the physical environment.

AI involves programming for knowledge, reasoning, problem solving, perception, learning, planning and automating processes. The core part of AI is knowledge engineering, ML, machine perception and robotics.¹⁴¹ Over the years, several countries have started incorporating AI-enabled techniques to facilitate the justice administration process. Since the application of AI in the justice system is patchy across the world and is still in its nascent stages of development, several issues arise for deliberation with respect to the application of AI in the legal field. It includes the extent of application of AI in the legal process, the various AI tools used and the use cases in different jurisdictions. The scope of the present Chapter is to explore the adoption of AI technologies across the globe to understand the extent of AI applications in justice systems and the advantages and disadvantages of such applications. It involves a comparative analysis with the Indian scenario to elicit the most workable solutions for ensuring the efficient use of AI in the Indian justice system.

¹³⁹ Sagdeo, *supra* note 63 at 1216.

¹⁴⁰ What Is Artificial Intelligence? A.I. and Machine Learning Explained | Digital Trends, <https://www.digitaltrends.com/cool-tech/what-is-artificial-intelligence-ai/> (last visited Jun 1, 2024).

¹⁴¹ Centre of Excellence for Artificial Intelligence | National Informatics Centre, <https://www.nic.in/emergings/centre-of-excellence-for-artificial-intelligence/> (last visited Jun 5, 2024).

3.2 ARTIFICIAL INTELLIGENCE IN THE INDIAN JUSTICE SYSTEM

Celebrating 76 years of independence from the long-standing British colonial hegemony, India has come a long way, attaining a powerful economic and political identity amongst the global powers through remarkable technological innovation and adoption.¹⁴² The role of AI as cutting-edge technology in leveraging the potential of India as a digital superpower cannot be ignored. According to a recent report by Accenture, India has significant potential for AI-driven economic growth. By 2035, AI could add up to \$957 billion to India's economy, representing 15% of the current Gross Value Added (GVA). This increase is attributed to AI's ability to enhance labour productivity, automate complex tasks, and drive innovation across various sectors. The report emphasizes that to fully capitalize on this opportunity, India must improve its AI development indicators through collaborative efforts between policymakers, businesses, universities, and other stakeholders.¹⁴³

AI is perceived to have the potential to provide large incremental value to a wide range of sectors, primarily healthcare, agriculture, and smart mobility, including transport and logistics, retail, manufacturing, energy, smart cities, education and skilling.¹⁴⁴ In the context of law enforcement, in 2022, the Delhi Police has significantly enhanced its law enforcement capabilities by integrating AI, drones, and predictive policing strategies.¹⁴⁵ These technologies play a pivotal role in their Safe City initiative, enabling advanced surveillance through AI-driven CCTV systems, facial recognition software, and real-time drone monitoring.¹⁴⁶ Moreover, the implementation of AI tools like Hindi voice typing in their crime database reflects their commitment to improving operational efficiency and investigative processes across the capital.

India has also made significant strides in the justice system by being an early adopter of AI in the judiciary.¹⁴⁷ It is argued that the potential use cases for AI in the Indian

¹⁴² India's AI Journey: 75@75, INDIAAI, <https://indiaai.gov.in/research-reports/india-s-ai-journey-75-75> (last visited Jun 3, 2024).

¹⁴³ [accenture-ai-for-economic-growth-india.pdf](https://www.accenture.com/content/dam/accenture/final/a-com-migration/r3-3/pdf/pdf-153/accenture-ai-for-economic-growth-india.pdf), 2,3, <https://www.accenture.com/content/dam/accenture/final/a-com-migration/r3-3/pdf/pdf-153/accenture-ai-for-economic-growth-india.pdf> (last visited Jun 3, 2024).

¹⁴⁴ Arnab Kumar, *National Strategy for Artificial Intelligence*, 20.

¹⁴⁵ Delhi Police plans to integrate AI for crime control, INDIAAI, <https://indiaai.gov.in/news/delhi-police-plans-to-integrate-ai-for-crime-control> (last visited Jun 22, 2024).

¹⁴⁶ *Id.*

¹⁴⁷ Responsible AI for the Indian Justice System – A Strategy Paper, VIDHI CENTRE FOR LEGAL POLICY 2, <https://vidhilegalpolicy.in/research/responsible-ai-for-the-indian-justice-system-a-strategy-paper/> (last visited Jun 3, 2024).

justice system include improving administrative efficiency through task-specific narrow AI tools and decision-making in the judiciary through the use of AI tools for intelligent analytics and research and computational tools.¹⁴⁸ The present scenario of the legal profession in India is perceived to be predominantly driven by manual and traditional work modes.¹⁴⁹ India has so far made significant milestones in adopting AI into the justice system. Former CJI, Justice S A Bobde, while addressing The Supreme Court Bar Association's Constitution Day Event in 2019 stated, “We propose to introduce, if possible, a system of artificial intelligence. There are many things that we need to look at before we introduce it. We do not want to give the impression that this is ever going to substitute the judges.”¹⁵⁰ In his address at the launch of Supreme Court Vidhik Anuvaad Software (SUVAS), he highlighted the importance of incorporating AI to increase the efficiency of the judicial system in India.¹⁵¹ He focused on using AI tools in helping to automate existing repetitive non-judicial tasks and functions to reduce pendency, expedite judicial adjudication and create more time for Judges to resolve complex cases.¹⁵²

In the context of justice system, the reception of AI technologies into the judicial process is not uniform across India, but it is showing an upward trajectory. In a first, the Punjab and Haryana High Court in *Jaswinder Singh @ Jassi vs. State of Punjab and Anr.*¹⁵³ used ChatGPT, an AI chatbot, to gain insights on global bail jurisprudence for assaults involving cruelty. Justice Anoop Chitkara sought a broader perspective on whether bail should be granted in such cases. ChatGPT indicated that bail decisions depend on the crime's severity, the defendant's risk to the community, and other factors.¹⁵⁴ The Court clarified that this AI reference did not reflect its opinion on the case's merits. In the bail plea of the accused of a brutal assault leading to death, the

¹⁴⁸ *Id.* at 5.

¹⁴⁹ Can AI amend the face of the Indian Legal System?, INDIAAI, <https://indiaai.gov.in/article/can-ai-amend-the-face-of-the-indian-legal-system> (last visited Jun 3, 2024).

¹⁵⁰ Harpreet Kaur, *AI-Powered Indian Courtroom: ChatGPT a Boon or a Bane?*, 4 JUS CORPUS L.J. [601], 275,276 (2023).

¹⁵¹ ThePrint Team, “*AI Can Improve Judicial System's Efficiency*” — *Full Text of CJI Bobde's Constitution Day Speech*, THEPRINT (2019), <https://theprint.in/judiciary/ai-can-improve-judicial-systems-efficiency-full-text-of-cji-bobdes-constitution-day-speech/326893/> (last visited Jun 3, 2024).

¹⁵² Dr Karnika Seth, *Adoption of Virtual Courts in India*, SCC TIMES (Jan. 24, 2022), <https://www.sconline.com/blog/post/2022/01/24/virtual-courts-in-india/> (last visited Jun 3, 2024).

¹⁵³ *Jaswinder Singh @ Jassi vs. State of Punjab & Anr.*, 2023 LiveLaw (PH) 48.

¹⁵⁴ Sparsh Upadhyay, *In A First, Punjab And Haryana High Court Seeks ChatGPT's Response On Bail Jurisprudence Across The World*, (2023), <https://www.livelaw.in/news-updates/punjab-and-haryana-high-court-chatgpt-reply-bail-jurisprudence-world-224929> (last visited Jun 19, 2024).

Court denied bail, citing the crime's cruelty and his criminal history, which indicated a risk of continued criminal behaviour and absconding.¹⁵⁵

However, the Delhi High Court in *Christian Louboutin Sas & Anr. Vs. M/S The Shoe Boutique – Shutiq*¹⁵⁶ underscored the limitations of using ChatGPT in legal proceedings. In the suit filed by Christian Louboutin against Shutiq for imitating its 'red sole' shoes, Justice Prathiba M Singh stated that AI cannot replace human intelligence in adjudication due to concerns about its accuracy and reliability. The court observed that the response of a 'Large Language Model based chatbots' such as ChatGPT depends upon a host of factors including the nature and structure of query put by the user and thus, there are possibilities of incorrect responses, fictional case laws, imaginative data etc. being generated.¹⁵⁷ The judge stated that ChatGPT cannot be used as a basis for adjudicating legal or factual issues in a court of law, as its responses, accompanied by disclaimers to seek additional information, indicated its limitations in this regard.¹⁵⁸

With teeming litigation and an inadequate number of judges to decide the cases, AI could be of help in several ways, especially in addressing the delay in rendering justice. However, in the same context, the High Court of Calcutta opined: "The human intelligence cannot be equated with the artificial intelligence; in judicial system when an approach is made to a legal expert, he has to collate the documents and also make his own assessment on the probability of success obviously upon the application of law relating thereto. Such assessment takes time and cannot be expected to be used on a click of the bottom, as the artificial intelligence does." The use cases of AI in the Indian judicial system, which is spearheaded by the Supreme Court will be discussed in detail as follows:

3.2.1 THE E-COURTS MISSION MODE PROJECT

The E-Courts Mission Mode Project, initiated under the 2005 National Policy and Action Plan for ICT in the Indian Judiciary, aims to modernize India's judicial system

¹⁵⁵ *Id.*

¹⁵⁶ *Christian Louboutin Sas & Anr. Vs. M/S The Shoe Boutique – Shutiq*, 2023 LiveLaw (Del) 755.

¹⁵⁷ Nupur Thapliyal, *Delhi High Court Refuses To Rely On ChatGPT Responses In IPR Suit, Says AI Can't Substitute Human Intelligence In Adjudicatory Process*, (2023), <https://www.livelaw.in/top-stories/delhi-high-court-chatgpt-for-legal-research-artificial-intelligence-human-intelligence-236285> (last visited Jun 19, 2024).

¹⁵⁸ *Id.*

through ICT. Funded by the Department of Justice, the project seeks to enhance judicial productivity and transparency, making justice delivery more efficient, accessible, and affordable.¹⁵⁹ Phase-I (2007-2015) focused on computerizing District Courts, establishing IT infrastructure, and training judicial staff, while Phase-II (from 2014) expanded these efforts to include new courts and integrated cloud computing, video conferencing, and open-source software.¹⁶⁰ This phase also emphasized service delivery enhancements such as mobile apps, online document access, ePayment gateways, and the National Judicial Data Grid, promoting greater transparency and stakeholder convenience.

3.2.2 INITIATIVES BY THE SUPREME COURT OF INDIA

Between 2022 to 2023, several key initiatives were taken under the leadership of the Chief Justice of India, Hon'ble Justice D Y Chandrachud, to transform the Indian judiciary using Information & Communication Technology (ICT) initiatives with the objective of enhancing efficiency and access to justice. The hybrid hearing system was introduced to ensure that advocates and parties can choose to appear either in virtual mode or physical mode before the Court. The Supreme Court of India's flagship case management software, the Integrated Case Management Information System (ICMIS) continues to be upgraded with the latest technological advancements in databases. The SC has launched the e-SCR (Supreme Court Reporter) system, a portal that allows fast and easy searching of judgments by public by using the "freetext" search engine. Enhancing access to justice, at present more than 36000 SC judgments are available on e-SCR. More than 11000 in Hindi and together more than 1700 judgments have been translated in other regional languages. On January 02, 2023 the Court launched the Advocates' Online Appearance Portal that has empowered Advocates-on-Record to file appearance slips electronically without having to physically visit the Registry. The E-filing 2.0 has been launched, which is an upgraded version of its predecessor (e-Filing 1.0) aimed at providing ease in the business of electronic filing, defects notification, curing of defects, processing the documents for scrutiny to all the stakeholders, namely, Advocates-on-Record, Party-in-Person and the registry. On 12th May, 2023, Hon'ble the Chief Justice of India inaugurated the Supreme Court of India's e-Sewa Kendra a

¹⁵⁹ About Us - eCourt India Services, https://ecourts.gov.in/ecourts_home/static/about-us.php (last visited Jun 3, 2024).

¹⁶⁰ Official Website of e-Committee, Supreme Court of India | India, <https://ecommitteesci.gov.in/> (last visited Jun 5, 2024).

one-stop citizen service centre where any Advocate and member of public can walk in to avail a variety of e-services relating to the Court. To enhance accessibility and transparency, Chief Justice of India, Dr. Justice D.Y. Chandrachud, introduced automatic AI-based transcription of arguments before the Constitutional Benches in February 2023. These transcripts are available on the Court's website for public access.¹⁶¹ As a stepping stone to build futuristic courts, the Supreme Court now operates paperlessly, supported by a digital library accessible via web browsers. Advanced digital video conferencing enables seamless communication, while LED video walls and document cameras enhance courtroom presentations and real-time sharing of evidence.

3.2.3 AI COMMITTEE OF SUPREME COURT OF INDIA

In 2019, the Supreme Court of India constituted an Artificial Intelligence Committee to explore and implement AI technologies in the judiciary. The committee, chaired initially by Chief Justice of India (CJI) SA Bobde, aimed to enhance judicial efficiency and address the significant backlog of cases. The Committee has spearheaded initiatives to integrate AI technologies into the judicial system.¹⁶² Key applications include developing SUVAS for translating legal documents between English and vernacular languages, aiming to improve accessibility across linguistic barriers and another significant tool, SUPACE, which supports legal research and enhances court efficiency, which is already discussed in the third Chapter. These efforts form part of broader modernization goals to tackle case backlogs and resource management challenges.

3.2.4 THE NATIONAL JUDICIAL DATA GRID

National Judicial Data Grid (NJDG), a flagship project implemented under the aegis of the e-Committee Supreme Court of India, is a system for monitoring pendency and disposal of the cases in courts all over India. NJDG provides a comprehensive database of orders, judgements, and case details of Indian Judiciary. With the inclusion of the Supreme Court of India's case data, NJDG now offers unique, single-window access to comprehensive information on cases and courts across all levels, from Taluka courts to the Supreme Court, all in a searchable format. Visitors to the NJDG portal can also

¹⁶¹ https://main.sci.gov.in/vernacular_judgment

¹⁶² Enhancing the efficiency of India's courts using AI, INDIAAI (2021), <https://indiaai.gov.in/case-study/enhancing-the-efficiency-of-india-s-courts-using-ai> (last visited Jun 17, 2024).

access a wide range of additional information. This includes analytical and comparative statistics on case filings, pendency, and disposals, data on various types of Benches and corams, and details of both registered and unregistered cases. The portal transparently provides age-wise breakdowns of cases as well. The NJDG website features distinct dashboards, such as 'At a Glance', 'Pending Dashboard', and 'Disposed Dashboard', to help users easily navigate and find the necessary information.¹⁶³

3.2.5 SUPREME COURT VIDHIK ANUVAAD SOFTWARE

SUVAS stands for Supreme Court Vidhik Anuvaad Software which was introduced by the Supreme Court of India to promote regional languages in judicial procedure on 26th November, 2019.¹⁶⁴ SUVAS has been developed with technical support from Ministry of Electronics and Information Technology Government of India aided by experts from IIT. It is a machine assisted translation tool trained by AI. SUVAS has been specifically designed for the judicial domain and is capable of translating English Judicial documents, Orders or Judgments into nine vernacular languages scripts and vice versa.¹⁶⁵ The languages are Hindi, Kannada, Tamil, Telugu, Punjabi, Marathi, Gujarati, Malayalam, Bengali, Urdu This is the trailblazer for AI in the Indian judicial domain. SUVAS has been developed as a path breaking initiative with a view to enable common people of India to understand the judgments of Supreme Court in easy manner in local languages. The work covers translating judgments related to cases arising under the appellate jurisdiction of the Supreme Court of India.¹⁶⁶

3.2.6 SUPREME COURT PORTAL FOR ASSISTANCE IN COURT'S EFFICIENCY

On April 6th 2021, then Chief Justice of India S.A. Bobde introduced the Supreme Court Portal for Assistance in Court's Efficiency (SUPACE). While launching the Court's Artificial Intelligence Portal, the CJI called the system a 'perfect blend of human

¹⁶³ NJDG-National Judicial Data Grid, https://njdg.ecourts.gov.in/scnjdg/?p=home/footerlinks/ab&escr_flag=&app_token= (last visited Jun 3, 2024).

¹⁶⁴ ACTION PLAN FOR SIMPLE, ACCESSIBLE, AFFORDABLE AND SPEEDY JUSTICE, <https://pib.gov.in/pib.gov.in/Pressreleaseshare.aspx?PRID=1947490> (last visited Jun 5, 2024).

¹⁶⁵ press release for law day celebration.pdf, <https://main.sci.gov.in/pdf/Press/press%20release%20for%20law%20day%20celebratoin.pdf> (last visited Jun 5, 2024).

¹⁶⁶ From the answer given by, the then Minister Of Law And Justice, Communications And Electronics & Information Technology (Shri Ravi Shankar Prasad) to the unstarred question no.587 raised by Dr. Vikas Mahatmae in relation to the launch of SUVAS app in Rajya Sabha, on 6th February 2020.

intelligence and machine learning' and 'a hybrid system', which works together with human intelligence.¹⁶⁷ It is a machine learning-powered portal to manage the vast amount of data from various cases. This hybrid system combines human intelligence with machine learning, creating an effective partnership. The AI tool is designed solely to process information and provide it to judges without taking part in the decision-making process.¹⁶⁸ It can augment the efficiency of legal researchers and judges to work on cases, extract relevant information, read case files, manage teamwork and draft case documents. It can find facts, issues and points of law from thousands of documents in a matter of seconds.¹⁶⁹ The portal can be accessed with a login ID and password. This portal provides a summary of all cases in the database at a glance, displaying files and documents for easy access. It also shows task details, progress updates, and the people involved. A universal search function allows users to scan through all database files.¹⁷⁰

3.2.7 THE JUDGMENT INFORMATION SYSTEM

The Judgment Information System (JUDIS) consists of the Judgments of the Supreme Court of India and several High Courts. In the case of the Supreme Court all reported Judgments since 1950 till date are available. The Web Sites of the Supreme Court and High Courts provide Litigant centric dynamic information like Judgments, Causelists, Case status, etc. Daily Orders of the Supreme Court of India and many High Courts are made available as soon as the orders are signed by the court. Daily Orders supports free text search which will enable in retrieving all cases containing the group of words mentioned in the query. Case Status site provides the latest status of a case either pending or disposed by the Supreme Court or any other High Court in the country. The required information is derived from the databases of the concerned courts. The case orders are in pdf format and attempt has been made to do Text Classification and Text Summarisation. Text classification allows the machine to learn with a few labeled case outcomes and then the system can read a fresh case order and inform whether the case

¹⁶⁷ Srishti Ojha, *Won't Let Artificial Intelligence Do Decision Making; Judges' Autonomy & Discretion Will Be Retained : CJI Bobde*, <https://www.livelaw.in/top-stories/supreme-court-artificial-intelligence-portal-supace-chief-justice-sa-bobde-172220> (last visited Jun 5, 2024).

¹⁶⁸ Justice Raja Vijayaraghavan, *Introduction of Artificial Intelligence in the Judicial System*, 35.

¹⁶⁹ Samiksha Mehra, *FIVE Notable Applications of Legal AI in India*, INDIAAI, <https://indiaai.gov.in/article/five-notable-applications-of-legal-ai-in-india> (last visited Jun 5, 2024).

¹⁷⁰ Samiksha Mehra, *AI Is Set to Reform Justice Delivery in India*, INDIAAI, <https://indiaai.gov.in/article/ai-is-set-to-reform-justice-delivery-in-india> (last visited Jun 5, 2024).

has been accepted or rejected. Text Summarisation helps to get the most useful information extracted from the order.¹⁷¹

3.3 ARTIFICIAL INTELLIGENCE IN THE US JUSTICE SYSTEM

In the US, the Department of Justice (DOJ), as the chief federal law enforcement agency, plays the focal role in addressing the applications and implications of AI within the justice system. DOJ seeks to ensure that developments in AI are explored the best to ensure fairness, efficiency and effectiveness of the judicial system while safeguarding civil rights and reinforcing public trust.¹⁷² The key components of the DOJ involved in AI adoption in the US justice system are as follows:

i. Civil Rights Division

The civil rights division is committed to confronting issues that lie at the intersection of AI and civil rights.¹⁷³

ii. Criminal Division

The criminal division, particularly through its Computer Crime and Intellectual Property Section (CCIPS), handles AI-related matters by enforcing laws such as the Digital Millennium Copyright Act (DMCA) and the Computer Fraud And Abuse Act (CFAA). CCIPS prosecutes cases where AI is misused for unauthorized access to computers and intellectual property violations. CCIPS effectively guides federal prosecutors in applying these laws to AI technologies, thereby ensuring effective legal actions.¹⁷⁴

iii. Office of Legal Policy (OLP)

OLP develops policies to address the legal challenges and opportunities presented by AI.

iv. National Institute of Justice (NIJ)

¹⁷¹ Artificial Intelligence, https://ai.nic.in/AI/Judiciary_About (last visited Jun 5, 2024).

¹⁷² Department of Justice | About DOJ | United States Department of Justice, (2014), <https://www.justice.gov/about> (last visited Jun 6, 2024).

¹⁷³ Civil Rights Division | Artificial Intelligence and Civil Rights, (2024), <https://www.justice.gov/crt/ai> (last visited Jun 6, 2024).

¹⁷⁴ Letter from Department of Justice Criminal Division.pdf, <https://www.copyright.gov/1201/2024/USCO-letters/Letter%20from%20Department%20of%20Justice%20Criminal%20Division.pdf> (last visited Jun 6, 2024).

the research, development and evaluation agency of the U.S. Department of Justice¹⁷⁵ NIJ conducts research on the impact and potential of AI in the justice system.

The National Institute of Justice (NIJ) is committed to realizing the full potential of AI to promote public safety and reduce crime. Research funded by the NIJ is pioneering the use of AI to meet various criminal justice needs. This includes identifying individuals and their actions in videos connected to criminal activity or public safety, conducting DNA analysis, detecting gunshots, and forecasting crime trends. The U.S. Department of Transportation is working to enhance public safety by researching, developing, and testing automated traffic accident detection systems based on video footage. These systems aim to ensure safe and efficient commuter traffic under various conditions, including different locations, weather, lighting, and traffic scenarios. In medicine, AI algorithms are being utilized to interpret radiological images, which could significantly impact the criminal justice and medical examiner fields by aiding in the determination of cause and manner of death. AI's application extends to forensic science as well, where it is being explored for tasks such as DNA analysis. Additionally, AI is rapidly becoming a crucial tool in fraud detection as well.¹⁷⁶

On May 3, 2016, the White House unveiled initiatives to promote public discussion on AI, identify associated challenges and opportunities, enhance governmental use of AI, and prepare for its potential benefits and risks. This led to the development of a national strategy for AI research and development in areas like manufacturing, logistics, finance, transportation, agriculture, marketing, communications, science and technology.¹⁷⁷

Recently, The U.S. Justice Department appointed Jonathan Mayer, a technology and law expert from Princeton University, as its first AI officer on February 22, 2024. Mayer will advise on integrating AI into law enforcement and the criminal justice system. The move comes as the department grapples with both the potential benefits and risks of AI. Mayer will lead efforts to ensure responsible AI use and recruit more tech experts.

¹⁷⁵ About the National Institute of Justice | National Institute of Justice, (2022), <https://nij.ojp.gov/about/about-nij> (last visited Jun 5, 2024).

¹⁷⁶ Christopher Rigano, *supra* note 1 at 2.

¹⁷⁷ *Id.* at 6.

AI has significant role to play in the context of criminal justice, especially assisting judges in sentencing decisions. Once a person is convicted, either through a trial or a plea deal a judge determines the prison sentence. This process is complex and nuanced, involving several inputs¹⁷⁸: mandatory minimum and maximum sentences set by Congress, guidelines from the US Sentencing Commission, and presentence reports containing statements from victims, the defendant, and attorneys. Judges also consider mitigating factors such as the defendant's criminal history, expression of remorse, nature of the crime, and mental health history. The result is a combination of strict legal frameworks, specialized legal reasoning, and subjective evaluations of the defendant's character. The purpose of assessing a defendant's character is to predict their likelihood of reoffending. AI has the potential to transform this process by enhancing both speed and accuracy. Judges, even with clerks, spend a significant amount of time reviewing case histories and making decisions. AI, however, can analyze vast datasets quickly, providing statistical predictions of recidivism based on similar cases.¹⁷⁹

In the US, AI has been increasingly utilized to develop risk assessment tools. An example is the Strategic Subject List (SSL) implemented in Chicago, which aims to predict individuals who are at a high risk of involvement in gun violence.¹⁸⁰ COMPAS, an AI-enabled risk assessment tool, is employed in the US to assist judges in sentencing decisions in criminal cases to predict the recidivism risk of offenders.

3.3.1 CORRECTIONAL OFFENDER MANAGEMENT PROFILING FOR ALTERNATIVE SANCTIONS (COMPAS)

Correctional Offender Management Profiling for Alternative Sanctions (COMPAS) is a fourth-generation automated decision-support software package that integrates risk and needs assessment with several other domains, including sentencing decisions, treatment and case management, and recidivism outcomes.¹⁸¹ It considers various

¹⁷⁸ Kieran Newcomb, *The Place of Artificial Intelligence in Sentencing Decisions*, INQUIRY JOURNAL (2024), <https://www.unh.edu/inquiryjournal/blog/2024/03/place-artificial-intelligence-sentencing-decisions> (last visited Jun 5, 2024).

¹⁷⁹ Andrew Goudsward, *US Justice Dept Names First AI Officer as New Technology Challenges Law Enforcement*, REUTERS, Feb. 22, 2024, <https://www.reuters.com/world/us/us-justice-dept-names-first-ai-officer-new-technology-challenges-law-enforcement-2024-02-22/> (last visited Jun 5, 2024).

¹⁸⁰ Responsible-AI-in-the-Indian-Justice-System-A-Strategy-Paper.pdf, 9, <https://vidhilegalpolicy.in/wp-content/uploads/2021/04/Responsible-AI-in-the-Indian-Justice-System-A-Strategy-Paper.pdf> (last visited Jun 3, 2024).

¹⁸¹ Tim Brennan, William Dieterich & Beate Ehret, *Evaluating the Predictive Validity of the COMPAS Risk and Needs Assessment System*, 36 CRIM. JUST. & BEHAVIOR 21, 22,23 (2009).

criminogenic factors and insights from meta-analytic studies on recidivism. COMPAS offers automated scoring to help correctional agencies make decisions on placement, managing offenders, and planning treatments.¹⁸² COMPAS was developed empirically with a focus on predictors known to affect recidivism and includes dynamic risk factors. It provides information on various validated risk and needs factors designed to aid in correctional intervention to decrease the likelihood of reoffending.¹⁸³

COMPAS assesses recidivism risk through a structured process involving several scales. The process begins with the collection of comprehensive data on an offender through interviews and questionnaires. This data encompasses a variety of criminogenic factors and personal characteristics, which are input into the COMPAS system. The system uses automated algorithms to score responses across multiple scales, each reflecting different domains such as criminal involvement, substance abuse, social support, and more. These scales include both higher-order scales like the General Recidivism Risk Scale (GRRS) and the Violent Recidivism Risk Scale (VRRS), as well as specific ones tailored for particular groups, such as the Women's Risk and Needs Assessment (WRNA) scales.¹⁸⁴ Following are the scales used in COMPAS core¹⁸⁵:

COMPAS utilizes a comprehensive set of scales to assess various risk factors associated with criminal behavior. These scales include Criminal Involvement, which focuses on prior arrests and convictions; history of violence, which examines past violent offenses; and history of noncompliance, assessing failures to meet legal obligations. Additionally, the assessment considers factors such as criminal associates, substance abuse, financial problems and poverty, and occupational and educational resources. It also evaluates family crime, high crime neighborhoods, boredom and lack of constructive leisure activities, residential instability, social isolation versus social support, criminal attitude, and antisocial personality traits.¹⁸⁶ These scales collectively provide a detailed profile of an offender's background and circumstances, aiding in the

¹⁸² *Id.* at 21.

¹⁸³ Practitioners_Guide_COMPASCore_121917.pdf, 2, https://cjdata.tooltrack.org/sites/default/files/2018-10/Practitioners_Guide_COMPASCore_121917.pdf (last visited Jun 5, 2024).

¹⁸⁴ *Id.* at 2–4.

¹⁸⁵ *Id.* at 8–10.

¹⁸⁶ Practitioners_Guide_COMPASCore_121917.pdf, *supra* note 183.

prediction of recidivism risk and informing tailored intervention strategies within the criminal justice system.

Each scale provides valuable insights into risk factors associated with criminal behaviour, aiding decision-making within the criminal justice system. Once the individual scale scores are generated, COMPAS combines these scores using weighted algorithms to calculate overall risk scores for different types of recidivism, such as general, violent, and failure to appear. These risk scores are categorized into risk levels (low, medium, high) based on predefined thresholds. The final output is a comprehensive risk profile for the offender, highlighting key risk and need areas. This profile is then reviewed by correctional officers and other professionals, who may adjust the recommendations based on additional context or professional judgment. The process concludes with the implementation of informed correctional decisions, including supervision levels and treatment plans, aimed at mitigating recidivism risk and supporting offender rehabilitation.¹⁸⁷

COMPAS includes two primary risk models¹⁸⁸:

1. General Recidivism Risk: Assesses the overall likelihood of reoffending.
2. Violent Recidivism Risk: Focuses specifically on the risk of violent reoffending.

COMPAS Core and COMPAS Reentry are two different tools within the broader COMPAS system, each designed for specific purposes and phases of the correctional process. While COMPAS Core is a comprehensive risk and needs assessment tool used to evaluate offenders' likelihood of recidivism and to inform decisions related to their management and treatment within the correctional system, COMPAS Reentry is specifically tailored for assessing the needs and risks of offenders who are transitioning from incarceration back into the community.¹⁸⁹ COMPAS was first developed in 1998 and has been periodically revised to incorporate advances in criminological knowledge and correctional practices. The updates are informed by results from norm studies and recidivism studies conducted in various criminal justice settings. These revisions ensure

¹⁸⁷ *Id.* at 9–10.

¹⁸⁸ *Id.* at 2.

¹⁸⁹ *Id.*

that COMPAS remains aligned with emerging best practices and technological advances.¹⁹⁰

3.3.2 AI USE CASES IN THE DEPARTMENT OF JUSTICE

The Department of Justice (DOJ) has incorporated AI and machine learning technologies to enhance various components' operational efficiency and effectiveness. These technologies span a wide range of applications, from natural language processing to computer vision, facilitating better decision-making, streamlined processes, and improved public safety outcomes. The DOJ utilizes a diverse array of artificial intelligence (AI) applications across its agencies to enhance operational efficiencies and decision-making processes as follows:

For instance, the Drug Enforcement Administration (DEA) employs AI/ML techniques through its Special Testing and Research Laboratory to classify the geographical origins of heroin and cocaine samples, ensuring accurate anomaly detection and result validation since October 1, 2014.¹⁹¹ This capability aids in targeting drug enforcement efforts effectively. The Federal Bureau of Investigation (FBI) leverages AI in multiple initiatives. The Threat Intake Processing System (TIPS) applies natural language processing (NLP) models to assess the value of incoming tips, predicting their relevance for actions like referrals to partner agencies or addressing threats to life. Implemented on September 5, 2019, this system manages the vast volume of social media posts by filtering only those exceeding a specified threshold, ensuring efficient resource allocation. Within the DOJ's Tax Division, the Privileged Material Identification system employs Text IQ's unsupervised machine learning algorithms to detect attorney-client privileged information in documents. Launched on January 1, 2021, this tool supports sensitive legal processes with enhanced accuracy and efficiency.¹⁹²

The Office of Records Management Policy (ORMP) under the Justice Management Division (JMD) uses AI and natural language processing (NLP) tools to streamline the consolidation of departmental records schedules. Since September 6, 2020, this system analyzes textual similarities across records, significantly reducing manual review

¹⁹⁰ *Id.*

¹⁹¹ 2023 Agency Inventory of AI Use Cases - DOJ, 1, <https://www.justice.gov/usdoj-media/open/media/1305831/dl?inline> (last visited Jun 6, 2024).

¹⁹² *Id.*

efforts and facilitating informed decision-making for records managers.¹⁹³ Additionally, the Office of Justice Programs (OJP) utilizes AI-supported natural language processing techniques to screen and evaluate research abstracts for crime solutions. This initiative, implemented on September 1, 2022, enhances the efficiency of program rating processes by automating the identification of relevant research findings.¹⁹⁴

Moreover, within the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF), technologies like Vound Intella¹⁹⁵ and X-Ways Forensics¹⁹⁶ apply AI for data parsing and object recognition from suspect devices, supporting forensic investigations effectively. These tools, powered by image categorization and object detection techniques, assist ATF agents in analyzing large volumes of digital evidence to uncover critical insights. Furthermore, AI plays a crucial role in enhancing law enforcement capabilities through initiatives like ShotSpotter, enabling the rapid identification and localization of suspected gunfire incidents across ATF-managed jurisdictions.¹⁹⁷ These DOJ AI initiatives underscore the department's commitment to leveraging cutting-edge technologies to strengthen national security, improve operational efficiencies, and enhance decision-making across diverse legal and enforcement domains. Continuous monitoring and auditing mechanisms ensure these AI systems operate effectively and ethically within established guidelines, maintaining high standards of performance and accountability.

3.4 ARTIFICIAL INTELLIGENCE IN THE UK JUSTICE SYSTEM

Hon'ble Sir Geoffrey Vos¹⁹⁸, in one of his speeches¹⁹⁹ said that by 2040, the use of AI and other digital tools will become a core part of the UK's justice system.²⁰⁰ He envisioned that by 2040, individuals seeking justice will utilize an integrated online digital justice system. This system will feature pre-action dispute resolution portals for

¹⁹³ *Id.*

¹⁹⁴ *Id.*

¹⁹⁵ *Id.* at 2.

¹⁹⁶ *Id.*

¹⁹⁷ *Id.*

¹⁹⁸ The Master of the Rolls and Head of Civil Justice in England and Wales appointed on 11 January 2021.

¹⁹⁹ Speech delivered by Sir Geoffrey Vos titled "*The Future for Dispute Resolution: Horizon Scanning*" in

The Society of Computers and Law. Sir Brian Neill Lecture 2022, Online on Thursday 17 March 2022.

²⁰⁰ Technology to become embedded in UK justice system by 2040, senior judge suggests, PINSENT MASONS (2024), <https://www.pinsentmasons.com/out-law/news/technology-become-embedded-uk-justice-system-2040-senior-judge-suggests> (last visited Jun 7, 2024).

various types of disputes, supported by an online court-based dispute resolution system applicable across civil, family, and tribunal cases.²⁰¹ According to him, a key question for the next 20 years will be the extent to which artificial intelligence can or should be integrated into the digital dispute resolution process. Public confidence in the process may be the limiting factor. Sir Geoffrey Vos hopes that the new digital dispute resolution system will attract as much public confidence as the traditional justice system. While there is no reason to assume it will not, many lawyers and others are concerned about whether public confidence will endure if judicial decisions are made by AI.²⁰²

His response to this crucial question is that public confidence will be maintained, provided people understand which decisions are made by machines and which are not, and that there is always the option to challenge an AI-driven decision before a human judge. He suggests that minor decisions, such as extending time limits, could be handled by AI. Additionally, Vos advocates for AI-driven integrated (alternative) dispute resolution processes, where parties receive regular, logical proposals for resolving their disputes. This type of AI intervention is expected to grow rapidly.²⁰³

Written evidence from Dr Miri Zilka²⁰⁴, Dr Adrian Weller²⁰⁵ and Detective Sergeant Laurence Cartwright²⁰⁶ to the Justice and Home Affairs Committee²⁰⁷ appointed by the House of Lords to examine the integration of AI tools in the UK criminal justice system has laid out some categories of tools used in the justice system.²⁰⁸ They focused on specific technologies that are deployed throughout the criminal justice system in the UK and classified them into the following categories.

- i. Data Infrastructure

Data infrastructure includes software and tools for recording, storing, and organizing data, with capabilities for filtering and basic search queries. Advanced features like

²⁰¹ *Id.*

²⁰² Sir Geoffrey Vos, *The Future for Dispute Resolution: Horizon Scanning*, 12 (2022).

²⁰³ *Id.* at 12,13.

²⁰⁴ Research Associate in Machine Learning at the University of Cambridge

²⁰⁵ Principal Research Fellow in Machine Learning at the University of Cambridge

²⁰⁶ Data Analytics lead at Sussex Police

²⁰⁷ The Justice and Home Affairs Committee was appointed by the House of Lords on 14 April 2021 to consider justice and home affairs, including the domestic criminal justice system, and international cooperation in respect of criminal justice, civil justice, migration and asylum.

²⁰⁸ JUSTICE AND HOME AFFAIRS COMMITTEE, *Technology Rules? The Advent of New Technologies in the Justice System*, 8.

visualizations, statistical analyses, risk scores, and predictions belong to a higher category.

ii. Data Analysis

Data analysis involves software and tools used to examine data and generate insights, such as custom dashboards, visualizations, and statistical analyses, excluding machine learning, predictions, and automated risk scores.

iii. Risk Prediction

Risk prediction encompasses tools for forecasting future risks based on past data, divided into two subcategories:

- a. Spatiotemporal Crime Prediction: Estimates the volume, location, and timing of future crimes using past spatial and temporal data.
- b. Individual Crime Risk Prediction: Estimates the risk of an individual reoffending based on their past behaviour and personal attributes, using both automated and manual tools.

Several technologies are also used in the criminal justice system, including facial recognition technologies, gait identification, number plate recognition, speaker identification, speech identification, lip-reading technologies, gunshot detection algorithms and social media monitoring.²⁰⁹

The various tools that come under the above categorisation are briefly explained as follows:

3.4.1 AI TOOLS USED BY LAW ENFORCEMENT AGENCIES

In the UK, all of the police forces in England and Wales do not use just one main tool for gathering data. When incidents are reported, and initial responses are managed, many of them turn to a platform called STORM.²¹⁰ And if what is reported turns out to be a crime or something recordable, they use another system called Niche RMS²¹¹ to keep track of it. These systems ensure that the data collected about crimes and incidents

²⁰⁹ Dr Miri Zilka, Detective Sergeant Laurence Cartwright, Dr Adrian Weller, Written evidence NTL0040, 2, <https://committees.parliament.uk/writtenevidence/39076/pdf/> (last visited Jun 7, 2024).

²¹⁰ STORM is a software from Sopra Steria designed for emergency services, see <https://www.soprasteria.co.uk/industries/public-safety>

²¹¹ Niche RMS is a private Canadian software company, see <https://nichirms.com/>

meets the rigorous standards set by the Home Office. Under Data Analysis, one tool is Mapinfo used by West Midlands Police to use crime and incident data to map where crimes occur so police can monitor these 'crime hotspots'. For future crime prediction, Patrol-Wise is an algorithm developed by University College London (UCL) in a research collaboration with West Yorkshire Police to predict burglaries on a street-by-street level.²¹² iHotSpot is an AI-based predictive analytics engine designed to forecast daily crime incident hotspots. Developed by SpaceTimeAI, a spin-out from UCL's SpaceTimeLab, this system is integrated into the London Metropolitan Police as part of a research collaboration funded by the Engineering and Physical Sciences Research Council (EPSRC).²¹³ The Evidence-Based Investigative Tool (EBIT) is used by Kent Police in the UK to predict the likelihood of solving minor, non-domestic assault, and public order offences. This tool employs a logistic regression model to assess solvability, followed by a two-step case review. Using custom software developed by Kent Police, the EBIT user answers eight questions, which then leads to one of three recommendations: proceed with further investigation, close the case pending more evidence, or have the case reviewed further by a supervisor.²¹⁴ Under individual crime risk prediction, not all assessment tools rely on computational tools. Two manual risk assessment tools used nationwide by police forces are THRIVE and DASH. THRIVE stands for Threat, Harm, Risk, Investigation Opportunities, Vulnerability of the victim, and Engagement level needed to resolve the issue. It is used to determine the priority level of an incident.²¹⁵ DASH stands for Domestic Abuse, Stalking, and Harassment. This checklist tool is used to evaluate the risk in cases involving domestic abuse, stalking, harassment, and so-called honour-based violence.²¹⁶ The Gangs Violence Matrix (GVM) is a dataset maintained by the Metropolitan Police that includes information on suspected gang members in London. This intelligence tool aims to

²¹² I predict a break-in: Yorkshire police use cutting-edge technology to deter burglars, <https://www.yorkshirepost.co.uk/news/crime/i-predict-a-break-in-yorkshire-police-use-cutting-edge-technology-to-deter-burglars-595904> (last visited Jun 7, 2024).

²¹³ Cheng T, Bowers K, Longley P, Shawe-Taylor J, Davies T, Rosser G, et al., *Crime, Policing and Citizenship (CPC) - Space-Time Interactions of Dynamic Networks*, (2016).

²¹⁴ Kent McFadzien et al., *The Evidence-Based Investigative Tool (EBIT): A Legitimacy-Conscious Statistical Triage Process for High-Volume Crimes*, 4 CAMB J EVID BASED POLIC 218 (2020).

²¹⁵ Threat, harm, risk, investigation, vulnerability and engagement (THRIVE) model, HIS MAJESTY'S INSPECTORATE OF CONSTABULARY AND FIRE & RESCUE SERVICES, <https://hmicfrs.justiceinspectorates.gov.uk/glossary/threat-harm-risk-investigation/> (last visited Jun 7, 2024).

²¹⁶ Domestic Abuse, Stalking, Harassment and Honour-Based Violence (DASH) risk identification, assessment and management model, HIS MAJESTY'S INSPECTORATE OF CONSTABULARY AND FIRE & RESCUE SERVICES, <https://hmicfrs.justiceinspectorates.gov.uk/glossary/dash/> (last visited Jun 7, 2024).

reduce gang-related violence, protect those exploited by gangs, and prevent the loss of young lives. Each person in the matrix receives a harm score and a victim score, indicating their likelihood of causing or receiving harm, respectively. These scores are categorized as Red, Amber, or Green.²¹⁷ West Yorkshire Police uses an Integrated Offender Management (IOM) software called Corvus IOM Case.²¹⁸ The system pulls data from various sources, including STORM and Niche RMS, to analyze intelligence, crimes, arrests, and substance misuse. This data is used to generate an individualized score indicating a person's likelihood of reoffending. Different types of crimes receive different scores, and the Risk of Re-Offending Cohort scores are displayed categorically as low, medium, or high.

Another significant crime risk prediction tool is the Harm Assessment Risk Tool (HART) which was developed collaboratively by statistical experts from the University of Cambridge and Durham Constabulary. This tool assists in determining whether a suspect might be eligible for deferred prosecution, known as Checkpoint, within Durham Constabulary. The primary aim of this model is to help identify offenders for whom a deferred prosecution might be suitable, with the ultimate goal of understanding which interventions are most effective in steering offenders away from criminal behavior. In the custody environment, various decisions are made, including police bail, no further action, deferred prosecution, charging suspects, and bail decisions post-charge. Custody officers must consider multiple factors in this decision-making process, with HART being one of the factors mandated by both the Policing and Crime Act 2017 and the Bail Act 1976.

HART assesses the risk of reoffending over a two-year period, categorizing it as either serious or non-serious. However, it's important to note that the custody officer's decision is not solely determined by the HART forecast; it is one of many factors taken into consideration. Initial use of HART required custody officers to make their own risk predictions, which revealed that officers tend to avoid making extreme predictions, favoring moderate risk assessments. Only 55.5% of the time did the officers' predictions match those of the HART model. This disparity highlights the differences between human and algorithmic assessments. It is designed for cases where complex risk

²¹⁷ How the gangs violence matrix works, <https://www.met.police.uk/police-forces/metropolitan-police/areas/about-us/about-the-met/gangs-violence-matrix/> (last visited Jun 7, 2024).

²¹⁸ The tool is provided by Bluestar, a UK based company, see <https://bluestarsoftware.co.uk/products/offender-management-iom/>

assessments are needed, with the goal of providing a fair and reliable tool to support decision-making rather than making decisions outright.

HART bases its predictions on historical data and utilizes random forest forecasting, a machine learning technique, to assist custody officers in making decisions about whether suspects are at low, moderate, or high risk of committing additional crimes within a two-year timeframe.²¹⁹ It uses 34 different predictors, most of which focus on the offender's past criminal behaviour. However, it only uses data from within Durham Constabulary, excluding data from other agencies, police forces, or national databases. This limitation means HART is intended to aid, not replace, human judgment in the criminal justice system.²²⁰ Custody officers still retain discretion and can override the model's predictions with their own knowledge and additional data. HART's decision-making process involves over 4.2 million interdependent decision points within its tree structure, making it a complex and sophisticated tool.²²¹ However, it remains a supportive tool for human decision-makers, rather than a definitive solution.

3.4.2 AI TOOLS USED BY THE CROWN PROSECUTION SERVICE AND THE COURTS

The Crown Prosecution Service (CPS) and the courts are integral to the criminal justice system, focusing on prosecuting offenders and determining appropriate sentences. The CPS prosecutes criminal cases that have been investigated by the police and other investigative organisations in England and Wales.²²² The CPS is responsible for prosecuting criminal cases, advising police on potential prosecutions, reviewing cases, determining charges, and presenting cases in court.²²³ The courts take over once an offender is charged, ensuring justice is served efficiently and fairly. A key tool in this process is the Pre-Sentence Report (PSR), mandated by Section 31 of the Sentencing

²¹⁹ Matt Burgess, *UK Police Are Using AI to Inform Custodial Decisions – but It Could Be Discriminating against the Poor*, WIRED, <https://www.wired.com/story/police-ai-uk-durham-hart-checkpoint-algorithm-edit/> (last visited Jun 7, 2024).

²²⁰ Marion Oswald, Jamie Grace, Sheena Urwin, Geoffrey Barnes, *Algorithmic Risk Assessment Policing Models: Lessons from the Durham Constabulary HART Model*, 27 INFORMATION AND COMMUNICATIONS TECHNOLOGY LAW 223, 2,3 (2018).

²²¹ *Id.*

²²² About CPS | The Crown Prosecution Service, <https://www.cps.gov.uk/about-cps> (last visited Jun 11, 2024).

²²³ *Id.*

Act 2020.²²⁴ ²²⁵ PSRs assist the court in deciding the most suitable sentencing method by providing detailed assessments of the offender's behaviour, risks, and underlying causes of offending. These reports are prepared by Responsible Officers from the Probation Service (PS).

Risk assessments are crucial in preparing PSRs. Tools such as the(OGRS) is an algorithmic risk assessment tool used for evaluating and forecasting the probability of an offender committing further offences.²²⁶ It relies on information such as the individual's criminal record, age, and gender to generate a risk score ranging from 0 to 1, indicating the likelihood of reoffending within a one or two-year timeframe²²⁷ and the Risk of Serious Recidivism (RSR), which estimates the likelihood of committing a serious further offence²²⁸, are utilized.

Additionally, a Risk of Serious Harm (RoSH) assessment gauges the likelihood of an individual causing serious harm to others, as defined by the prison service as life-threatening or traumatic with difficult recovery.²²⁹It evaluates risks to others, children, the individual (including suicide, self-harm, and coping ability in custody), and other risks such as escape and control issues. The process includes an initial screening to determine if a full assessment is needed, resulting in a Very High, High, Medium, or Low risk rating .²³⁰ The aim is to provide the courts with the necessary information to make informed sentencing decisions promptly, thereby reducing delays and enhancing justice administration.

²²⁴ Expert Participation, *Sentencing Act 2020*, <https://www.legislation.gov.uk/ukpga/2020/17/section/31> (last visited Jun 11, 2024).

²²⁵ According to section 31(1) of the Sentencing Act, 2020, a "pre-sentence report" means a report which—

(a) is made or submitted by an appropriate officer with a view to assisting the court in determining the most suitable method of dealing with an offender, and

(b) contains information as to such matters, presented in such manner, as may be prescribed by rules made by the Secretary of State.

²²⁶ PHILIP HOWARD, HANDBOOK OF RECIDIVISM RISK/NEEDS ASSESSMENT TOOLS 231 (1 ed. 2017), <https://doi.org/10.1002/9781119184256.ch11>.

²²⁷ Regulating Artificial Intelligence for Use in Criminal Justice Systems in the EU Policy Paper, 17.

²²⁸ Risk of Serious Harm Guidance 2020, 3 (2023).

²²⁹ Offender Management and Sentence Planning, 5 (2022).

²³⁰ *Id.*

3.5 ARTIFICIAL INTELLIGENCE IN THE CHINESE JUSTICE SYSTEM

In 2017, China set forth an ambitious plan to develop its AI technology, aspiring to become the world's foremost AI innovation hub by 2030.²³¹²³² China is striving to build a moderately prosperous society while facing significant challenges, such as an ageing population and constraints on resources and the environment. AI has extensive applications in fields like education, healthcare, elderly care, environmental protection, urban management, and judicial services, which can greatly enhance targeted public services and overall quality of life.²³³ For the purpose of modernizing the judicial system, the Artificial Intelligence Development Plan (AIDP), 2017²³⁴ provides the following measures to capitalize the judicial system²³⁵:

“Construct a set of trial, personnel, data applications, judicial disclosure, and dynamic monitoring into an integrated court data platform. Promote AI applications for applications including evidence collection, case analysis, and legal document reading and analysis. Achieve the intelligentization of courts and trial systems and trial capacity”.²³⁶ China's court system is organized into a four-tier hierarchy. At the top is the Supreme People's Court (SPC), the highest judicial authority that supervises lower courts hears critical cases, and issues binding legal interpretations.²³⁷ Below the SPC are High Courts, operating at the provincial level, handling major cases or appeals from intermediate courts.²³⁸ Intermediate Courts, serving as the second tier, hear appeals from basic courts and handle significant regional cases and at the grassroots level, the

²³¹ Huw Roberts et al., *The Chinese Approach to Artificial Intelligence: An Analysis of Policy, Ethics, and Regulation*, 36 AI & SOCIETY 59, 60 (2021).

²³² Arjun Kharpal, *China Wants to Be a \$150 Billion World Leader in AI in Less than 15 Years*, CNBC (2017), <https://www.cnbc.com/2017/07/21/china-ai-world-leader-by-2030.html> (last visited Jun 13, 2024).

²³³ Next Generation Artificial Intelligence Development Plan Issued by State Council-China's Strengths Creates Innovation Miracles, 3 (2017).

²³⁴ In 2017, China's State Council published the Artificial Intelligence Development Plan (AIDP), a national strategy white paper that charts China's AI development aspirations up to 2030.

²³⁵ Nyu Wang & Michael Yuan Tian, *"Intelligent Justice": Human-Centered Considerations in China's Legal AI Transformation*, 3 AI ETHICS 349 (2023).

²³⁶ Graham Webster et al., *Full Translation: China's "New Generation Artificial Intelligence Development Plan"* (2017), NEW AMERICA CYBERSECURITY INITIATIVE (2017), <https://www.newamerica.org/cybersecurity-initiative/digichina/blog/full-translation-chinas-new-generation-artificial-intelligence-development-plan-2017/>.

²³⁷ China | Judiciaries Worldwide, <https://judiciariesworldwide.fjc.gov/country-profile/china> (last visited Jun 13, 2024).

²³⁸ *Id.*

basic courts handle most criminal and civil cases and serve as the first point of contact for citizens involved in legal proceedings.²³⁹

In recent years, under the leadership of Chief Justice Zhou Qiang, the Supreme People's Court of China (SPC) has vigorously adopted electronic technologies, making significant strides towards e-justice.²⁴⁰ This has resulted in the widespread technologization of civil judicial proceedings throughout China.²⁴¹ The judicial capacity and processes are being revitalized through the following ways: 1) making judicial services more transparent; 2) making judicial services more convenient; making trial work more intelligent; 4) making enforcement more efficient; 5) making information management more standardized; 6) making judicial decisions more accurate.²⁴²

3.5.1 THE SMART COURT SYSTEM

The smart court system in China is envisaged with the objective of promoting the modernization of the judicial system and judicial capacity. One of the significant steps towards AI adoption in the Chinese judicial system happened with the rise of online courts. The 'Five-Year Reform Outline of the People's Court,' issued by the Supreme People's Court on October 20, 1999, emphasized the integration of information technology and the development of an online trial system as key components of judicial reform.²⁴³ In 2002, the Supreme People's Court implemented the 'Regulations on the Construction of the Computer Information Network System of the People's Court' and the 'Plan for the Construction of the Computer Information Network System of the People's Court.'²⁴⁴ During the National Conference on Information Construction of Courts, the 'National Judicial Trial Information System Project' was initiated and these reforms established the groundwork for the extensive application of big data, cloud

²³⁹ *Id.*

²⁴⁰ Zuhao Wang, *China's E-Justice Revolution*, 105, 37 (2021).

²⁴¹ *Id.*

²⁴² Fuhui Sun, Supreme People's Court of China, Deputy Director of the Information Centre, *What Do Smart Courts Look like in China?*, (2022), <https://golearn.judges.org/learn/course/569/play/9357/34-what-do-smart-courts-look-like-in-china>.

²⁴³ Weidong Ji, *The Change of Judicial Power in China in the Era of Artificial Intelligence Law and Artificial Intelligence in Asia*, 7 *ASIANJLS* 515, 518 (2020).

²⁴⁴ *Id.* at 519.

computing, the Internet, information technology, and AI in judicial proceedings.²⁴⁵ In 2004, the Supreme People's Court set up the first electronic and intelligent court.²⁴⁶

The development of smart courts in China can be traced through three transformative stages, beginning in the 1990s. The first stage started with the 'National Conference on Matters of Court Communication and Computer' in 1996 and ended in 2003 when all courts in China completed digitizing their files and establishing website links.²⁴⁷ This conference marked the first focus on technology for resolving judicial administration issues, transitioning court work from handwritten files to word processing. This shift not only aligned Chinese courts with international standards but also paved the way for future online filing systems. In 1997, the Supreme People's Court (SPC) emphasized the need for computer systems to manage increasing case numbers more efficiently, highlighting the inefficiency of traditional handwritten court files.²⁴⁸ Consequently, the first Five-Year Reform Outline of People's Courts (1999-2003) mandated the digitization of files by 2001 and the creation of a nationwide internet network connecting all courts by 2003, enhancing judicial administration through connectivity.²⁴⁹

The second phase, from 2004 to 2013, saw the emergence of internet-assisted court hearings. Local courts began using internet technologies for case management and hearings, such as a 2004 case in Guangdong Province where email was used for communication in a transnational divorce.²⁵⁰ In 2005, a court in Guizhou Province used Tencent QQ²⁵¹ for a divorce case, and by 2007, the first full videoconference hearing took place in Shanghai for a criminal case.²⁵² This period also saw the introduction of audio and video recording in hearings, promoting judicial openness through livestreaming. For example, in 2009, the Beijing High People's Court launched a website for livestreaming hearings to enhance transparency and public monitoring and despite some concerns about privacy and judicial discomfort, the SPC continued to

²⁴⁵ *Id.*

²⁴⁶ *Id.*

²⁴⁷ Changqing Shi, Tania Sourdin & Bin Li, *The Smart Court – A New Pathway to Justice in China?*, 12 INTERNATIONAL JOURNAL FOR COURT ADMINISTRATION 4, 6 (2021).

²⁴⁸ *Id.*

²⁴⁹ *Id.*

²⁵⁰ *Id.*

²⁵¹ Tencent QQ (QQ) is an instant messaging software platform primarily used for online messaging, casual video and voice calls, document sharing and social networking in China.

²⁵² Shi, Sourdin, and Li, *supra* note 247 at 7.

support livestreaming, incorporating it into the third Five-Year Reform Outline of People's Courts (2009-2013).²⁵³

The third stage began in 2014 with the introduction of the smart court initiative, aiming to create an open, dynamic, transparent, and convenient judicial system.²⁵⁴ By 2017, China's leadership emphasized the integration of modern technology into judicial reforms, promoting the development of a judicial system that aligns socialism with Chinese characteristics.²⁵⁵ The most recent Five-Year Reform Outline of People's Courts (2019-2023)²⁵⁶ included comprehensive smart court advancements as a key objective. Significant technological innovations such as AI-driven voice-to-text systems and intelligent auxiliary case management systems were introduced. For example, a court in Hangzhou showcased advanced features like online legal help robots, e-filing facilities, and virtual courtrooms.²⁵⁷ Additionally, three online platforms, China Judicial Process Information Online, China Judgments Online, and China Judgments Enforcement Information Online, were launched to enhance transparency and accessibility. These platforms provide updates on cases, publish judgments, and list individuals who fail to comply with court judgments, integrating this data into the social credit system.²⁵⁸

Furthermore, special Internet Courts were established, starting with Hangzhou Internet Court in 2017, followed by similar courts in Beijing and Guangzhou.²⁵⁹ These courts handle internet-related cases, utilizing web-based platforms for all judicial proceedings, including case filing, document serving, evidence examination, online hearings, and judgment delivery. Technologies such as facial recognition and machine learning are employed to assist in these processes.²⁶⁰ Blockchain technology is also used for

²⁵³ *Id.*

²⁵⁴ *Id.* at 8.

²⁵⁵ President Xi urges efforts to advance judicial reform - Xinhua | English.news.cn, http://www.xinhuanet.com/english/2017-07/10/c_136432651.htm (last visited Jun 14, 2024).

²⁵⁶ Supreme People's Court Opinions on Deepening the Reform of the Judicial System with Comprehensive Integrated Reforms - Outline of the Fifth Five-Year Reform Program of the People's Courts (2019-2023), <https://www.chinalawtranslate.com/en/supreme-peoples-court-opinions-on-deepening-the-reform-of-the-judicial-system-with-comprehensive-integrated-reforms-outline-of-the-fifth-five-year-reform-program-of-the-peoples-courts-2019-2023/> (last visited Jun 14, 2024).

²⁵⁷ Robot justice: China's use of Internet courts By Tara Vasdani | Lexisnexis Canada, <https://www.lexisnexis.ca/en-ca/ihc/2020-02/robot-justice-chinas-use-of-internet-courts.page> (last visited Jun 14, 2024).

²⁵⁸ Shi, Sourdin, and Li, *supra* note 247 at 10.

²⁵⁹ Robot justice: China's use of Internet courts By Tara Vasdani | Lexisnexis Canada, *supra* note 257.

²⁶⁰ Shi, Sourdin, and Li, *supra* note 247 at 11.

evidence preservation, highlighting China's commitment to integrating advanced technologies into its judicial system.²⁶¹

3.6 ARTIFICIAL INTELLIGENCE IN THE BRAZILIAN JUSTICE SYSTEM

The Brazilian justice system is in dire need of solving its huge backlog of pending cases ranging up to 80 million cases that would constitute the biggest court backlogs in the world.²⁶² There have been numerous attempts to address the crisis within the justice system, but all have been unsuccessful. For example, despite efforts to encourage the use of alternative dispute resolution (ADR) mechanisms in Brazil, only 10% of lawsuits currently result in a settlement.²⁶³ Implementing technology in Brazilian courts appears to be the only viable solution. It is at this juncture that AI proves to be the most promising solution to combat this problem. The Brazilian judicial system encompasses several pivotal actors and entities, each playing a crucial role in integrating AI and digital technologies. The National Council of Justice (CNJ) stands at the forefront, responsible for developing and promoting the Electronic Judicial Process (PJe), a system designed to digitalize and authenticate judicial documents. The PJe aims to streamline processes across various courts, establishing itself as the official electronic system of the Judicial branch.

Alongside the PJe, multiple other e-justice platforms are deployed across the Brazilian court system.²⁶⁴ Despite these preferences, there is an ongoing effort to transition to a unified system to enhance efficiency and consistency. The National Interoperability Model (MNI) plays a significant role in facilitating information exchange between the diverse information systems in use within the judiciary.²⁶⁵ It focuses on technical interoperability, data formatting and processing, and network architecture, although it

²⁶¹ *Id.*

²⁶² Amy Guthrie, *Brazil's Overwhelmed Judiciary, Desperate for Help, Turns to Artificial Intelligence*, LAW.COM INTERNATIONAL, <https://www.law.com/international-edition/2024/01/16/brazils-overwhelmed-judiciary-desperate-for-help-turns-to-artificial-intelligence/> (last visited Jun 14, 2024).

²⁶³ Daniel Becker & Isabela Ferrari, *VICTOR, the Brazilian Supreme Court's Artificial Intelligence: A Beauty or a Beast?*, 1 (2020), https://nja.gov.in/Concluded_Programmes/2021-22/SE-09_2021_Speeches_and_Write-ups/3.%20Victor-Beauty-or-the-Beast.pdf.

²⁶⁴ E-justice platforms such as e-SAJ, e-Proc, Projudi, e-STF (Supreme Federal Court), and e-STJ. The key electronic platforms used in the Brazilian judicial system include e-SAJ (Sistema de Automação da Justiça - Justice Automation System), e-Proc (Processo Judicial Eletrônico - Electronic Judicial Process), Projudi (Processo Judicial Digital - Digital Judicial Process), e-STF (Sistema de Processo Judicial Eletrônico do Supremo Tribunal Federal - Electronic Judicial Process System of the Supreme Federal Court), and e-STJ (Sistema de Processo Judicial Eletrônico do Superior Tribunal de Justiça - Electronic Judicial Process System of the Superior Court of Justice).

²⁶⁵ KATIE BREHMET AL., *The Future of AI in the Brazilian Judicial System-AI Mapping, Integration and Governance*, 12 (2020).

faces challenges in establishing strong semantic standards.²⁶⁶ SINAPSES^{267,268} is another critical component identified by the CNJ as part of an AI governance strategy. This initiative serves as a "factory for AI models," enabling courts to develop and scale algorithms for judicial operations, whether they have in-house technology teams or not.²⁶⁹ SINAPSES allows for the reuse, adaptation, and integration of algorithms, fostering a collaborative environment for AI development within the judiciary.

The CNJ also plans to introduce INOVA-PJe^{270,271}, a Laboratory for Innovation in the Electronic Judicial Process. This lab aims to accelerate AI adoption within the PJe by creating national judicial datasets, establishing a Center for Artificial Intelligence, and providing a platform for information sharing and AI model development.²⁷²

As of April 2020, the Brazilian judicial system employs the following AI tools to enhance efficiency and streamline processes. The Supreme Federal Tribunal (STF) uses Victor, which simplifies pattern recognition within legal texts, developed in collaboration with the University of Brasilia.²⁷³ The Supreme Tribunal of Justice (STJ) employs Socrates, which automates the examination of appeals and suggests legal precedents.²⁷⁴ State courts also use various AI tools: the Tribunal of Justice of Acre uses LEIA to read PDFs and connect lawsuits with higher court precedents²⁷⁵; the Tribunal of Justice of Alagoas uses Hercules to automate repetitive tasks²⁷⁶; the Tribunal of Justice of Minas Gerais employs Radar to manage legal resources dealing with similar

²⁶⁶ *Id.*

²⁶⁷ SINAPSES stands for "Sistema Nacional de Aprendizagem e Pesquisa em Soluções Extrajudiciais," which translates to the National System for Learning and Research in Extrajudicial Solutions. It is a platform developed by the Brazilian National Council of Justice (CNJ) to facilitate the development and large-scale availability of AI prototypes. Known as the "AI Model Factory," SINAPSES aims to streamline the creation of AI systems within the judiciary, enhancing efficiency and reducing the backlog of cases by providing standardized AI solutions across various courts.

²⁶⁸ Eduardo Villa Coimbra Campos, *Artificial Intelligence, the Brazilian Judiciary and Some Conundrums*, (Mar. 3, 2023), <https://webserver07.reims.sciences-po.fr/public/chaire-numerique/en/2023/03/03/article-artificial-intelligence-the-brazilian-judiciary-and-some-conundrums/> (last visited Jun 14, 2024).

²⁶⁹ KATIE BREHMET AL., *supra* note 265 at 12.

²⁷⁰ INOVA-PJe, short for "Laboratório de Inovação para o Processo Judicial em meio Eletrônico," is an innovation lab by the Brazilian National Council of Justice (CNJ) aimed at accelerating the development and integration of AI tools in the judiciary to streamline judicial processes and reduce case backlogs.

²⁷¹ Conteúdo Jurídico, CONTEÚDO JURÍDICO, <https://conteudojuridico.com.br/> (last visited Jun 14, 2024).

²⁷² KATIE BREHMET AL., *supra* note 265 at 12.

²⁷³ *Id.* at 13.

²⁷⁴ *Id.*

²⁷⁵ *Id.*

²⁷⁶ *Id.* at 14.

issues²⁷⁷; the Tribunal of Justice of Pernambuco uses Elis to present documents and data to judges²⁷⁸; and the Tribunal of Justice of Rio Grande do Norte uses Poti, Clara, and Jerimum for tasks like account management and document analysis²⁷⁹. Additionally, SINAPSES, used by the Tribunal of Justice of Rondonia, optimizes repetitive tasks and serves as a collaborative framework for algorithm development across courts.²⁸⁰ These AI tools, created based on the specific needs of tech-savvy courts, present opportunities and challenges in governance and scalability across the judicial system.

In addition to the above countries AI tools are used in several other countries as well into their judicial systems to enhance efficiency and accuracy in legal processes. An attempt is made to briefly examine AI adoption into the justice system of the following countries: Estonia has pioneered the development of a ‘robot judge’ by the Ministry of Justice to adjudicate small claims disputes under €7,000 (\$8,000).²⁸¹ Initially focusing on contract disputes, this pilot aims to expand to other types of claims.²⁸² Similarly, in Argentina and Colombia, the AI tool Prometea has been deployed by the Public Prosecutor’s Office of Buenos Aires and the Constitutional Court of Colombia, respectively, to predict case outcomes with a 96% success rate in less than 20 seconds.²⁸³ Prometea also identifies urgent cases within large volumes of files in just 2 minutes, a task that would typically take a human 96 days.²⁸⁴

In the Middle East, the Abu Dhabi Judicial Department (AJDJ) collaborates with the private sector on the ‘Justice Intelligence’ Project, which uses technology to predict the likelihood of case settlements with up to 94% accuracy.²⁸⁵ In Singapore, courts have implemented a speech translation system that employs neural networks and domain-specific language models to transcribe court hearings in real time, enabling instant review of oral testimonies by judges and parties.²⁸⁶

²⁷⁷ *Id.*

²⁷⁸ *Id.*

²⁷⁹ *Id.*

²⁸⁰ *Id.*

²⁸¹ Can AI Be a Fair Judge in Court? Estonia Thinks So | WIRED, <https://www.wired.com/story/can-ai-be-fair-judge-court-estonia-thinks-so/> (last visited Jun 14, 2024).

²⁸² Responsible-AI-in-the-Indian-Justice-System-A-Strategy-Paper.pdf, *supra* note 180 at 10.

²⁸³ *Id.*

²⁸⁴ *Id.*

²⁸⁵ *Id.*

²⁸⁶ *Id.*

Additionally, countries like Russia and Mexico have introduced robots to provide legal advice to citizens and assist judges in determining pension eligibility.²⁸⁷ In Canada, the Federal Court's Strategic Plan 2020-2025 includes principles and guidelines for exploring the use of AI. After consulting stakeholders, the Court plans to pilot AI for internal administrative tasks, starting with AI-assisted translation of court decisions.²⁸⁸ Austria utilizes AI for sophisticated document management tasks, such as anonymizing court documents and digitizing analogue files.²⁸⁹ Meanwhile, Malaysia has adopted AI to support sentencing decisions. These diverse implementations across different judicial systems highlight the global trend of leveraging AI to streamline legal processes and enhance judicial efficiency.²⁹⁰

3.7 COMPARATIVE ANALYSIS OF AI ADOPTION IN THE JUSTICE SYSTEM

3.7.1 INDIA AND US

India's AI initiatives are primarily aimed at improving administrative efficiency, reducing case backlogs, and making judicial processes more accessible. Projects like the National Judicial Data Grid (NJDG) provide comprehensive case-related information to the public, while SUPACE and SUVAS enhance case management and document translation capabilities. AI is being used in judicial decision making, however, there remains a conflict of opinion on reliance of AI tools. In contrast, the US employs AI in a broader range of applications within the justice system, including criminal investigations, legal policy development, and forensic analysis. The US also places a strong emphasis on using AI to enhance public safety, with projects focusing on crime trend forecasting and automated traffic accident detection.

India has made significant strides in integrating AI into its judicial system through initiatives like the E-Courts Mission Mode Project, SUPACE, and SUVAS. These projects focus on computerizing court operations, enhancing judicial efficiency, and promoting regional languages in judicial processes. It is even used in judicial decision making. The US, on the other hand, has a more diversified approach with AI integrated

²⁸⁷ *Id.*

²⁸⁸ Federal Court - Artificial Intelligence, <https://www.fct-cf.gc.ca/en/pages/law-and-practice/artificial-intelligence> (last visited Jun 14, 2024).

²⁸⁹ Responsible-AI-in-the-Indian-Justice-System-A-Strategy-Paper.pdf, *supra* note 180 at 10.

²⁹⁰ *Id.*

across various departments of the Department of Justice (DOJ), focusing on improving operational efficiency and effectiveness. The DOJ utilizes AI for tasks such as threat assessment, drug origin classification, and fraud detection, employing advanced technologies like natural language processing (NLP) and machine learning.

In India, AI is used to automate repetitive judicial tasks, facilitate real-time translation of judicial documents, and manage vast amounts of case data. However, it is slowly being used in judicial decision making as evidenced in the *Jaswinder Singh's* case.²⁹¹ Key areas include case management, document translation, and data accessibility. The US utilizes AI extensively in law enforcement and legal policy, employing tools like COMPAS for risk assessment in sentencing decisions, and leveraging AI for forensic science applications such as DNA analysis and gunshot detection. The diversity of AI applications in the US reflects a comprehensive approach to integrating technology across all facets of the justice system.

While India focuses on enhancing judicial efficiency and accessibility through AI, the US employs a more holistic approach, integrating AI across multiple departments and applications within the justice system. The US's emphasis on public safety and criminal justice highlights the potential of AI to transform not only judicial processes but also broader aspects of law enforcement and public administration. India's initiatives, though impactful, are more concentrated on the judiciary, aiming to streamline court operations and improve access to justice and has to go a long way before complete doption in judicil decision making.

3.7.2 INDIA AND UK

In India, AI adoption primarily enhances administrative efficiency, reduces case backlogs, and promotes accessibility. The E-Courts Project aims to digitalize court operations nationwide, while SUPACE assists judges in data management and case analysis. In the UK, the scope of AI adoption includes risk prediction, data analysis, and online dispute resolution. Tools like Patrol-Wise for crime prediction and the Harm Assessment Risk Tool (HART) for assessing reoffending risks are examples of how AI is used to support law enforcement and judicial decision-making.

²⁹¹ Jaswinder Singh @ Jassi vs. State of Punjab & Anr.,2023 LiveLaw (PH) 48

India's development in AI adoption for the judiciary includes significant projects like the E-Courts Mission Mode Project and the launch of AI-powered portals such as SUPACE. These initiatives have modernized court operations and enhanced judicial efficiency. The UK, however, envisions a future where AI is deeply integrated into the justice system, with a focus on online dispute resolution and AI-driven risk prediction. The UK's initiatives are still in developmental stages but aim for a comprehensive integration by 2040, emphasizing public confidence and transparency in AI-driven decisions.

India's AI applications focus on judicial efficiency, case management, and language translation. Initiatives like NJDG and SUVAS highlight the emphasis on improving judicial processes and making legal information accessible. The UK's AI adoption covers law enforcement, prosecution, and the courts. AI tools assist in crime prediction, risk assessment, and data management, with an emphasis on transparency and public confidence. The UK also explores AI for online dispute resolution, aiming to create a seamless digital justice system.

India's AI adoption is more focused on the judiciary, aiming to enhance efficiency and accessibility. The UK's approach is broader, encompassing law enforcement, prosecution, and judicial processes, with a strong emphasis on future integration and public trust. Both countries recognize the importance of transparency and efficiency but differ in their immediate focus and long-term vision. India's efforts are currently more advanced in terms of implementation, while the UK is in the planning and developmental stages of comprehensive AI integration.

3.7.3 INDIA AND CHINA

India's AI initiatives aim to improve judicial efficiency, reduce case backlogs, and promote regional languages in legal processes. The E-Courts Project and NJDG are key examples of how India is digitalizing court operations. China's scope of AI adoption is broader, aiming to modernize the entire judicial system and enhance judicial capacity. The Smart Court initiative includes online courts, AI-driven case management, and transparency platforms like China Judicial Process Information Online.

India has made notable progress in adopting AI within its judiciary through projects like the E-Courts Mission Mode Project, SUPACE, and SUVAS. These initiatives focus on computerizing court operations, improving efficiency, and enhancing accessibility.

China, however, has made rapid advancements with its Smart Court system, integrating AI comprehensively into judicial processes. China's development includes AI-driven voice-to-text systems, intelligent case management, and extensive use of online judicial platforms.

India's AI applications focus on case management, document translation, and data accessibility. The E-Courts Project digitalizes court operations, while SUPACE and SUVAS assist in data management and translation. China's AI adoption covers comprehensive judicial processes, including online trials, AI-driven decision support, and transparency measures. China also employs advanced technologies like blockchain for evidence preservation and machine learning for judicial decision-making.

India's AI adoption is concentrated on enhancing judicial efficiency and accessibility, with significant progress in digitalizing court operations. China's approach is more extensive, aiming to transform the entire judicial system with advanced technologies and comprehensive AI integration. Both countries recognize the potential of AI to improve judicial processes, but China's rapid advancements and broader scope highlight a more ambitious and technologically integrated vision for the future of justice.

3.7.4 INDIA AND BRAZIL

India's AI initiatives are aimed at improving judicial efficiency, reducing case backlogs, and promoting regional languages. Projects like NJDG and SUVAS enhance data accessibility and translation capabilities. Brazil's scope of AI adoption is driven by the need to address case backlogs and improve judicial efficiency. The PJe digitalizes judicial documents, while SINAPSES supports the development and scaling of AI models for judicial operations.

India has implemented several AI initiatives in its judiciary, such as the E-Courts Mission Mode Project and SUPACE, focusing on digitalization and efficiency. Brazil, facing a massive backlog of cases, has turned to AI as a promising solution. Initiatives like the Electronic Judicial Process (PJe) and SINAPSES aim to streamline judicial operations and enhance efficiency.

In India, AI is used for case management, document translation, and improving judicial processes. The E-Courts Project digitalizes court operations, while SUPACE and

SUVAS assist judges in data management and translation. In Brazil, AI tools like Victor, Socrates, and Hercules automate legal tasks, manage legal resources, and analyze case data. The SINAPSES initiative fosters collaboration and development of AI models across courts. India's AI adoption focuses on enhancing judicial efficiency and accessibility, with a strong emphasis on digitalization and language translation. Brazil's approach addresses the urgent need to reduce case backlogs and improve judicial efficiency through AI and digital platforms. Both countries leverage AI to streamline judicial operations, but Brazil's initiatives are more focused on overcoming structural inefficiencies and scaling AI models for broader judicial use.

3.8 CONCLUSION

In comparing AI adoption in the justice systems of India, the United States, the United Kingdom, China, and Brazil, it is evident that each country has tailored its approach based on specific needs and challenges. India focuses on judicial efficiency, accessibility, and language translation, addressing its massive population and linguistic diversity. AI tools like Chatgpt is being used in assisting judicial decision making, however, the judicial attitude towards its reception is not uniform across India. Initiatives like the E-Courts Mission Mode Project, SUPACE, and SUVAS highlight India's commitment to modernizing its judiciary and reducing case backlogs. The integration of AI in India's justice system is a testament to the country's efforts to streamline court operations, improve accessibility, and leverage technology to make judicial processes more efficient and transparent.

The US employs a diversified approach, integrating AI across various departments within the Department of Justice. This includes enhancing law enforcement capabilities, improving forensic analysis, and using AI for risk assessment in sentencing decisions. The US focuses on utilizing AI to enhance public safety, streamline operations, and support decision-making across the justice system. The breadth of AI applications in the US reflects a comprehensive strategy to incorporate technology in multiple facets of law enforcement and judicial processes, demonstrating the country's innovative and holistic approach. The United Kingdom envisions a future where AI is deeply integrated into the justice system, with a strong emphasis on online dispute resolution and AI-driven risk prediction. The UK's approach prioritizes public confidence and transparency, aiming to create a seamless digital justice system by 2040.

The focus on developing AI tools for risk assessment and crime prediction showcases the UK's forward-thinking strategy to incorporate AI in ways that enhance judicial decision-making and public trust.

China's approach to AI adoption in the judiciary is ambitious and technologically advanced. The Smart Court system, online courts, and AI-driven decision support highlight China's commitment to transforming its judicial processes. The integration of AI into various aspects of the judiciary, from voice-to-text systems to blockchain technology for evidence preservation, demonstrates China's comprehensive and forward-looking strategy. The rapid advancements and extensive scope of AI applications in China reflect the country's determination to become a global leader in AI innovation, aligning with its broader goals of modernization and technological leadership.

Brazil, facing significant judicial backlogs, leverages AI to streamline operations and enhance efficiency. Initiatives like the Electronic Judicial Process (PJe) and SINAPSES aim to digitalize judicial documents and support the development of AI models across courts. Brazil's approach focuses on overcoming structural inefficiencies and improving judicial productivity, highlighting the potential of AI to address critical challenges in the justice system. The emphasis on collaboration and scalability in Brazil's AI initiatives underscores the country's innovative efforts to modernize its judiciary and reduce case backlogs.

Each country's approach to AI adoption in the justice system reflects its unique priorities, challenges, and opportunities. While India and Brazil focus on enhancing judicial efficiency and reducing case backlogs, the United States and the United Kingdom prioritize public safety, risk assessment, and public confidence. China's comprehensive and technologically advanced strategy aims to transform the entire judicial system, positioning the country as a leader in AI innovation. The diverse implementations of AI in these countries highlight the transformative potential of technology to enhance judicial processes, improve efficiency, and ensure access to justice globally. The comparative analysis underscores the importance of tailored strategies and innovative solutions in leveraging AI to address the specific needs of different judicial systems, paving the way for a more efficient, transparent, and accessible justice system worldwide.

CHAPTER IV

ADOPTION OF AI IN JUSTICE SYSTEM: ETHICAL AND LEGAL IMPLICATIONS

“In short, the rise of powerful AI will be either the best, or the worst thing, ever to happen to humanity. We do not yet know which.”²⁹²

-Stephen Hawking

4.1 INTRODUCTION

Over the last few years, AI has revolutionized the way legal systems operate. From assisting in legal research to sentencing decisions, AI applications promise to streamline legal operations and improve the efficiency and accuracy of legal outcomes. However, this rapid advancement in AI adoption within the legal sector also brings forth a host of ethical and legal considerations that warrant careful examination and analysis. The extent of application of AI in justice systems may vary for each country, but the challenges it posits are pretty common. Introducing AI applications into the legal field can have profound effects. On the one hand, ethical concerns include bias and unfairness, lack of transparency, insufficient human oversight, issues of consent, and individual autonomy. Legally, there are questions surrounding the personhood of AI, algorithmic accountability, cybersecurity, protection of privacy and personal data, lack of contestability, and the need for regulation. One pressing issue troubling the legal system is whether AI should be granted legal personhood. Given AI's potential to eventually rival human intelligence, a crucial question arises: Can an AI system possess rights and responsibilities akin to a human? Can artificial intelligence be integrated into human consciousness as a source of these rights and duties? The question of AI's legal responsibility is central to this debate and demands careful consideration. Such concerns warrant a detailed examination of the ethical and legal implications of the adoption of AI into the justice system.

²⁹² Professor Stephen Hawking, in his speech delivered at the launch of the Leverhulme Centre for the Future of Intelligence (CFI) in the University of Cambridge on 19th Oct, 2016, <https://www.cam.ac.uk/research/news/the-best-or-worst-thing-to-happen-to-humanity-stephen-hawking-launches-centre-for-the-future-of> (last visited on Jun 15, 2024)

4.2 ETHICAL IMPLICATIONS

As a technical companion, AI can enhance human capabilities by assisting with tasks like pattern recognition, data interpretation, and decision-making, all of which are crucial to justice systems. Leveraging AI techniques can potentially improve the efficiency of these systems. In an era of rapid scientific and technological advancements, justice systems must explore AI technologies' potential benefits. However, alongside the advantages of AI, there are inherent risks. Despite being praised for producing accurate and speedy results, AI systems, like humans, are prone to bias and lack transparency. Integrating AI into the justice system raises significant ethical implications that must be addressed to ensure the technology enhances, rather than undermines, justice.

One major ethical concern is the potential for AI algorithms to perpetuate existing biases found in the data they are trained on, which can lead to unfair treatment and discriminatory outcomes for marginalised or minority groups. AI systems may perpetuate and worsen existing inequalities through data or design biases. The opacity of many AI systems, often referred to as "black boxes," further complicates matters by making it difficult to understand and scrutinize their decision-making processes, thereby eroding trust in AI-assisted legal decisions. Accountability is another critical issue, as determining who is responsible for AI-driven decisions can be complex, involving developers, users, and potentially the AI itself. This necessitates clear lines of moral accountability to ensure ethical governance. Additionally, AI systems often require extensive personal data, raising privacy concerns and necessitating robust safeguards to protect individuals' data from misuse. Ensuring informed consent is also crucial, as individuals must be fully aware of and agree to use AI in decisions that impact them. The over-reliance on AI can undermine human autonomy and judicial discretion, highlighting the need for human oversight to maintain ethical and just outcomes.

Lastly, the security of AI systems is paramount, as they are susceptible to hacking and manipulation, which could lead to unethical or malicious uses within the justice system. Addressing these ethical challenges is essential for the responsible deployment of AI in the justice system, requiring ongoing assessment and adaptation of ethical guidelines

to keep pace with technological advancements. The ethical implications, along with some of the use cases, are briefly examined as follows:

4.2.1 ALGORITHMIC BIAS AND UNFAIRNESS

Several AI and Big Data technologies, such as knowledge representation, Expert Systems, Decision Support Systems, pattern recognition, image processing, Natural Language Processing, machine learning, deep learning, data analytics, knowledge discovery, behaviour analysis, social network analysis etc., are used to simplify and accelerate decision-making²⁹³ and these are used by various actors in the justice system as well. Algorithmic Decision Making (ADM) is one AI application that, along with its benefits, poses serious ethical challenges in the justice system. Predictive policing and risk assessment programs utilising ADM promise to enhance law enforcement efficiency, reduce delays, and lower costs.²⁹⁴ In the UK, these technologies are already employed for crime mapping and aiding in decisions about prosecuting arrested individuals, while in the US, their use is more extensive, encompassing sentencing and parole decisions as well.²⁹⁵ One of the arguments favouring ADM is that it will be impervious to bias and will eliminate the chances of human bias to facilitate impartial decision-making. However, this is not true. Numerous studies indicate that these systems can perpetuate and even exacerbate existing biases.²⁹⁶ ADM systems are only as fair as the data and creators behind them.

ADM suffers from two main types of biases: data biases and design biases. Data biases occur when algorithms are trained on legacy datasets that contain systemic or historical biases, leading to perpetuated biased outcomes.²⁹⁷ Design biases, on the other hand, stem from the unintentional transference of developers' innate prejudices into the algorithm's coding.²⁹⁸ This happens through the selection of features and variable weighting that reflect the developers' subjective views. Both types of biases undermine

²⁹³ Yu. S. Kharitonova, V. S. Savina & F. Pagnini, *Artificial Intelligence's Algorithmic Bias: Ethical and Legal Issues Section I: Theory and History of State and Law*, 53 PERM U. HERALD JURID. SCI. 488, 490 (2021).

²⁹⁴ Malwina Anna Wojcik, *Machine-Learnt Bias? Algorithmic Decision Making and Access to Criminal Justice*, 20 LIM 99, 99 (2020).

²⁹⁵ *Id.*

²⁹⁶ *Id.*

²⁹⁷ Ameen Jauhar, Vidhi Centre for Legal Policy, Senior, *What Risks Does Algorithmic Bias Surface for Justice?*, (2022), <https://golearn.judges.org/learn/course/569/play/9433/module-4-algorithmic-bias-and-its-implications-for-judicial-decision-making>.

²⁹⁸ *Id.*

the fairness and effectiveness of ADM, highlighting the need for rigorous testing, transparency, and public oversight to ensure these systems contribute to a more equitable justice system. Algorithmic biases can significantly harm justice systems by reinforcing historical and systemic biases through legacy datasets, effectively institutionalising such biases.²⁹⁹ This can result in the denial of civil rights and liberties, particularly for vulnerable populations, as seen in predictive policing practices.³⁰⁰ Additionally, the presumption of algorithmic neutrality and a strong “automation bias” can diminish critical evaluation of these systems’ actual impacts.³⁰¹ The lack of explainability, or “black box” nature, of algorithmic decisions further undermines due process and the principle of reasoned judicial decisions.³⁰²

4.2.1.1 PREDICTIVE JUSTICE TOOLS ALGORITHMIC BIAS

*State v. Loomis*³⁰³

In this case, Eric Loomis was charged with crimes related to a drive-by shooting in La Crosse, Wisconsin. Loomis pled guilty to lesser charges, and during sentencing, a COMPAS risk assessment was used to determine his recidivism risk. The methodology of COMPAS, however, is a trade secret, and neither the court nor Loomis could access the details of how the risk scores were calculated.³⁰⁴ Loomis challenged the use of the COMPAS assessment, arguing that it violated his due process rights because it did not allow for an individualized sentence and relied on potentially inaccurate information. Furthermore, he contended that the use of gender in the assessment, which aims to improve accuracy, was discriminatory.³⁰⁵ The trial court denied his motion for post-conviction relief, and the Wisconsin Court of Appeals certified the case to the Wisconsin Supreme Court, which upheld the trial court’s decision.³⁰⁶

The Wisconsin Supreme Court’s decision acknowledged the use of COMPAS in sentencing but required that judges be given a “written advisement” detailing the limitations and potential biases of such assessments. These warnings included the

²⁹⁹ *Id.*

³⁰⁰ *Id.*

³⁰¹ *Id.*

³⁰² *Id.*

³⁰³ *State v. Loomis*, 881 North Western Reporter 749 (2016).

³⁰⁴ Criminal Law - Sentencing Guidelines - Wisconsin Supreme Court Requires Warning before Use of Algorithmic Risk Assessments in Sentencing - *State v. Loomis* 881 N.W.2d 749 (Wis. 2016) Recent Cases, 130 HARV. L. REV. 1530, 1530–1532 (2016).

³⁰⁵ *Id.* at 1531–1532.

³⁰⁶ *Id.* at 1531,1533.

proprietary nature of COMPAS, its reliance on group data rather than individual data, and concerns about its potential racial bias.³⁰⁷ Despite these measures, the court's attempt to instill scepticism among judges regarding algorithmic assessments was deemed insufficient by critics, who argued that judges lack the necessary understanding and information to evaluate these tools properly.³⁰⁸

The problem of algorithmic bias was central to the case, with significant concerns about the disproportionate classification of minority offenders as high-risk by tools like COMPAS. Studies cited in the discussion indicated that black defendants were more likely to be falsely labelled as future criminals compared to white defendants.³⁰⁹ The court's reaction, prescribing warnings rather than banning or restricting the use of such tools, was criticised as inadequate for ensuring fair and individualised sentencing.³¹⁰

Following this decision Eric Loomis appealed to the United States Supreme Court. The case, *Loomis v. Wisconsin*³¹¹, challenged the use of the COMPAS risk assessment tool in his sentencing, arguing that it violated his due process rights by preventing him from challenging the scientific validity and accuracy of the risk assessment and by incorporating gender and race into the assessment process.³¹² He argued that

The United States Supreme Court denied the petition for a writ of certiorari on June 26, 2017, thus declining to hear the case. This decision left the Wisconsin Supreme Court's ruling intact, which had upheld the use of COMPAS with certain warnings about its limitations and potential biases. The denial effectively meant that the issues raised about the use of proprietary risk assessment tools in sentencing were not addressed at the federal level, leaving states to continue using such tools under their respective guidelines.³¹³

The empirical demonstration of bias in COMPAS (Correctional Offender Management Profiling for Alternative Sanctions) and its poor accuracy in predicting recidivism for African-Americans is largely attributed to the research conducted by ProPublica, an

³⁰⁷ *Id.* at 1533–1534.

³⁰⁸ *Id.* at 1535–1536.

³⁰⁹ *Id.* at 1534–1535.

³¹⁰ *Id.* at 1536–1537.

³¹¹ *Loomis v. Wisconsin*, 137 Supreme Court Reporter 2290 (2017).

³¹² *Loomis v. Wisconsin*, SCOTUSBLOG, <https://www.scotusblog.com/case-files/cases/loomis-v-wisconsin/> (last visited Jun 16, 2024).

³¹³ *Id.*

independent, nonprofit news organization.³¹⁴ In their 2016 investigative report titled “Machine Bias,” ProPublica analyzed COMPAS scores and outcomes across different racial groups, revealing disparities in how the tool predicted future criminal behaviour.³¹⁵ Their findings sparked significant debate and scrutiny over using algorithmic risk assessment tools in the criminal justice system.

Miller v. Alabama³¹⁶

This case involved two cases where 14-year-olds Evan Miller and Kuntrell Jackson were convicted of murder and sentenced to life imprisonment without the possibility of parole. The Supreme Court considered whether such sentences for juveniles were constitutional, focusing on whether mandatory life without parole violates the Eighth Amendment’s prohibition on cruel and unusual punishments. The Court ruled that such mandatory sentences are unconstitutional, highlighting the developmental differences between juveniles and adults, such as lack of maturity, susceptibility to external influences, and potential for reform.³¹⁷ The decision emphasizes the ethical necessity of considering these differences in sentencing, raising concerns about the use of algorithmic risk assessments like COMPAS, which may not adequately account for juveniles’ unique circumstances, potentially leading to biased outcomes. The court stressed the importance of individualized sentencing over rigid algorithms that do not consider the unique developmental factors of youth.³¹⁸

Flores and Ors v. Stanford and Ors.³¹⁹

In this case, Carlos Flores, a juvenile offender, was assessed using the COMPAS tool. Despite receiving a favorable risk score, he was denied parole multiple times. He, along with other incarcerated juveniles, argued that the COMPAS tool, which was used by the New York State Board of Parole to predict recidivism, was biased against them due to factors such as race, socio-economic status, and prior criminal history, which they contended led to unfair parole decisions.³²⁰ This case exemplifies the procedural issues

³¹⁴ Machine Bias — ProPublica, <https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing> (last visited Jun 16, 2024).

³¹⁵ *Id.*

³¹⁶ *Miller v. Alabama*, 567 United States Reports 460 (2012).

³¹⁷ *Id.*

³¹⁸ Emily Barber, *Navigating Miller v. Alabama with COMPAS: How Risk Assessment Instruments Square with a Meaningful Opportunity for Release*, 77 NAT’L LAW. GUILD REV. 1, 1-2,24-25 (2020).

³¹⁹ *Flores and Ors v. Stanford and Ors*, 18 CV 2468 (VB), United States District Court for the Southern District of New York, (2019).

³²⁰ *Id.*

and the “black box” nature of algorithmic assessments. The central issue in the case was whether the COMPAS risk assessment tool violated the plaintiffs’ constitutional rights by incorporating biased data, thus leading to discriminatory outcomes in parole decisions, particularly its impact on juveniles who are supposed to have a meaningful opportunity for release as mandated by *Miller*³²¹. Answering the question of fairness and potential bias of COMPAS in parole decisions, the court found that while there is a “cognizable liberty interest in obtaining parole upon demonstrating maturity and rehabilitation,” the use of COMPAS did not, by itself, violate this interest.³²² The court denied the defendants’ motion to dismiss the case, allowing the plaintiffs to proceed with their claims. This decision underscores the need for fairness and transparency in parole processes, raising ethical concerns about the fairness and accountability of AI tools in critical decisions impacting individuals’ lives.³²³ The court noted the ethical necessity of ensuring that such tools do not become a barrier to fair evaluation and are supplemented with human judgment to mitigate potential biases. The 2021 case of *Flores v. Stanford*³²⁴ involved further examination of the practices of the New York State Board of Parole, focusing on an application by Northpointe, Inc. to prevent the disclosure of certain materials and concerning the transparency and fairness of the parole process, particularly in relation to the use of risk assessment tools.³²⁵

Bonilla v. Iowa Board of Parole³²⁶

This case involved a challenge to the use of risk assessment tools by the Iowa Board of Parole. The plaintiff argued that these tools were biased and infringed on his constitutional rights. The central issues were the constitutionality and fairness of using risk assessment tools like COMPAS in parole decisions.³²⁷ The Iowa Supreme Court found that while such tools could be used, they should not be the sole basis for parole decisions, emphasizing the need to ensure these tools are fair and do not reinforce

³²¹ *Miller v. Alabama*, 567 United States Reports 460 (2012).

³²² Barber, *supra* note 318 at 1,23-24.

³²³ Opinion and Order | *Flores v. Stanford* S.D.N.Y. | Civil Rights Litigation Clearinghouse, <https://clearinghouse.net/doc/108054/> (last visited Jun 16, 2024).

³²⁴ *Flores v. Stanford*, 18 Civ. 02468 (VB)(JCM), United States District Court for the Southern District of New York, (2021)

³²⁵ JUDITH C. McCARTHY Judge Magistrate, *FLORES v. STANFORD* / No. 18 Civ. 02468 (VB)(JCM... / 20211021893/ *Leagle.Com*, LEAGLE, <https://www.leagle.com/decision/infdc020211021893> (last visited Jun 16, 2024).

³²⁶ *Bonilla v. Iowa Board of Parole*, 930 Northwestern Reporter, Second Series 751 (2019).

³²⁷ *Id.*

existing biases.³²⁸ This case underscores the ethical concerns regarding the accuracy and fairness of AI-driven risk assessments, highlighting the potential for these tools to contribute to systemic biases if not properly regulated and used cautiously. The court's decision emphasized that parole boards should use risk assessments as one of many factors in their decisions and should be vigilant about the tools' limitations and potential biases.³²⁹

The HART developed and implemented by Durham Constabulary in the UK, has exhibited design biases that pose significant risks. These biases primarily stem from the use of problematic proxies such as postal codes to determine an individual's criminal risk, which can unfairly categorise entire communities as high risk. The use of such proxies can lead to systemic discrimination, as certain areas, often populated by marginalised groups, may be unfairly targeted.³³⁰ This approach can endanger community trust and perpetuate existing biases within the criminal justice system, ultimately leading to the over-policing of certain demographics. The implementation and evaluation of HART underscore the critical need for careful scrutiny and ongoing validation to mitigate such biases and ensure fairer outcomes in predictive policing efforts.^{331 332}

4.2.1.2 FACIAL RECOGNITION TECHNOLOGY AND ALGORITHMIC BIAS

One of the areas where AI is widely adopted in the justice system is the use of facial recognition technology. However, false positives and misidentification are the biggest concerns in such adoption. Buolamwini and Gebru (2018) investigate the accuracy of commercial gender classification systems, revealing significant disparities across different gender and racial groups. They found that these systems performed best on lighter-skinned males and worst on darker-skinned females, highlighting a pronounced bias. For instance, darker-skinned females were misclassified up to 34.7% of the time,

³²⁸ *Id.*

³²⁹ Barber, *supra* note 318 at 2,31-32.

³³⁰ Jennifer L. Doleac & Megan Stevenson, *Are Criminal Risk Assessment Scores Racist?* | Brookings, BROOKINGS (2016), <https://www.brookings.edu/articles/are-criminal-risk-assessment-scores-racist/> (last visited Jun 16, 2024).

³³¹ Helping police make custody decisions using artificial intelligence | University of Cambridge, (2018), <https://www.cam.ac.uk/research/features/helping-police-make-custody-decisions-using-artificial-intelligence> (last visited Jun 16, 2024).

³³² Jennifer L. Doleac and Megan Stevenson, *supra* note 330.

while lighter-skinned males had an error rate of only 0.8%.³³³ This study underscores the necessity for more inclusive training datasets and rigorous auditing to mitigate algorithmic biases and improve fairness in facial recognition technologies.

Garvie, Bedoya, and Frankle (2016) highlight the widespread and largely unregulated use of facial recognition technology by U.S. law enforcement agencies. The report details how this technology disproportionately affects African Americans, largely due to higher arrest rates and inaccuracies in recognizing darker-skinned individuals. It also points out that only a few agencies conduct accuracy tests or have measures to prevent misuse, leading to significant privacy and civil liberties concerns.³³⁴ The authors recommend stringent regulations, including mandatory accuracy and bias tests, transparency in usage policies, and legislative oversight to ensure the responsible use of facial recognition.

Raji et al., (2020) address the ethical implications of auditing facial recognition systems. They argue that current auditing practices are insufficient and often fail to detect biases effectively. The paper suggests comprehensive frameworks for regular auditing, including diverse benchmark datasets and collaboration with external experts to enhance the transparency and accountability of facial recognition systems. The authors emphasize the importance of addressing biases not just in algorithms but also in the auditing processes themselves to ensure fair and equitable use of this technology.³³⁵

Obermeyer et al., (2019) examine racial bias in healthcare algorithms, revealing that these biases can exacerbate existing health disparities. Their study found that an algorithm used to predict patients' healthcare needs significantly underestimated the needs of Black patients compared to white patients with similar health profiles.³³⁶ This bias stemmed from the algorithm's reliance on healthcare costs as a proxy for health

³³³ Joy Buolamwini & Timnit Gebru, *Gender Shades: Intersectional Accuracy Disparities in Commercial Gender Classification*, in PROCEEDINGS OF THE 1ST CONFERENCE ON FAIRNESS, ACCOUNTABILITY AND TRANSPARENCY 77, 6 (2018), <https://proceedings.mlr.press/v81/buolamwini18a.html> (last visited Jun 16, 2024).

³³⁴ Clare Garvie, Alvaro Bedoya, & Jonathan Frankle, *The Perpetual Line-Up- Unregulated Police Face Recognition in America*, PERPETUAL LINE UP (2016), <https://www.perpetuallineup.org/> (last visited Jun 16, 2024).

³³⁵ Inioluwa Deborah Raji et al., *Saving Face: Investigating the Ethical Concerns of Facial Recognition Auditing*, in PROCEEDINGS OF THE AAAI/ACM CONFERENCE ON AI, ETHICS, AND SOCIETY 145 (2020), <https://dl.acm.org/doi/10.1145/3375627.3375820> (last visited Jun 16, 2024).

³³⁶ Ziad Obermeyer et al., *Dissecting Racial Bias in an Algorithm Used to Manage the Health of Populations* (2019).

needs, which inherently favored individuals with higher healthcare access and expenditures. The authors propose using more direct measures of health to mitigate these biases and improve equitable healthcare delivery.³³⁷

These studies collectively highlight the pervasive issue of algorithmic bias in facial recognition and other AI technologies. They call for robust regulatory frameworks, comprehensive auditing practices, and inclusive datasets to address these biases and ensure ethical and fair use of these technologies.

4.2.2 TRANSPARENCY AND EXPLAINABILITY

Algorithms are capable of performing any task that can be translated into code, provided they have timely access to the necessary data and are structured to execute assigned tasks accordingly.³³⁸ The lack of transparency in artificial intelligence systems poses significant risks, particularly in their application within the justice system. When AI algorithms are employed to aid in legal decision-making processes, such as determining sentences or assessing parole eligibility, the opacity of how these decisions are reached becomes a critical concern.

These risks stem from distrust in AI systems due to opaque decision-making processes and the resulting uncertainty about the quality of their outputs. Consequently, AI's involvement in tasks demanding significant decision-maker responsibility is somewhat limited.³³⁹ Firstly, without clear transparency into the inner workings of AI algorithms, stakeholders - be they judges, lawyers, or the public - cannot fully comprehend how decisions are made. This opacity undermines accountability and the ability to challenge or validate outcomes. Injustice could potentially occur if biases or errors in the algorithm's training data or logic remain hidden and unaddressed. According to a report by the European Parliament's Committee on Legal Affairs, transparency in AI systems is crucial for ensuring accountability and fairness in decision-making processes. It

³³⁷ *Id.*

³³⁸ Ojaswi Ishani, *Ethical Concerns in the Age of Growing Artificial Intelligence*, 3 INDIAN J.L. & LEGAL RSCH. 1, 5 (2021).

³³⁹ Yu. S. Kharitonova, V. S. Savina & F. Pagnini, *Artificial Intelligence's Algorithmic Bias: Ethical and Legal Issues Section I: Theory and History of State and Law*, 53 PERM U. HERALD JURID. SCI. 488, 537 (2021).

emphasizes the need for clear explanations of how AI systems arrive at their decisions to maintain trust and legitimacy.³⁴⁰

Secondly, the lack of transparency leads to doubts about the reliability and fairness of AI-generated decisions. In the justice system, where the stakes are high and individual rights and freedoms are at risk, trust in the decision-making process is paramount. If stakeholders perceive AI as making decisions without sufficient justification or clarity, trust in the overall integrity of the legal system may erode. Moreover, the inability to scrutinize and understand AI decision-making limits opportunities for improvement and refinement. Unlike human decision-makers who can explain their reasoning and adjust based on feedback and new information, opaque AI systems may continue to perpetuate biases or errors unnoticed.

In the realm of AI ethics, explainability refers to the ability of AI systems to provide understandable justifications for their decisions or actions. System functionality explanations outline how AI algorithms operate generally, including decision-making processes like decision trees and classification criteria.³⁴¹ Specific decision explanations delve into the reasoning behind individual AI-generated decisions, such as the factors considered or rules applied. Lack of explainability in AI systems can obscure how decisions are reached, potentially eroding trust and accountability.³⁴² This opacity poses ethical challenges in ensuring fairness and transparency within AI applications, particularly in sensitive domains like the justice system.

4.3 LEGAL IMPLICATIONS

In integrating AI into the justice system, profound legal implications emerge that warrant careful consideration. AI technologies, ranging from predictive analytics in sentencing to automated decision-making in case management, introduce complexities at the intersection of law, ethics, and technology. These innovations promise efficiency gains and objective insights but also raise significant legal challenges regarding

³⁴⁰ EUROPEAN PARLIAMENT'S COMMITTEE ON LEGAL AFFAIRS, *Artificial Intelligence and Civil Liability*, (2020).

³⁴¹ Sandra Wachter, Brent Mittelstadt, & Luciano Floridi, *Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation*, 7 INTERNATIONAL DATA PRIVACY LAW, 78 (2017).

³⁴² *Id.*

algorithmic accountability, privacy and data protection concerns, the right to equality, concerns about freedom of speech and the lack of contestability.

4.3.1 ALGORITHMIC ACCOUNTABILITY IN DECISION MAKING

As AI systems become more advanced and autonomous, the question of accountability in cases where they are involved in criminal activities becomes increasingly pertinent. The debate over granting legal personhood to AI systems significantly impacts the potential liability of AI developers, operators, and users. A key element of criminal offences is the commission of an act, and in the context of AI, the responsibility for any offence committed by the AI typically falls on the individual who manages or controls it.³⁴³ Additionally, the rise of AI-generated fake content, such as deep fakes, poses a significant challenge to criminal trials by potentially manipulating evidence and casting doubt on the authenticity of information presented in court.³⁴⁴ The legal system must develop effective strategies to counter such manipulations and maintain the integrity of evidence in the digital era.

An intuitively appealing feature of dealing with humans is the ability to argue and challenge decisions when something goes wrong.³⁴⁵ This opportunity for adversarial disputation is an important aspect of accountability and due process. However, algorithmic decision-making, such as risk assessments in bail decisions, lacks this human element.³⁴⁶ Algorithms classify individuals based on data, and these classifications carry a sense of finality, even when potentially erroneous. Traditional due process rights, like oral hearings and cross-examinations, do not directly apply to algorithmic classifications. Individuals can challenge the data used by these systems, but typically do not have the right to contest the design parameters of the algorithms themselves.³⁴⁷

The appeal of algorithmic decision-making lies in its promise to enhance outcomes through rigorous empirical methods, potentially offering more reliability than human

³⁴³ Hifajatali sayyed, *Artificial Intelligence and Criminal Liability in India: Exploring Legal Implications and Challenges*, <https://www.tandfonline.com/doi/epdf/10.1080/23311886.2024.2343195?needAccess=true> (last visited Jun 17, 2024).

³⁴⁴ *Id.*

³⁴⁵ Vincent Chiao, *Fairness, Accountability and Transparency: Notes on Algorithmic Decision-Making in Criminal Justice Special Issue on Law, Liberty and Technology: Criminal Justice in the Context of Smart Machines*, 15 INT'L J. L. CONTEXT 126, 10 (2019).

³⁴⁶ *Id.*

³⁴⁷ *Id.* at 11.

judges.³⁴⁸ However, ensuring the accountability and ongoing reliability of these algorithmic tools may be better achieved through specialized regulatory bodies with the necessary technical expertise, rather than through traditional litigation processes.³⁴⁹

Judges view sentencing as a significant responsibility, requiring numerous decisions and the evaluation of various factors, including the risk of recidivism, which has historically relied on intuition.³⁵⁰ The introduction of risk-assessment software promises to enhance objectivity and consistency in sentencing through empirical data and rigorous methods and also aim to make judicial decisions more transparent, defensible, and accountable while promoting uniformity across jurisdictions.³⁵¹ However, their use raises complex legal issues regarding algorithmic accountability. Empirical evidence does not support the notion that longer sentences reduce recidivism, leading judges to potentially impose harsher penalties on high-risk defendants to mitigate future risks.³⁵² This reliance on algorithmic assessments underscores the need for robust regulatory oversight to ensure these tools are used appropriately, their limitations are understood, and they do not undermine due process, thereby safeguarding the integrity and fairness of the criminal justice system.³⁵³ These bodies would be responsible for overseeing the performance and fairness of algorithms, ensuring they meet high standards of accuracy and integrity, thereby maintaining public trust in the criminal justice system.

Another concern is determining accountability for offenses or violations committed by AI. Similar to how a company is considered a separate legal entity from its owner, and it cannot be held liable for the offences committed by its owner, AI developers often have numerous excuses to deflect allegations.^{354 355} Since AI can think and act rationally like a human and operates independently with its own reasoning, developers are rarely held accountable for any violations AI might commit.³⁵⁶

³⁴⁸ *Id.*

³⁴⁹ *Id.*

³⁵⁰ Willem H. Gravett, *Judicial Decision-Making in the Age of Artificial Intelligence*, 58 in *MULTIDISCIPLINARY PERSPECTIVES ON ARTIFICIAL INTELLIGENCE AND THE LAW* 281, 284 (Henrique Sousa Antunes et al. eds., 2024), https://link.springer.com/10.1007/978-3-031-41264-6_15 (last visited Jun 17, 2024).

³⁵¹ *Id.*

³⁵² *Id.* at 285.

³⁵³ *Id.*

³⁵⁴ *Salomon v A Salomon & Co Ltd*, Appeal Cases 22 (1897).

³⁵⁵ Ishani, *supra* note 338 at 6.

³⁵⁶ *Id.*

4.3.2 LACK OF CONTESTABILITY

The right to contest AI decisions is a crucial aspect of ensuring fairness and accountability in the use of artificial intelligence for decision-making. This document delves into the necessity and implications of such a right, highlighting several key issues and legal concerns. Firstly, the need for a right to contest AI decisions stems from the broader principle of due process, which includes the accuracy of decisions, adherence to the rule of law, and the protection of liberal theory values.³⁵⁷ This right is essential to prevent arbitrary or erroneous decisions by allowing affected individuals to challenge and correct AI-generated outcomes.³⁵⁸ One of the primary legal frameworks discussed is the General Data Protection Regulation (GDPR) in the European Union, which came into effect in May 2018 and provides a structured approach to contesting AI decisions.³⁵⁹ The GDPR mandates transparency, requiring that individuals be informed when a decision is made using automated processes and allowing them to access the data and logic behind these decisions.³⁶⁰ This is intended to empower individuals to contest decisions that significantly affect them.

4.3.3 DATA PROTECTION AND PRIVACY CONCERNS

In *Justice K.S. Puttaswamy (Retd.) & Anr. vs. Union of India & Ors.*³⁶¹, a nine Judge Bench had unanimously reaffirmed the right to privacy as a fundamental right under the Constitution of India. While delivering the judgment Justice D.Y.Chandrachud observed in this case that “Constitutional guarantees cannot be subjected to the vicissitudes of technology”.³⁶² This is more relevant in the context of AI adoption. AI’s reliance on vast amounts of data amplifies privacy and surveillance concerns, as each use of AI can potentially harm or benefit society. AI tools enhance their performance by collecting more data, often leading to over-collection and use of data for undisclosed purposes.³⁶³ Improved AI models can make highly accurate yet non-intuitive and unverifiable inferences about individuals, leading to discriminatory and privacy-

³⁵⁷ Margot E. Kaminski & Urban Jennifer M., *The Right to Contest AI*, 121 COLUM. L. REV. 1957, 1959–1960 (2021).

³⁵⁸ *Id.* at 1961.

³⁵⁹ *Id.* at 1962.

³⁶⁰ *Id.*

³⁶¹ Justice K.S. Puttaswamy (Retd.) & Anr. vs. Union of India & Ors. AIR 2017 SC 4161

³⁶² *Id.*

³⁶³ Kristin N. Johnson & Carla L. Reyes, *Exploring the Implications of Artificial Intelligence Assessing the Promises and Perils of Artificial Intelligence*, 8 J. INT’L & COMP. L. 315, 323 (2021).

invasive profiling.³⁶⁴ As a result, lawmakers and regulators are increasingly scrutinizing data collection methods fueling AI. The pervasive use of machines and AI in daily life intertwines with privacy issues, as machines collect and often sell revealing metadata without users' knowledge.³⁶⁵ This evolving machine-human interaction introduces new legal challenges, particularly in safeguarding privacy and data protection within the justice system.³⁶⁶

AI's integration into the justice system raises significant privacy concerns across various dimensions, including physical, psychological, decisional, and informational privacy.³⁶⁷ Informational privacy, in particular, faces additional challenges due to AI's reliance on vast amounts of data. The right to privacy is increasingly threatened by data regulation issues, mass surveillance, and facial recognition technology. Specific privacy concerns include the threat of data persistence, where data exists beyond the lifetime of the human subject; data repurposing, where data collected for one purpose is used for various other reasons; and data spillovers, where data is collected on individuals who were not the original targets.³⁶⁸ These issues necessitate rigorous scrutiny and robust legal frameworks to protect individual privacy rights within the justice system, ensuring that AI's use does not compromise core societal values or infringe upon personal liberties.

4.3.3.1 USE CASES AND EXAMPLES

The Cambridge Analytica Scandal, 2018

The Cambridge Analytica scandal, which surfaced in early 2018, stands as a stark example of how data misuse can significantly impact privacy, ethics, and democracy. Cambridge Analytica, a political consulting firm, gained unauthorized access to personal data from approximately 87 million Facebook users.³⁶⁹ This data was collected through a third-party app called "This Is Your Digital Life," which misled users into

³⁶⁴ Sandra Wachter & Brent Mittelstadt, *A Right to Reasonable Inferences: Re-Thinking Data Protection Law in the Age of Big Data and AI Survey: Privacy, Data, and Business*, 2019 COLUM. BUS. L. REV. 494, 497 (2019).

³⁶⁵ Johnson and Reyes, *supra* note 363 at 324.

³⁶⁶ *Id.*

³⁶⁷ Teki Akuetteh Falconer, African Digital Rights Hub, Executive Director, *What Does AI Mean for the Right to Privacy?*, (2022), <https://golearn.judges.org/learn/course/569/play/9455/summary-52-what-does-ai-mean-for-the-right-to-privacy>.

³⁶⁸ *Id.*

³⁶⁹ Harshil Kanakia et al., *Cambridge Analytica* ♦ *A Case Study*, 12 INDIAN JOURNAL OF SCIENCE AND TECHNOLOGY 1 (2019).

thinking their information was for academic research.³⁷⁰ The app not only harvested data from the users but also from their Facebook friends, greatly increasing the scope of data collected. This data included personal details, likes, and even private messages in some cases.

Cambridge Analytica used this vast trove of data to create detailed psychological profiles of users. These profiles were then employed to target voters with personalized political advertisements and misinformation during significant events like the 2016 U.S. presidential election and the Brexit referendum.³⁷¹ The scandal exposed severe ethical breaches and brought to light substantial issues regarding data privacy, consent, and the transparency of data usage. Consequently, Facebook faced immense criticism for its data protection practices, and questions about the ethical conduct of Cambridge Analytica were raised globally.³⁷²

The scandal's relevance to the use of AI in the justice system is profound. Firstly, it underscores the importance of data privacy and consent. Much like Cambridge Analytica's exploitation of Facebook users' data, AI systems in the justice system must ensure that data is collected, stored, and used with explicit consent and utmost transparency.³⁷³ Robust privacy laws and regulations are essential to safeguard individuals' data from misuse or exploitation, ensuring the justice system operates with integrity.

Secondly, the scandal highlights the critical need for data integrity and security. The misuse of personal information by Cambridge Analytica demonstrates the potential for data breaches. In the context of the justice system, protecting sensitive information is paramount to maintaining public trust. Effective measures must be in place to secure data, especially as AI is increasingly used for profiling and decision-making in legal contexts.

³⁷⁰ History of the Cambridge Analytica Controversy | Bipartisan Policy Center, <https://bipartisanpolicy.org/blog/cambridge-analytica-controversy/> (last visited Jun 17, 2024).

³⁷¹ Revealed: 50 million Facebook profiles harvested for Cambridge Analytica in major data breach | Cambridge Analytica | The Guardian, <https://www.theguardian.com/news/2018/mar/17/cambridge-analytica-facebook-influence-us-election> (last visited Jun 17, 2024).

³⁷² *Id.*

³⁷³ A Cambridge Analytica-style scandal for AI is coming, MIT TECHNOLOGY REVIEW, <https://www.technologyreview.com/2023/04/25/1072177/a-cambridge-analytica-style-scandal-for-ai-is-coming/> (last visited Jun 17, 2024).

Additionally, the scandal brings attention to the necessity of algorithmic transparency and accountability. AI systems, similar to those used by Cambridge Analytica, often make decisions based on complex and opaque algorithms. This opacity can lead to biased or unfair outcomes. Within the justice system, ensuring transparency and accountability in AI systems is crucial. Stakeholders must be able to understand how AI systems make decisions and have the means to challenge or review these decisions to ensure fairness and justice.

Netherlands- SyRI Case- *Civil society groups v. The Netherlands* (2020)³⁷⁴

On February 5, 2020, the District Court of The Hague in the Netherlands ruled on the legality of the *Systeem Risico Indicatie/System Risk Indication (SyRI)*³⁷⁵, a digital tool designed to detect welfare fraud by analyzing large datasets from various government agencies. Civil society groups, including the Dutch section of the International Commission of Jurists and the trade union FNV, challenged the system's use, arguing that it disproportionately targeted low-income neighbourhoods and lacked sufficient transparency and safeguards to protect individuals' privacy.³⁷⁶ The core issue in the case was whether the SyRI legislation violated Article 8 of the European Convention on Human Rights (ECHR), which guarantees the right to respect for private and family life.³⁷⁷ The plaintiffs contended that the system's use of extensive data processing without adequate oversight or transparency constituted an unlawful invasion of privacy.³⁷⁸ The court ruled in favor of the plaintiffs, declaring that the SyRI legislation failed to meet the requirements of Article 8 ECHR. The court found that the system lacked sufficient transparency and did not provide adequate safeguards against privacy violations.³⁷⁹ As such, the legislation did not strike a fair balance between the public interest in preventing fraud and the right to privacy.

³⁷⁴ *Civil society groups v. The Netherlands*, (2020).

³⁷⁵ The System Risk Indication (SyRI) was implemented under the “Wet structuur uitvoeringsorganisatie werk en inkomen” (SUWI), which translates to the “Work and Income Implementation Structure Act, 2002.” This legislation provided the framework for the deployment of SyRI as a tool to detect and prevent welfare fraud by allowing various government agencies to share data and use algorithmic analysis to identify potential fraud risks.

³⁷⁶ Court Ruling - District Court of The Hague, February 5, 2020, Case Number: C/09/550982/HA ZA 18-388

³⁷⁷ European Convention on Human Rights.

³⁷⁸ *Id.*

³⁷⁹ *Id.*

The SyRI case highlights significant concerns about the use of AI and automated systems in the justice system, particularly regarding privacy and data protection. It underscores the importance of ensuring that such systems are transparent and that there are robust safeguards to protect individuals' rights. The decision sets a legal precedent emphasizing that even beneficial technologies must comply with human rights standards. The ruling has broader implications for the use of AI in the justice system. It suggests that any AI system used for surveillance or decision-making must be transparent and subject to strict oversight to prevent misuse and protect privacy rights. This case illustrates the potential for AI to perpetuate existing biases and disproportionately impact vulnerable populations if not carefully regulated. It calls for a reevaluation of current legal frameworks to ensure they adequately address the challenges posed by new technologies.

European Court of Human Rights - Bulk data collection & Human rights - *Big Brother Watch and Others v the United Kingdom (2018)*³⁸⁰

In the 2018 case of *Big Brother Watch and Others v the United Kingdom*, the European Court of Human Rights (ECtHR) ruled that the UK's bulk data-collection program violated human rights law. The case arose following Edward Snowden's 2013 revelations, challenging the legality of the UK's extensive surveillance practices under Articles 8 (right to respect for private and family life) and 10 (freedom of expression) of the European Convention on Human Rights. The Court found significant shortcomings in the program's safeguards and oversight mechanisms, emphasizing the need for proportionality and effective safeguards in state surveillance activities. This ruling is pivotal in the context of artificial intelligence (AI) in the justice system, highlighting the imperative for AI technologies to operate within strict legal frameworks that uphold privacy rights and ensure adequate oversight. The decision sets a precedent for balancing national security interests with fundamental human rights, particularly concerning the use of advanced technologies in surveillance and data collection.

³⁸⁰ *Big Brother Watch and Others v. United Kingdom* (Applications nos. 58170/13, 62322/14, and 24960/15), (2018).

UK - Facial recognition in public & the right to privacy - *Ed Bridges v South Wales Police (2020)*³⁸¹

In this case, Ed Bridges contested the use of live facial recognition technology (FRT) by the South Wales Police in public spaces. He argued that this practice violated privacy rights, data protection laws, and equality laws. Bridges highlighted that the police had deployed FRT over 60 times since May 2017, collecting facial biometric data from approximately 500,000 individuals without their consent. Initially, in September 2019, the High Court ruled that while FRT did interfere with the privacy rights of those scanned, the existing legal framework provided adequate safeguards. However, Liberty, representing Bridges, appealed this decision. On August 11, 2020, the Court of Appeal overturned the High Court's ruling and sided with Liberty's arguments. The Court of Appeal found that the South Wales Police's use of FRT indeed breached privacy rights, data protection laws, and equality laws. It identified "fundamental deficiencies" in the legal framework governing the use of FRT, concluding that Bridges' rights had been infringed. As a result of the Court of Appeal's decision, the South Wales Police were required to cease using facial recognition technology in public spaces across the UK.

This case is significant as it underscores the importance of robust legal safeguards and oversight in the deployment of surveillance technologies, particularly those involving sensitive biometric data. It also highlights the role of courts in balancing security measures with individual rights, setting a precedent for the regulation of emerging technologies like AI-driven surveillance systems in public settings. Legal implications include the necessity for legislative frameworks to adapt to technological advancements, ensuring they adequately protect privacy and uphold human rights standards. The case also raises considerations for the future integration of artificial intelligence in law enforcement and the need for transparent, accountable, and rights-respecting practices in its implementation.

³⁸¹ Ed Bridges v South Wales Police Court of Appeal (Civil Division), United Kingdom, (2020)

US - Facial Recognition and Privacy law - *Flores et al v Motorola Solutions Inc. et al. (2020)*³⁸²

In this case, the plaintiffs filed a class action complaint in the Illinois Northern District Court, alleging Illinois Biometric Information Privacy Act (BIPA) violations. The lawsuit targeted Motorola and Vigilant Solutions for allegedly collecting and profiting from facial scans of Illinois residents without informed consent or disclosure, in violation of BIPA's strict requirements. The companies were accused of maintaining a vast database of over 18 million facial images sourced from booking photos, which law enforcement agencies used as a facial recognition tool. This practice, plaintiffs argued, facilitated real-time tracking of individuals without their knowledge or consent. The case highlighted significant privacy concerns surrounding the use of facial recognition technology and underscored the importance of regulatory compliance in biometric data collection and storage.

4.3.4 RIGHT TO EQUALITY

Ensuring the right to equality in the context of AI within the justice system is paramount, given its potential to perpetuate biases based on gender, religion, ethnicity, and other characteristics.³⁸³ AI systems, if not carefully designed and monitored, can amplify existing societal prejudices and inadvertently discriminate against marginalized groups.³⁸⁴ For instance, algorithms used in criminal justice for risk assessment or sentencing might disproportionately target certain demographics, leading to unjust outcomes.³⁸⁵ Therefore, there is a critical need for rigorous scrutiny of AI tools to mitigate these biases and uphold the fundamental principle of equality before the law.

A global discussion is imperative to establish guidelines that promote non-biased AI technologies in the justice system. This discussion should focus on developing transparent processes for AI development and governance. Transparency ensures that the underlying algorithms and decision-making processes are understandable and

³⁸² Flores et al. v Motorola Solutions Inc. et al, States District Court for the Northern District of Illinois, (2020)

³⁸³ Hon. Ricardo Perez Manrique, Inter-American Court of Human Rights, Judge, *What Does AI Mean for the Right to Equality?*, (2022), <https://golearn.judges.org/learn/course/569/play/9456/summary-53-what-does-ai-mean-for-the-right-to-equality>.

³⁸⁴ EUROPEAN UNION AGENCY FOR FUNDAMENTAL RIGHTS, *Bias in Algorithms – Artificial Intelligence and Discrimination*, 106 13 (2022).

³⁸⁵ *Id.*

auditable, enabling scrutiny for potential biases. Moreover, oversight mechanisms must be implemented to monitor the deployment of AI in legal contexts effectively.³⁸⁶ Regulatory bodies should enforce compliance with ethical standards and ensure that AI applications respect and protect individuals' rights to equality, regardless of their background or characteristics.³⁸⁷

Implementing robust safeguards is essential to protect the freedom of expression within societies as AI technologies advance in the justice system. The use of AI for surveillance or predictive policing, for example, raises concerns about privacy and the potential chilling effect on free speech.³⁸⁸ Laws and regulations must be adapted or developed to address these challenges, ensuring that AI applications do not infringe upon individuals' rights to freely express themselves without fear of discrimination or undue surveillance.³⁸⁹ By fostering an environment where AI respects and upholds the right to equality, societies can harness its transformative potential while safeguarding fundamental human rights.

4.3.5 FREEDOM OF SPEECH AND EXPRESSION

In the realm of human rights, the freedom to form and develop opinions without interference is fundamental and protected by international agreements like the International Covenant on Civil and Political Rights. This right extends into the digital age, where how information is handled affects our ability to shape our beliefs. With the rise of AI, there is concern that algorithms could influence opinions through curated content and personalized recommendations, especially when controlled by dominant tech companies.

Alongside the right to form opinions, the right to freely express and access information is crucial for democracy. However, AI in content moderation presents new challenges. Unlike humans, AI algorithms may struggle with cultural context and nuances, potentially leading to overly strict content policies. This threatens individuals' rights to seek and receive information without censorship, highlighting the need for clear rules and accountability in how AI moderates content.

³⁸⁶ Nagadivya Balasubramaniam et al., *Transparency and Explainability of AI Systems: From Ethical Guidelines to Requirements*, 159 INFORMATION AND SOFTWARE TECHNOLOGY 107197 (2023).

³⁸⁷ *Id.*

³⁸⁸ EUROPEAN UNION AGENCY FOR FUNDAMENTAL RIGHTS, *supra* note 384 at 16.

³⁸⁹ *Id.*

As AI becomes more influential in shaping public discourse, traditional legal frameworks face new hurdles. The secretive nature of AI algorithms leaves users unsure about how their access to information is controlled. Without transparent rules and oversight, there is a risk that AI could prioritize commercial or political interests over media diversity and free expression. To protect these freedoms in an AI-driven world, it is crucial for academics and policymakers to study these issues closely and establish rules that uphold democratic values and human rights.

4.4 CONCLUSION

The integration of AI into the justice system offers remarkable potential to enhance efficiency, consistency, and objectivity in legal processes. However, this potential is accompanied by significant ethical, legal, and practical challenges that must be thoughtfully addressed to ensure that AI contributes positively to the administration of justice. One of the foremost ethical concerns is the risk of perpetuating existing biases through AI algorithms. These systems learn from historical data, which can embed and amplify societal biases, leading to discriminatory outcomes, especially against marginalized groups. This issue is compounded by the opaque nature of many AI systems, often referred to as “black boxes,” which makes it difficult to scrutinize and understand their decision-making processes. This opacity can erode public trust in AI-assisted legal decisions and the justice system as a whole.

From a legal standpoint, the deployment of AI in the justice system raises critical issues regarding accountability, privacy, and data protection. AI systems’ reliance on vast amounts of data heightens concerns about surveillance and privacy infringement. Technologies such as facial recognition and predictive policing are particularly contentious, as they can impinge on individuals’ privacy rights and freedom of expression. The General Data Protection Regulation (GDPR) in the European Union offers a framework to address these concerns by mandating transparency and allowing individuals to access and contest the data and logic behind AI decisions.

A key legal challenge is ensuring accountability in AI decision-making. Unlike human decisions, which can be contested and debated, algorithmic decisions often lack this level of transparency and scrutiny. This raises significant due process concerns, as individuals have the right to challenge not just the data used by AI systems but also the design and operation of the algorithms themselves. Mechanisms for contestability are

crucial to prevent arbitrary or erroneous decisions and uphold the principles of fairness and justice.

Practically, the deployment of AI in the justice system requires careful consideration of its impact on legal practitioners and the broader legal infrastructure. Training and education for legal professionals on AI technologies and their implications are essential to ensure that these systems are used effectively and ethically. Moreover, the integration of AI must be supported by a robust legal and regulatory framework that evolves in tandem with technological advancements to address emerging challenges proactively.

In conclusion, while AI holds the promise of revolutionizing the justice system by enhancing efficiency and objectivity, it also presents significant ethical, legal, and practical challenges. Addressing these challenges requires a multifaceted approach that includes ensuring transparency, accountability, and the protection of fundamental rights. Ongoing dialogue among policymakers, technologists, legal professionals, and civil society is crucial to developing and implementing ethical guidelines and legal frameworks that keep pace with technological advancements. By doing so, we can harness the benefits of AI while safeguarding justice, equity, and the rule of law in the legal system.

CHAPTER V

REGULATORY FRAMEWORK FOR THE USE OF AI IN THE JUSTICE SYSTEM

5.1 INTRODUCTION

Artificial Intelligence (AI) has swiftly become a transformative force across various sectors, reshaping operations and raising significant ethical and regulatory challenges. One notable area where these challenges are particularly acute is the justice system, where AI technologies promise efficiency gains but also pose risks to fairness, transparency, and accountability. The World Economic Forum’s 2019 white paper, “A Framework for Developing a National Artificial Intelligence Strategy,” is a guiding blueprint for governments worldwide in shaping AI policies.³⁹⁰ The report underscores the necessity for proactive, well-planned national AI strategies to maximise benefits and mitigate risks, advocating for multi-stakeholder cooperation to harness AI’s full potential and minimize adverse impacts.³⁹¹ AI presents unique challenges, unlike traditional regulatory approaches that prescribe clear rules based on known parameters. Moreover, the rapid evolution of AI necessitates regulatory frameworks that are comprehensive and adaptable to new developments and emergent behaviours.

This chapter explores the evolving landscape of AI regulation within the justice system, emphasizing principles of traceability, testability, and liability. These principles are crucial for ensuring that AI applications uphold legal standards and ethical norms, while also providing mechanisms for accountability when AI systems fail or produce unintended consequences.³⁹² By examining existing regulatory efforts and their implications across selected jurisdictions, the aim is to shed light on the complexities of regulating AI in the justice system and offer insights into effective strategies for balancing innovation with safeguarding fundamental rights and principles of justice. This chapter examines the current state of AI regulation in India, examining existing laws, policy initiatives, and regulatory gaps. By analyzing global best practices and

³⁹⁰ A Framework for Developing a National Artificial Intelligence Strategy, INDIAAI (2019), <https://indiaai.gov.in/research-reports/a-framework-for-developing-a-national-artificial-intelligence-strategy> (last visited Jun 17, 2024).

³⁹¹ *Id.*

³⁹² Regulating AI can be straightforward, with eternal vigilance, WORLD ECONOMIC FORUM (2024), <https://www.weforum.org/agenda/2024/05/why-regulating-ai-can-be-surprisingly-straightforward-providing-you-have-eternal-vigilance/> (last visited Jun 17, 2024).

adapting them to local contexts, India aims to establish a framework that supports the ethical development and deployment of AI technologies while safeguarding societal interests and promoting inclusive growth. As AI continues to evolve, so too must our regulatory frameworks evolve, ensuring that they remain robust and responsive to the challenges and opportunities presented by this transformative technology.

5.2 AI REGULATORY FRAMEWORK IN INDIA

AI is poised to revolutionise various sectors of the economy and society in India, promising significant advancements in healthcare³⁹³, agriculture³⁹⁴, education³⁹⁵, and governance³⁹⁶. As AI technologies become increasingly integrated into everyday life, the need for a robust regulatory framework becomes paramount to harness their potential while mitigating associated risks. In India, the landscape for AI regulation is evolving amidst a backdrop of rapid technological adoption and diverse societal challenges. While AI holds promise for enhancing efficiency, productivity, and innovation, it also raises critical concerns regarding privacy, data security, bias, and job displacement.

Currently, India lacks comprehensive legislation specifically addressing AI³⁹⁷, relying instead on existing laws that indirectly regulate aspects of AI., such as data protection under the Personal Data Protection Act, 2023 and cybersecurity under the Information Technology Act, 2000. This regulatory approach poses challenges as it may not adequately cover AI technologies' unique ethical and legal dimensions. Efforts are underway to formulate a coherent AI regulatory framework in India that addresses these complexities. The government, academia, industry stakeholders, and civil society are actively engaged in discussions to draft policies that promote innovation while ensuring ethical standards and accountability. Key considerations include balancing regulatory

³⁹³ Khadijabibi Bangdiwala, *AI Adoption and Healthcare in India: An Overview*, INDIAAI (2024), <https://indiaai.gov.in/article/ai-adoption-and-healthcare-in-india-an-overview> (last visited Jun 17, 2024).

³⁹⁴ Parul Saxena, *AI Impact on India: How AI Will Transform Indian Agriculture*, INDIAAI (2021), <https://indiaai.gov.in/article/ai-impact-on-india-how-ai-will-transform-indian-agriculture> (last visited Jun 17, 2024).

³⁹⁵ Parul Saxena, *AI Impact on India: AI in Education Is Changing India's Learning Landscape*, INDIAAI (2022), <https://indiaai.gov.in/article/ai-impact-on-india-ai-in-education-is-changing-india-s-learning-landscape> (last visited Jun 17, 2024).

³⁹⁶ Raghav Ravinutala, *AI in Governance: Building India for the Future*, INDIAAI (2022), <https://indiaai.gov.in/article/ai-in-governance-building-india-for-the-future> (last visited Jun 17, 2024).

³⁹⁷ Jenny Gesley et al., *Regulation of Artificial Intelligence in Selected Jurisdictions*, REGULATION OF ARTIFICIAL INTELLIGENCE IN SELECTED JURISDICTIONS [i], 40 (2019).

oversight with fostering a conducive environment for AI research and development, nurturing talent, and promoting responsible AI deployment.

5.2.1 NATIONAL INITIATIVES

Report of the Artificial Intelligence Task Force

On August 24, 2017, the Ministry of Industry and Commerce in India established an eighteen-member Task Force on AI for India's Economic Transformation, comprising experts, academics, industry leaders, and representatives from various governmental bodies, including NITI Aayog, the Ministry of Electronics and Information Technology, the Department of Science and Technology, the Unique Identification Authority of India, and the Defence Research and Development Organization.³⁹⁸ This task force completed its report in January 2018, which analyzed the application of AI and its major challenges across ten key sectors: Manufacturing, FinTech, Agriculture, Healthcare, Technology for the Differently-abled, National Security, Environment, Public Utility Services, Retail and Customer Relationship, and Education.³⁹⁹ The report proposed potential solutions for leveraging AI in these domains to enhance India's economic growth and address sector-specific challenges.

Ministry of Electronics and Information Technology Committees

The Ministry of Electronics and Information Technology in India has established four committees to promote AI research.⁴⁰⁰ These committees, led by directors of IITs, Nasscom, and eminent researchers, focus on:

- (i) platforms and data for AI,
- (ii) leveraging AI for identifying National Missions in key sectors,
- (iii) mapping technological capabilities, policy enablers, skilling, reskilling, and R&D,
- (iv) cybersecurity, safety, legal, and ethical issues.

³⁹⁸ Artificial Intelligence Task Force, <https://www.aitf.org.in/> (last visited Jun 17, 2024).

³⁹⁹ The AI Task Force Report - The first steps towards India's AI framework — The Centre for Internet and Society, <https://cis-india.org/internet-governance/blog/the-ai-task-force-report-the-first-steps-towards-indias-ai-framework> (last visited Jun 17, 2024).

⁴⁰⁰ Digital India: IT ministry set up four committees to encourage AI research | Mint, (2018), <https://www.livemint.com/Politics/h2NthxiA7u5VhiDJqfTjcM/Digital-India-IT-ministry-set-up-four-committees-to-encoura.html> (last visited Jun 17, 2024).

These committees were constituted to examine AI's application in citizen-centric services, data platforms, skilling and R&D, and legal, regulatory, and cybersecurity perspectives.⁴⁰¹

The INDIAai portal

INDIAai, established through collaboration between the Ministry of Electronics and Information Technology (MeitY), National e-Governance Division, and National Association of Software and Service Companies (NASSCOM), was launched on May 30, 2020.⁴⁰² It serves as a unified platform for artificial intelligence and allied fields in India, offering a wealth of resources such as articles, news, interviews, and updates on investment funding tailored for AI startups, companies, and educational institutions involved in the sector.⁴⁰³ Additionally, the portal distributes documents, case studies, and research reports to support comprehensive knowledge sharing and advance the AI ecosystem across the country.

5.2.2 THE AI REGULATORY FRAMEWORK

As of now, there is no specific legislation or guidelines addressing the issue of regulation of AI in India. However, it has set up various initiatives and guidelines focused on ensuring the ethical development and effective deployment of AI technologies.

NITI Aayog Discussion Paper on a National AI Strategy

On February 1, 2018, Finance Minister Arun Jaitley announced that NITI Aayog would lead India's national AI program, supporting startups and centers of excellence in AI training and research. Following this, the Committee of Secretaries tasked NITI Aayog with creating a National Strategy Plan for AI, consulting with relevant ministries, academia, and the private sector. On June 4, 2018, NITI Aayog published a discussion paper outlining the strategy, focusing on leveraging AI for economic growth, social development, and inclusive growth. It highlighted five key sectors⁴⁰⁴: Healthcare, Agriculture, Education, Smart Cities/Infrastructure, and Smart Mobility/Transportation

⁴⁰¹ Vidushi Marda, *Artificial Intelligence Policy in India: A Framework for Engaging the Limits of Data-Driven Decision-Making*, 376 PHIL. TRANS. R. SOC. A. 20180087 (2018).

⁴⁰² Vikaspedia Domains, <https://vikaspedia.in/education/resource-links/indiaai-portal> (last visited Jun 22, 2024).

⁴⁰³ *Id.*

⁴⁰⁴ Arnab Kumar, *National Strategy for Artificial Intelligence*, NITI AAYOG (2018).

emphasising the social sector's impact. The paper included over thirty policy recommendations, such as investing in research, promoting reskilling, accelerating AI adoption, and ensuring AI ethics, privacy, and security.⁴⁰⁵ Since then, certain recommendations from the strategy have been implemented, such as developing high-quality datasets to foster research and innovation, and establishing legislative frameworks for data protection and cybersecurity.

Principles for Responsible AI-NITI Aayog

In February 2021, NITI Aayog developed the Principles for Responsible AI as an extension of India's National Artificial Intelligence Strategy.⁴⁰⁶ During its development, the approach paper delves into ethical considerations, drawing insights from expert consultations and interviews with leading agencies implementing AI solutions in India. These considerations are categorized into system and societal aspects and are thoroughly examined. System considerations primarily revolve around foundational principles in decision-making, ensuring fair inclusion of beneficiaries, and establishing accountability for AI decisions.⁴⁰⁷ Societal considerations focus on assessing the impact of automation on job creation and employment, acknowledging that this area remains dynamic and requires a long-term strategy to harness AI's economic potential effectively.⁴⁰⁸ Furthermore, the paper previews legal and regulatory approaches for overseeing AI systems. Recognising the diverse stakeholders in the current AI ecosystem—including private entities, public institutions, research bodies, and legal entities—it underscores the importance of establishing universally accepted norms and swift resolution mechanisms for disputes.⁴⁰⁹

The document outlines seven overarching principles for the responsible governance of AI systems: ensuring safety and reliability, promoting inclusivity and non-discrimination, upholding equality, safeguarding privacy and security, maintaining

⁴⁰⁵ *Id.*

⁴⁰⁶ RESPONSIBLE AI #AIFORALL -Approach Document for India Part 1 – Principles for Responsible AI, (2021), <https://www.niti.gov.in/sites/default/files/2021-02/Responsible-AI-22022021.pdf>.

⁴⁰⁷ Responsible AI: Part 1 - Principles for Responsible AI, INDIAAI, <https://indiaai.gov.in/research-reports/responsible-ai-part-1-principles-for-responsible-ai> (last visited Jun 17, 2024).

⁴⁰⁸ *Id.*

⁴⁰⁹ *Id.*

transparency, enforcing accountability, and prioritizing and reinforcing positive human values.⁴¹⁰

In August 2021, NITI Aayog released the second part of its Responsible AI approach document, focusing on implementing principles for ethical AI usage following extensive consultations with experts from research, law, non-profits, civil society, and the private sector.⁴¹¹ The document emphasizes the crucial role of government in advancing responsible AI implementation across social sectors through partnerships with the private sector and research organizations. It highlights the importance of regulatory measures, policy development, capacity building initiatives, and fostering ethical practices among private entities to ensure AI is deployed responsibly and ethically.⁴¹²

The Information Technology Rules (Intermediary Guidelines and Digital Media Ethics Code), 2021

The Information Technology Rules (Intermediary Guidelines and Digital Media Ethics Code), 2021, introduced by the Government of India under the Information Technology Act of 2000, establish guidelines for regulating social media intermediaries, OTT platforms, and digital news media. These rules came into effect on May 26, 2021, with subsequent updates on April 6, 2023.⁴¹³

The draft National Data Governance Framework Policy (NDGFP)

The draft National Data Governance Framework Policy (NDGFP) was unveiled by the Ministry of Electronics and Information Technology (MeitY) on May 26, 2022. The policy's goal is to update and improve the processes of government data collection and management. According to the draft, the primary aim of the NDGFP is to create a

⁴¹⁰ RESPONSIBLE AI #AIFORALL -Approach Document for India Part 1 – Principles for Responsible AI, *supra* note 406.

⁴¹¹ Responsible AI: Part 2 - Operationalizing Principles for Responsible AI, INDIAAI (2021), <https://indiaai.gov.in/research-reports/responsible-ai-part-2-operationalizing-principles-for-responsible-ai> (last visited Jun 17, 2024).

⁴¹² *Id.*

⁴¹³ Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 (updated 06.04.2023)-.pdf, <https://www.meity.gov.in/writereaddata/files/Information%20Technology%20%28Intermediary%20Guidelines%20and%20Digital%20Media%20Ethics%20Code%29%20Rules%2C%202021%20%28updated%2006.04.2023%29-.pdf> (last visited Jun 18, 2024).

supportive environment for AI and data-driven research and startups in India by developing a comprehensive dataset repository.⁴¹⁴

The Information Technology Act,2000

The Information Technology Act, 2000, along with its amendments, forms the basis of the current regulatory framework for digital technologies, including AI, in India. However, the IT Act shows significant limitations in addressing the complexities introduced by emerging technologies like AI. One major shortcoming is the lack of comprehensive provisions concerning user rights, trust, and safety, which are crucial for AI regulation. The Act does not sufficiently address the regulatory needs of high-risk automated decision-making systems, nor does it recognize the full spectrum of new cybercrimes that have emerged alongside advanced technologies. This gap includes the absence of distinct regulatory approaches for managing harmful and illegal content generated by AI systems.

Furthermore, the IT Act does not provide adequate principles for data protection and privacy, which are vital given the extensive data processing capabilities of AI systems. The existing regulatory structure is also hampered by the lack of a coordinated and harmonized institutional body capable of overseeing AI-related issues effectively. This inadequacy extends to the absence of a swift and efficient adjudicatory mechanism necessary for resolving AI-related disputes. Additionally, the current framework falls short in terms of cybersecurity incident response, lacking the mechanisms required to manage and mitigate the unique threats posed by AI technologies. The proposed Digital India Act seeks to address these deficiencies by introducing a more robust and dynamic regulatory framework that can adapt to technological advancements and ensure the ethical and accountable use of AI across various sectors.

The Digital Personal Data Protection Act,2023

The Digital Personal Data Protection Act of 2023 is an Act of the Parliament of India to provide for the processing of digital personal data in a manner that recognises both the right of individuals to protect their personal data and the need to process such personal data for lawful purposes and for matters connected therewith or incidental thereto.

⁴¹⁴ National Data Governance Framework Policy, (2022).

The Act is positioned as a comprehensive regulatory framework governing the interaction between personal data and AI technologies. It applies to both fully and partially automated processes involving personal data, encompassing AI-driven activities such as data collection, disclosure, and other forms of processing. Entities overseeing AI usage, known as data fiduciaries, must adhere to stringent obligations under the Act. These include implementing robust security measures, obtaining explicit consent, specifying the purposes of data collection through privacy notices, facilitating grievance redressal, and enabling rights such as data erasure.

The Proposed Digital India Act

The proposed Digital India Act (DIA) introduces several key initiatives to regulate AI within the justice system. Central to these initiatives is the establishment of a specialized and dedicated adjudicatory mechanism designed to handle online civil and criminal offenses.⁴¹⁵ This mechanism aims to be accessible and efficient, providing timely remedies, resolving cyber disputes, and developing a unified cyber jurisprudence to enforce the rule of law online. Additionally, the DIA places a strong emphasis on algorithmic accountability, requiring digital entities to maintain transparency and conduct periodic risk assessments of their AI systems.⁴¹⁶ This ensures that high-risk AI systems undergo rigorous legal and institutional quality testing to examine regulatory models and ensure accountability.

The ethical use of AI is another critical aspect addressed by the DIA. The Act highlights the importance of using AI tools in a manner that protects user rights and choices, with provisions for effective and proportionate penalties for non-compliance.⁴¹⁷ Privacy and security measures are also significantly strengthened under the DIA, which mandates stringent regulations for privacy-invasive devices and strict KYC requirements for their retail sales, aiming to safeguard individual privacy in the digital domain.⁴¹⁸ Furthermore, the DIA proposes regulations for AI-based ad-targeting and content moderation, focusing on preventing misuse and ensuring ethical standards in automated decision-making processes.

⁴¹⁵ Ministry of Electronics and Information Technology, Government of India, *Proposed Digital India Act, 2023*, (2023).

⁴¹⁶ *Id.*

⁴¹⁷ *Id.*

⁴¹⁸ *Id.*

5.3 AI REGULATORY FRAMEWORK IN THE U.S

According to the Artificial Intelligence Index 2024⁴¹⁹, published by Stanford University in the US, the number of AI-related regulations has grown substantially over the past year and the last five years. In 2023, there were 25 regulations concerning AI, a significant rise from only one in 2016.⁴²⁰ In the previous year alone, the total number of AI-related regulations increased by 56.3%.⁴²¹ Notable attempts to regulate AI are as follows:

- The National Defense Authorization Act for Fiscal Year 2019, which directs the Department of Defense to undertake various AI-related activities, including appointing a coordinator for AI initiatives.
- The National AI Initiative Act of 2020 aimed at expanding AI research and development and establishing the National Artificial Intelligence Initiative Office to oversee and implement the national AI strategy.

In January 2023, the White House Office of Science and Technology Policy published its Blueprint for an AI Bill of Rights⁴²², and the National Institute of Standards and Technology released an AI Risk Management Framework⁴²³. In 2023 two more broad policy frameworks, SAFE Innovation Framework for AI Policy⁴²⁴ and Blumenthal & Hawley Comprehensive AI Framework⁴²⁵, seeking bipartisan support, were announced to guide the Congress in developing future AI legislation.

In addition to these laws, various frameworks and guidelines guide AI regulation, such as:

⁴¹⁹ STANFORD UNIVERSITY, *Artificial Intelligence Index Report 2024-Chapter 7: Policy and Governance*, (2024), https://aiindex.stanford.edu/wp-content/uploads/2024/04/HAI_AI-Index-Report-2024_Chapter_7.pdf.

⁴²⁰ *Id.* at 28.

⁴²¹ *Id.*

⁴²² Blueprint for an AI Bill of Rights | OSTP, THE WHITE HOUSE, <https://www.whitehouse.gov/ostp/ai-bill-of-rights/> (last visited Jun 18, 2024).

⁴²³ NIST Risk Management Framework Aims to Improve Trustworthiness of Artificial Intelligence, NIST (2023), <https://www.nist.gov/news-events/news/2023/01/nist-risk-management-framework-aims-improve-trustworthiness-artificial> (last visited Jun 18, 2024).

⁴²⁴ SCHUMER'S SAFE Innovation Framework.pdf, https://www.democrats.senate.gov/imo/media/doc/schumer_ai_framework.pdf (last visited Jun 18, 2024).

⁴²⁵ Blumenthal & Hawley Announce Bipartisan Framework on Artificial Intelligence Legislation | U.S. Senator Richard Blumenthal of Connecticut, (2023), <https://www.blumenthal.senate.gov/newsroom/press/release/blumenthal-and-hawley-announce-bipartisan-framework-on-artificial-intelligence-legislation> (last visited Jun 18, 2024).

The White House Executive Order issued by US President Joe Biden on October 30, 2023, titled “Safe, Secure, and Trustworthy Development and Use of AI,” builds on prior efforts to combat algorithmic discrimination and secure voluntary commitments from major tech companies.⁴²⁶ The order addresses eight key policy areas: establishing new AI safety and security standards, protecting against AI-enabled fraud and deception, enhancing cybersecurity, safeguarding privacy, advancing equity and civil rights, promoting responsible AI use in healthcare and education, fostering innovation and competition, and strengthening US leadership in AI globally.⁴²⁷ It focuses on federal agencies and developers of foundational models, mandating the creation of federal standards and requiring developers of powerful AI systems to share safety test results with the government.

The White House Blueprint for an AI Bill of Rights, which provides guidance on equitable access and use of AI systems, outlines five principles for designing and deploying automated systems: safe and effective systems, protection against algorithmic discrimination, data privacy, notice and explanation, and human alternatives and fallbacks.⁴²⁸

Several states have also enacted comprehensive privacy laws affecting AI, such as California’s Privacy Protection Act⁴²⁹ which regulates automated decision-making and Illinois’ Biometric Information Privacy Act⁴³⁰, allows for significant damages in cases of violation.

There is currently no comprehensive federal legislation in the US specifically regulating AI, but existing laws apply to AI-related activities. Developers, users, operators, and deployers of AI should seek legal advice to understand potential liabilities. The White House Executive Order on AI outlines eight principles to guide responsible AI development: ensuring AI is safe and secure, promoting responsible innovation and

⁴²⁶ Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence, FEDERAL REGISTER (2023), <https://www.federalregister.gov/documents/2023/11/01/2023-24283/safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence> (last visited Jun 18, 2024).

⁴²⁷ United States approach to artificial intelligence, [https://www.europarl.europa.eu/RegData/etudes/ATAG/2024/757605/EPRS_ATA\(2024\)757605_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/ATAG/2024/757605/EPRS_ATA(2024)757605_EN.pdf) (last visited Jun 18, 2024).

⁴²⁸ Blueprint for an AI Bill of Rights | OSTP, *supra* note 422.

⁴²⁹ California Legislative Information-California Consumer Privacy Act of 2018, https://leginfo.ca.gov/faces/codes_displayText.xhtml?division=3.&part=4.&lawCode=CIV&title=1.81.5 (last visited Jun 18, 2024).

⁴³⁰ 740 ILCS 14/ Biometric Information Privacy Act., <https://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=3004&ChapterID=57> (last visited Jun 18, 2024).

competition, supporting American workers, advancing equity and civil rights, protecting consumers of AI products, safeguarding privacy and civil liberties, managing risks in government AI use, and exercising global leadership in AI progress.⁴³¹

5.4 AI REGULATORY FRAMEWORK IN UK

The government published its national AI strategy in 2021, outlining its ambition to make Britain a global AI superpower over the next decade.⁴³² However, the UK government's AI Regulation White Paper⁴³³ of August 3, 2023, indicates that the UK does not plan to implement broad AI regulation soon. Instead, they advocate for a “principles-based framework” allowing existing sector-specific regulators to interpret and apply guidelines to AI development and use within their respective areas.⁴³⁴ The UK government proposed a context-based, proportionate approach to AI regulation, relying on existing sector-specific laws to establish guardrails for AI systems. The UK believes that a non-statutory approach to applying the AI framework provides “critical adaptability” to keep up with the fast and unpredictable advancements in AI technology.⁴³⁵ However, after an initial period of non-statutory implementation, the UK may consider introducing a statutory duty for regulators to have “due regard” to these principles.⁴³⁶ The UK Government's Office for Artificial Intelligence, established to oversee the implementation of the UK's National AI Strategy, will undertake key functions to support the framework. These include monitoring and evaluating the effectiveness of the regulatory framework, assessing and managing AI-related risks across the economy, and promoting compatibility with international regulatory frameworks.⁴³⁷

⁴³¹ Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence, *supra* note 426.

⁴³² National AI Strategy - HTML version, GOV.UK (2021), <https://www.gov.uk/government/publications/national-ai-strategy/national-ai-strategy-html-version> (last visited Jun 18, 2024).

⁴³³ A pro-innovation approach to AI regulation, GOV.UK, <https://www.gov.uk/government/publications/ai-regulation-a-pro-innovation-approach/white-paper> (last visited Jun 18, 2024).

⁴³⁴ *Id.*

⁴³⁵ A pro-innovation approach to AI regulation: government response, GOV.UK, <https://www.gov.uk/government/consultations/ai-regulation-a-pro-innovation-approach-policy-proposals/outcome/a-pro-innovation-approach-to-ai-regulation-government-response> (last visited Jun 18, 2024).

⁴³⁶ *Id.*

⁴³⁷ A pro-innovation approach to AI regulation, GOV.UK, <https://www.gov.uk/government/publications/ai-regulation-a-pro-innovation-approach/white-paper> (last visited Jun 18, 2024).

The White Paper identifies several types of risks associated with AI that the principles-based framework aims to address through appropriate interventions. These include risks to human rights, safety, fairness, privacy and agency, societal well-being, and security. These risks highlight the potential negative impacts of AI technologies across various domains, underscoring the need for regulatory measures to mitigate these challenges and ensure responsible AI development and deployment.⁴³⁸

It introduces five principles guiding regulators in overseeing AI development across sectors.⁴³⁹ The first principle focuses on ensuring robust and secure AI systems through continuous risk management; the second principle emphasizes transparency and explainability, requiring AI actors to disclose essential information to enhance accountability, especially for higher-risk applications; the third principle centers on fairness, defining sector-specific standards to prevent discrimination and ensure equitable outcomes; the fourth principle forms the governance measures, emphasizing clear accountability and robust frameworks for oversight; the fifth principle highlights accessible redress mechanisms, updating guidance to resolve AI-related issues transparently.⁴⁴⁰ These principles aim to promote responsible AI deployment, uphold ethical standards, and protect societal interests across sectors.

There are several domestic laws that will affect the development or use of AI, including but not limited to the following: The Equality Act 2010 ensures that AI systems avoid discriminatory practices based on protected characteristics such as race, gender, age, or disability, promoting fairness in automated decision-making.⁴⁴¹ The UK Data Protection Act 2018 governs personal data processing, emphasizing transparency, consent, and data protection and these regulations require AI operations to adhere to ethical data practices, granting individuals rights over their data, such as access, correction, or deletion.⁴⁴² The National Cyber Security Centre's 2022 guidelines provide a framework for assessing the security and effectiveness of AI tools in cybersecurity, ensuring robust and reliable AI systems that protect against cyber threats.⁴⁴³ Lastly, currently in draft,

⁴³⁸ A pro-innovation approach to AI regulation, *supra* note 433.

⁴³⁹ A pro-innovation approach to AI regulation, *supra* note 437.

⁴⁴⁰ *Id.*

⁴⁴¹ Expert Participation, *Equality Act 2010*, <https://www.legislation.gov.uk/ukpga/2010/15/contents> (last visited Jun 18, 2024).

⁴⁴² Data protection, GOV.UK, <https://www.gov.uk/data-protection> (last visited Jun 18, 2024).

⁴⁴³ National Cyber Strategy 2022 (HTML) - GOV.UK, <https://www.gov.uk/government/publications/national-cyber-strategy-2022/national-cyber-security-strategy-2022> (last visited Jun 18, 2024).

the AI (Regulation) Bill aims to establish a comprehensive legal framework for AI, addressing ethical, legal, and societal implications to ensure safe and responsible AI development and use.⁴⁴⁴

These laws ensure that AI systems avoid discriminatory practices, promote fairness, and adhere to ethical data processing standards, including transparency, consent, and data protection. They also provide frameworks for assessing the security and effectiveness of AI tools, ensuring robust and reliable systems that protect against cyber threats. Additionally, ongoing legislative efforts aim to establish comprehensive legal frameworks addressing the ethical, legal, and societal implications of AI, ensuring its safe and responsible deployment within the justice system.

In 2023, the UK supported the Hiroshima Process for AI principles⁴⁴⁵, whereas the EU introduced its AI Act in 2024. The UK's regulatory stance aligns more closely with the US risk management framework, diverging from EU standards.⁴⁴⁶ Moreover, Brexit adds complexity to the UK's global AI leadership, raising questions about the EU's influence on AI regulation.⁴⁴⁷

5.5 AI REGULATORY FRAMEWORK IN CHINA

The Cyberspace Administration of China, the National Development and Reform Commission, the Ministry of Education, the Ministry of Science and Technology, the Ministry of Industry and Information Technology, the Ministry of Public Security, and the National Radio and Television Administration jointly released the Interim Measures for the Management of Generative Artificial Intelligence Services⁴⁴⁸, which is the first administrative regulation on the management of Generative AI services, which came into effect on August 15, 2023.⁴⁴⁹

⁴⁴⁴ Artificial Intelligence (Regulation) Bill [HL] - Parliamentary Bills - UK Parliament, <https://bills.parliament.uk/bills/3519> (last visited Jun 18, 2024).

⁴⁴⁵ Hiroshima Process International Guiding Principles for Advanced AI system | Shaping Europe's digital future, (2023), <https://digital-strategy.ec.europa.eu/en/library/hiroshima-process-international-guiding-principles-advanced-ai-system> (last visited Jun 18, 2024).

⁴⁴⁶ European Parliament, *The United Kingdom and Artificial Intelligence*.

⁴⁴⁷ *Id.*

⁴⁴⁸ AI Watch: Global regulatory tracker - China | White & Case LLP, (2024), <https://www.whitecase.com/insight-our-thinking/ai-watch-global-regulatory-tracker-china> (last visited Jun 18, 2024).

⁴⁴⁹ Interim Measures for the Administration of Generative Artificial Intelligence Services_Office of the Central Cyberspace Affairs Commission, https://www.cac.gov.cn/2023-07/13/c_1690898327029107.htm (last visited Jun 18, 2024).

In addition to direct AI regulations, China has several other laws and regulations that indirectly impact AI development and usage:

The Administrative Provisions on Deep Synthesis in Internet-based Information Services⁴⁵⁰⁴⁵¹ and the Administrative Provisions on Recommendation Algorithms in Internet-based Information Services⁴⁵²⁴⁵³ govern aspects of internet-based services that utilize AI technologies.

Data-related laws including the Cybersecurity Law, Personal Information Protection Law (PIPL), and Data Security Law influence AI development by addressing data privacy and security concerns. Intellectual property laws such as the Copyright Law of China protect proprietary rights and regulate the use of AI technologies. The Civil Code and Criminal Law of China provide legal frameworks protecting privacy rights and other related rights affected by AI's improper use.⁴⁵⁴

These regulations and laws are significant for China's justice system as they ensure that AI technologies are developed, deployed, and used in accordance with ethical standards, data privacy regulations, intellectual property rights, and overall legal frameworks that safeguard societal rights and interests. They provide a structured approach to managing AI's impact on justice-related issues, ensuring fairness, transparency, and accountability in AI applications within China's legal landscape.

5.6 AI REGULATORY FRAMEWORK IN BRAZIL

Brazil aims to establish regulations for AI through Bill No. 2,338/2023 (Brazil's Proposed AI Regulation) despite the absence of existing codified laws or statutory rules directly governing AI in the country.⁴⁵⁵ Currently there are no laws that directly seek to regulate AI in Brazil. However, Law No. 13,709/2018, the General Data Protection

⁴⁵⁰ Provisions on the Management of Deep Integration of Internet Information Services_State Council Department Documents_China Government Network, https://www.gov.cn/zhengce/zhengceku/2022-12/12/content_5731431.htm (last visited Jun 18, 2024).

⁴⁵¹ effective from January 10, 2023

⁴⁵² Provisions on the Administration of Recommended Algorithms for Internet Information Services_State Council Department Documents_China Government Network, https://www.gov.cn/zhengce/zhengceku/2022-01/04/content_5666429.htm (last visited Jun 18, 2024).

⁴⁵³effective from March 1, 2022

⁴⁵⁴ Global AI Law and Policy Tracker, 10 (2024), https://iapp.org/media/pdf/resource_center/global_ai_law_policy_tracker.pdf.

⁴⁵⁵ AI Watch: Global regulatory tracker - Brazil | White & Case LLP, (2024), <https://www.whitecase.com/insight-our-thinking/ai-watch-global-regulatory-tracker-brazil> (last visited Jun 18, 2024).

Law or the Brazilian Data Protection Law, which provides for the processing of personal data is relevant. The bill aims to prohibit “excessive risk” AI systems, establish a regulatory body for enforcement, and impose reporting obligations for significant security incidents. It also guarantees individual rights such as explanation of AI decisions, protection against discrimination, rectification of biases, and mechanisms for due process.⁴⁵⁶

5.7 THE EU AI REGULATORY FRAMEWORK

The use of AI in the European Union (EU) will be regulated by the Artificial Intelligence Act, the world’s first comprehensive AI law. The EU AI Act establishes a unified regulatory and legal framework for artificial intelligence across the European Union. Initially proposed by the European Commission on April 21, 2021, it was approved by the European Parliament on March 13, 2024, and received unanimous consent from the EU Council on May 21, 2024.⁴⁵⁷ Like the EU’s General Data Protection Regulation, the Act has extraterritorial applicability, impacting providers outside the EU if they have users within the EU.

5.7.1 THE ARTIFICIAL INTELLIGENCE ACT

The EU AI Act encompasses various AI technologies across different sectors, with specific exemptions for AI systems exclusively used for military, national security, research, and non-professional purposes.⁴⁵⁸ It does not grant individual rights but regulates AI system providers and entities deploying AI in a professional setting. Initially proposed by the European Commission on April 21, 2021, it passed the European Parliament on March 13, 2024, and was unanimously approved by the EU Council on May 21, 2024.⁴⁵⁹ It will be fully applicable 24 months after entry into force, but some parts will be applicable sooner. The Act establishes the European Artificial Intelligence Board to facilitate national cooperation and ensure regulatory compliance.

⁴⁵⁶ Presidency of the Republic General Secretariat Sub-chief for Legal Affairs, *General Personal Data Protection Law-2018*, https://www.planalto.gov.br/ccivil_03/_ato2015-2018/2018/lei/113709.htm (last visited Jun 18, 2024).

⁴⁵⁷ EU AI Act: first regulation on artificial intelligence, TOPICS | EUROPEAN PARLIAMENT (2023), <https://www.europarl.europa.eu/topics/en/article/20230601STO93804/eu-ai-act-first-regulation-on-artificial-intelligence> (last visited Jun 18, 2024).

⁴⁵⁸ Artificial Intelligence Act: MEPs adopt landmark law | News | European Parliament, (2024), <https://www.europarl.europa.eu/news/en/press-room/20240308IPR19015/artificial-intelligence-act-meps-adopt-landmark-law> (last visited Jun 18, 2024).

⁴⁵⁹ EU AI Act, *supra* note 457.

Article 3(1) defines an AI system as a machine-based system designed to operate with varying levels of autonomy, capable of exhibiting adaptiveness post-deployment, and tasked with inferring from inputs to generate outputs such as predictions, content, recommendations, or decisions that can influence physical or virtual environments.

The draft of the Act was revised in response to the growing prominence of generative AI systems, such as ChatGPT, which possess general-purpose capabilities not initially accommodated within the primary framework.⁴⁶⁰ As a result, more stringent regulations are anticipated for powerful generative AI systems that have a systemic impact.

The Act categorizes non-exempted AI applications based on their potential risk of harm into four levels: unacceptable, high, limited, and minimal risk, along with an additional category for general-purpose AI.⁴⁶¹ Applications deemed to pose unacceptable risks are prohibited. High-risk applications are subject to stringent requirements for security, transparency, and quality, and must undergo conformity assessments.⁴⁶² Limited-risk applications are only subject to transparency obligations, while minimal-risk applications are not regulated.⁴⁶³ For general-purpose AI, transparency requirements are enforced, with further assessments for high-capability models.⁴⁶⁴

The EU AI Act delineates various risk⁴⁶⁵ categories for AI applications as follows:

Unacceptable Risk: AI applications in this category are prohibited, barring specific exemptions. This includes AI systems that manipulate human behaviour, utilize real-time remote biometric identification (like facial recognition) in public spaces, and those used for social scoring based on personal characteristics, socio-economic status, or behaviour.⁴⁶⁶

High Risk: These AI applications pose significant threats to health, safety, or fundamental human rights. This includes AI used in healthcare, education, recruitment, critical infrastructure management, law enforcement, or the justice system.⁴⁶⁷ These

⁴⁶⁰ *Id.*

⁴⁶¹ *Id.*

⁴⁶² *Id.*

⁴⁶³ *Id.*

⁴⁶⁴ *Id.*

⁴⁶⁵ Article 3(2) : ‘risk’ means the combination of the probability of an occurrence of harm and the severity of that harm;

⁴⁶⁶ EU AI Act, *supra* note 457.

⁴⁶⁷ EU AI Act: first regulation on artificial intelligence, TOPICS | EUROPEAN PARLIAMENT (2023), <https://www.europarl.europa.eu/topics/en/article/20230601STO93804/eu-ai-act-first-regulation-on-artificial-intelligence> (last visited Jun 18, 2024).

systems must adhere to stringent quality, transparency, human oversight, and safety requirements, and in some instances, require a “Fundamental Rights Impact Assessment”⁴⁶⁸ before deployment. They must be evaluated both pre-market and throughout their lifecycle. The list of high-risk applications can be updated without amending the AI Act itself.

General-Purpose AI⁴⁶⁹: Added in 2023, this category includes foundational models like ChatGPT. These AI systems must meet transparency requirements. High-impact general-purpose AI systems such as the more advanced AI model GPT-4, which could pose systemic risks⁴⁷⁰, must undergo comprehensive evaluation processes.

Limited Risk: AI systems in this category have transparency obligations, ensuring users are aware they are interacting with an AI system, enabling informed decision-making. This includes AI that generates or manipulates images, sound, or videos (such as deepfakes⁴⁷¹). Open-source models with publicly available parameters are generally not regulated, with some exceptions.⁴⁷²

Minimal Risk: This includes AI systems used in video games or spam filters, with most AI applications expected to fall into this category. These systems are not regulated, and member states cannot impose additional regulations due to maximum harmonization rules, which override existing national laws concerning these systems.⁴⁷³ A voluntary code of conduct is recommended for this category.

The new regulations prohibit AI applications that threaten rights, including biometric categorization based on sensitive traits and untargeted facial image scraping for databases. They ban emotion recognition in workplaces and schools, social scoring, predictive policing based solely on profiling, and AI that manipulates behavior.⁴⁷⁴ Law

⁴⁶⁸ Article 27 provides for fundamental rights impact assessment for high-risk AI systems.

⁴⁶⁹ defined under Article 3(63), basically means an AI model trained extensively with self-supervision on large datasets, capable of competently performing a wide range of tasks and integrating into various applications, excluding those used solely for research, development, or prototyping.

⁴⁷⁰ According to Article 3(65) Systemic basically means the specific risk posed by the extensive capabilities of general-purpose AI models, which can significantly impact the Union market and propagate negative effects on public health, safety, public security, fundamental rights, or society as a whole across the value chain.

⁴⁷¹ Article 3(60): ‘deep fake’ means AI-generated or manipulated image, audio or video content that resembles existing persons, objects, places or other entities or events and would falsely appear to a person to be authentic or truthful.

⁴⁷² Artificial Intelligence Act, *supra* note 458.

⁴⁷³ *Id.*

⁴⁷⁴ *Id.*

enforcement can use biometric identification only in limited, predefined situations with strict safeguards, and high-risk AI systems must mitigate harms, ensure transparency, and provide citizen oversight.⁴⁷⁵ General-purpose AI models must meet transparency rules, and deepfakes must be clearly labeled.

5.7.2 THE GENERAL DATA PROTECTION REGULATION

The European Parliament and Council of the European Union adopted the GDPR on 14 April 2016, to become effective on 25 May 2018.⁴⁷⁶ The GDPR is an important component of EU privacy law and human rights law and its purpose is to enhance individuals' control and rights over their personal information and to simplify the regulations for international business.⁴⁷⁷ The GDPR does not explicitly mention artificial intelligence (AI) or related terms such as intelligent systems or machine learning. This is because the GDPR focuses more on Internet-related challenges that were relevant when it was drafted rather than on newer issues like AI. However, many GDPR provisions are still relevant to AI. Here, only those aspects which are relevant to use of AI in justice system is enumerated.

Article 5(1)(a) of GDPR requires personal data to be processed lawfully, fairly, and transparently.⁴⁷⁸ Transparency mandates that information provided to data subjects must be concise, accessible, and understandable. Informational fairness ensures data subjects are not misled about data processing, including profiling, supporting accountability by enabling compliance checks.⁴⁷⁹ AI and big data complicate informational fairness due to processing complexity and outcome uncertainty, emphasizing the need for explicability. Substantive fairness pertains to the fairness of automated inferences and decisions, requiring the correction of inaccuracies and prevention of discriminatory effects.⁴⁸⁰ In the context of AI adoption in the justice system, these principles ensure that AI-driven decisions are transparent, fair, and accountable, preventing biases and protecting individuals' rights.

⁴⁷⁵ *Id.*

⁴⁷⁶ EUROPEAN PARLIAMENT. DIRECTORATE GENERAL FOR PARLIAMENTARY RESEARCH SERVICES., THE IMPACT OF THE GENERAL DATA PROTECTION REGULATION ON ARTIFICIAL INTELLIGENCE. (2020), <https://data.europa.eu/doi/10.2861/293> (last visited Jun 18, 2024).

⁴⁷⁷ *Id.*

⁴⁷⁸ *Id.* at 44.

⁴⁷⁹ *Id.*

⁴⁸⁰ *Id.* at 45.

Article 21(1) of the GDPR grants individuals the right to object to the processing of their personal data.⁴⁸¹ This right can be exercised when the individual has grounds relating to their particular situation that warrant the objection.⁴⁸² This right is particularly significant in cases involving profiling, where individuals may object to being subject to automated decision-making based on their personal data.⁴⁸³ The GDPR's provisions ensure that individuals have a mechanism to challenge and potentially halt such processing unless there are overriding legitimate reasons for its continuation. In the context of AI adoption in the justice system, where AI technologies often rely on profiling and statistical analysis of personal data for decision-making, adherence to the right to object under GDPR helps safeguard against potential biases and ensures that AI applications respect individuals' rights and maintain transparency and accountability in legal proceedings.

Under the GDPR, the right to explanation concerning automated decisions is crucial, particularly in AI applications within the justice system. Recital 71 emphasizes safeguards such as specific information and the right to receive an explanation of decisions, while Article 22 mandates basic rights like human intervention, expressing one's view, and contesting decisions without specifying detailed explanations.⁴⁸⁴ This distinction raises issues about whether controllers are obligated to provide personalized explanations, impacting the transparency and accountability of AI algorithms used in legal decision-making.⁴⁸⁵ This regulatory framework aims to balance the need for clarity and fairness in automated decisions with the practical challenges of implementing such rights in complex technological contexts.

5.8 UNESCO'S RECOMMENDATION ON THE ETHICS OF AI

UNESCO's first-ever global standard on AI ethics - the 'Recommendation on the Ethics of Artificial Intelligence' - was adopted by all 193 Member States in November 2021.⁴⁸⁶ It outlines principles aimed at fostering human-centered AI development, emphasizing

⁴⁸¹ *Id.* at 75.

⁴⁸² *Id.*

⁴⁸³ *Id.*

⁴⁸⁴ *Id.* at 64.

⁴⁸⁵ *Id.*

⁴⁸⁶ Recommendation on the Ethics of Artificial Intelligence | UNESCO, <https://www.unesco.org/en/articles/recommendation-ethics-artificial-intelligence> (last visited Jun 18, 2024).

respect for human rights, inclusivity, transparency, and accountability.⁴⁸⁷ The recommendation underscores the need for AI systems to promote societal well-being, avoid harm, and uphold ethical standards throughout their lifecycle.⁴⁸⁸ It encourages international cooperation to address AI's ethical challenges and calls for measures to mitigate risks associated with bias, discrimination, and the misuse of AI technologies.⁴⁸⁹ India, UK, US, China, Brazil and EU have all adopted UNESCO's Recommendations on ethics of AI.

5.9 THE OECD PRINCIPLES ON AI

The Organisation for Economic Co-operation and Development (OECD) is an international organisation that works to build better policies for better lives.⁴⁹⁰ Currently, the European Union, the Council of Europe, the United States, the United Nations, and various other jurisdictions incorporate the OECD's definition of an AI system and its lifecycle into their legislative frameworks and regulatory guidance.⁴⁹¹ These elements, including principles and definitions, are integral components of the OECD Recommendation on Artificial Intelligence. The council recommendation outlines five key values-based principles for the responsible stewardship of trustworthy AI.⁴⁹² These include ensuring AI benefits people and the planet through inclusive growth, sustainable development, and well-being. AI systems should uphold the rule of law, human rights, democratic values, and diversity, with mechanisms for human intervention to maintain fairness. Transparency and responsible disclosure are essential to enable understanding and scrutiny of AI outcomes. AI systems must operate robustly, securely, and safely throughout their lifecycles, with continual assessment and management of potential risks. Finally, accountability is crucial for all parties involved in developing, deploying, or operating AI systems to ensure adherence to these

⁴⁸⁷ Recommendation on the Ethics of Artificial Intelligence - UNESCO Digital Library, <https://unesdoc.unesco.org/ark:/48223/pf0000381137> (last visited Jun 18, 2024).

⁴⁸⁸ Recommendation on the Ethics of Artificial Intelligence | UNESCO, *supra* note 486.

⁴⁸⁹ Recommendation on the Ethics of Artificial Intelligence - UNESCO Digital Library, *supra* note 487.

⁴⁹⁰ About the OECD - OECD, <https://www.oecd.org/about/> (last visited Jun 18, 2024).

⁴⁹¹ AI Principles Overview, <https://oecd.ai/en/principles> (last visited Jun 18, 2024).

⁴⁹² OECD, *What Are the OECD Principles on AI?*, OECD OBSERVER (2019), https://www.oecd-ilibrary.org/economics/what-are-the-oecd-principles-on-ai_6ff2a1c4-en (last visited Jun 18, 2024).

principles.⁴⁹³ India, UK, US, China, Brazil and EU are all parties to the OECD'S AI principles.⁴⁹⁴

5.10 THE 2023 AI SAFETY SUMMIT

The UK hosted the inaugural AI Safety Summit in November 2023, drawing participation from 28 countries spanning Africa, the Middle East, Asia, and the EU.⁴⁹⁵ At the summit, global leaders and AI developers acknowledged the imperative to collectively address the risks associated with frontier AI technologies. This commitment led to the adoption of the Bletchley Declaration, underscoring the urgent need for a unified global effort to ensure AI's safe and responsible development.⁴⁹⁶ Additionally, stakeholders pledged to collaborate on rigorous testing protocols for next-generation AI models, aiming to mitigate critical national security, safety, and societal risks. Furthermore, consensus was reached on supporting the creation of a comprehensive 'State of the Science' report, intended to foster international understanding and alignment on the capabilities and risks posed by frontier AI.

5.11 COMPARATIVE ANALYSIS OF AI REGULATORY FRAMEWORK

5.11.1 INDIA AND US

India's regulatory framework is evolving, with significant focus on data protection, algorithmic accountability, and ethical AI usage through the Digital Personal Data Protection Act 2023 and proposed Digital India Act (DIA). However, it lacks comprehensive AI-specific legislation. In contrast, the US has a robust regulatory environment with both federal and state-level laws. Key regulations include the National AI Initiative Act 2020, White House Blueprint for an AI Bill of Rights 2023, and various state laws, emphasizing AI R&D, privacy, and equitable system deployment. India's focus on data protection and ethical AI usage through the proposed DIA aims to address AI's impact on the justice system by ensuring transparency and accountability. However, the current legal framework may not fully cover AI's unique challenges. The US regulations emphasize preventing discrimination and ensuring

⁴⁹³ *Id.*

⁴⁹⁴ OECD's live repository of AI strategies & policies, <https://oecd.ai/en/dashboards> (last visited Jun 18, 2024).

⁴⁹⁵ AI Safety Summit, AISS 2023, <https://aisswordpress.azurewebsites.net/> (last visited Jun 18, 2024).

⁴⁹⁶ *Id.*

fairness, directly impacting the justice system by promoting equitable outcomes and safeguarding individual rights.

5.11.2 INDIA AND UK

India's regulatory initiatives include the Digital Personal Data Protection Act 2023 and proposed Digital India Act, focusing on ethical AI and data protection. The UK's approach is principles-based, outlined in the AI Regulation White Paper 2023, which emphasizes sector-specific guidelines and flexibility. The UK relies on existing laws like the Equality Act 2010 and Data Protection Act 2018 to ensure AI systems adhere to ethical standards. In India, the proposed Digital India Act aims to enhance AI's impact on justice through algorithmic accountability and transparency. The UK's principles-based framework aims to mitigate AI risks, including those affecting human rights and societal well-being, thus supporting a fair justice system through guidelines on robustness, transparency, and fairness. The UK's principles-based and sector-specific approach offers more flexibility and adaptability compared to India's developing framework. The UK's reliance on existing laws provides a stable foundation for addressing AI's impact on the justice system, whereas India's framework is still on its way to establishing comprehensive coverage.

5.11.3 INDIA AND CHINA

India is in the process of enhancing its AI regulatory framework, focusing on data protection and ethical use. China's regulatory framework is comprehensive and stringent, with regulations such as Algorithmic Recommendation Management Provisions and Deep Synthesis Management Provisions. Multiple authorities, including the Cyberspace Administration of China and the Ministry of Industry and Information Technology, enforce these regulations. India's approach aims to ensure transparency and accountability in AI, which is crucial for the justice system. China's stringent regulations ensure AI applications in the justice system are closely monitored and controlled, emphasizing security and ethical standards, providing robust protection against misuse. China's comprehensive and strict regulatory environment provides more immediate and enforceable protections for the justice system compared to India's developing framework. India's focus on ethical AI and data protection is a positive step, but it needs to develop more comprehensive and enforceable regulations to match China's level of control.

5.11.4 INDIA AND BRAZIL

India's regulatory framework focuses on data protection and ethical AI usage through the Digital Personal Data Protection Act 2023 and proposed Digital India Act. Brazil's AI regulatory framework includes the General Data Protection Law (LGPD) and efforts to establish comprehensive AI legislation focusing on data protection and ethical development. India's proposed regulations aim to enhance transparency and accountability in AI, which is crucial for the justice system. Brazil's focus on data protection and ethical AI development supports a justice system valuing transparency and accountability, similar to India's approach but with a more established data protection law (LGPD). Both India and Brazil emphasize data protection and ethical AI use. However, Brazil's established LGPD offers a more immediate framework for AI regulation compared to India's developing legislation. India's proposed Digital India Act aims to provide comprehensive coverage, which, once implemented, could offer comparable protections to Brazil's framework.

5.11.5 INDIA AND EUROPEAN UNION

India is in the process of enhancing its AI regulatory framework, focusing on data protection and ethical use through the Digital Personal Data Protection Act 2023 and the proposed Digital India Act (DIA). In contrast, the European Union (EU) has established a comprehensive regulatory approach with the AI Act, adopted in March 2024, which categorizes AI systems based on risk levels (unacceptable, high, limited, and minimal risk) and sets stringent requirements for high-risk AI applications. In India, the proposed Digital India Act aims to ensure transparency, accountability, and ethical AI usage, which is crucial for the justice system. However, the current regulatory framework lacks specific AI regulations that directly address the unique challenges AI poses to the justice system. The EU's AI Act includes specific provisions for high-risk AI systems, such as those used in law enforcement and judicial decision-making, ensuring they meet stringent transparency, robustness, and fairness requirements to prevent bias and discrimination in the justice system. The EU's regulatory framework is more advanced and specific compared to India's developing approach. The AI Act's categorization of AI systems based on risk levels and detailed requirements for high-risk applications provide more comprehensive and enforceable protections for the justice system. India's focus on ethical AI and data protection is a positive step, but it

needs to develop more specific and enforceable regulations to match the EU's level of detail and stringency in AI governance.

5.12 CONCLUSION

The comparative analysis of AI regulatory frameworks across India, the United States, China, the European Union, and Brazil reveals a diverse landscape of approaches shaped by each region's legal, cultural, and technological contexts. Each framework reflects varying degrees of maturity, scope, and emphasis on ethical principles, highlighting both strengths and gaps. India is progressing towards a robust AI regulatory framework with its Digital Personal Data Protection Act 2023 and the proposed Digital India Act. These efforts focus on data protection, transparency, and ethical AI use. However, India's framework is still evolving and lacks the specific regulations needed to address the intricate challenges AI presents to the justice system comprehensively.

The United States adopts a sector-specific approach to AI regulation, emphasizing innovation and economic growth while addressing sectoral concerns through guidelines and standards rather than comprehensive legislation. The risk management framework and guidelines, such as the National Institute of Standards and Technology's (NIST) AI Risk Management Framework, provide a flexible yet structured approach to AI governance. However, this can lead to inconsistencies across sectors and less stringent protections for AI applications in the justice system compared to more comprehensive approaches.

China stands out with its early and extensive regulatory measures for AI, including the Algorithmic Recommendation Management Provisions and the Interim Measures for the Management of Generative AI Services. These regulations reflect a centralized and rigorous approach, aiming to control AI development and mitigate risks. China's framework, while comprehensive, also emphasizes state control and surveillance, which may raise concerns about privacy and individual freedoms, especially in applications within the justice system.

Brazil is making strides with its regulatory approach, having established the General Data Protection Law (LGPD) and creating a dedicated authority, the National Data Protection Authority (ANPD), to oversee its implementation. Brazil's framework is focused on data protection and privacy, ensuring that AI systems adhere to principles

of transparency, accountability, and fairness. While Brazil is still developing specific AI regulations, its existing laws provide a solid foundation for protecting individual rights and promoting ethical AI use in the justice system.

The European Union has established a highly detailed and structured regulatory framework with the AI Act, categorizing AI systems based on risk and imposing strict requirements for high-risk applications. This approach ensures robust protections against bias, discrimination, and other risks associated with AI in the justice system. The EU's emphasis on ethical principles aligns well with international guidelines, such as those from UNESCO and the OECD, promoting transparency, fairness, and accountability.

Both UNESCO's Recommendation on the Ethics of AI and the OECD's AI Principles advocate for human rights, fairness, transparency, and accountability. These international guidelines provide a foundational framework that all countries can align with, ensuring a harmonized approach to AI governance globally. The principles emphasize the importance of avoiding discrimination, ensuring privacy, and promoting trustworthy AI systems, which are critical in maintaining public trust in AI technologies.

The EU's AI Act represents the most comprehensive and enforceable framework, particularly in safeguarding the justice system from AI-related risks. The US, while innovative and flexible, requires a more unified approach to ensure consistent protections across sectors. China's extensive regulations provide a robust framework but may conflict with global principles on privacy and human rights. Brazil's focus on data protection through the LGPD is commendable, but it needs to develop more specific AI regulations. India's evolving approach shows promise but needs further development to match the depth and specificity of the EU's regulations.

In conclusion, while each region's regulatory framework has unique strengths, the EU's AI Act stands out for its comprehensive approach, particularly in aligning with international ethical principles and providing robust protections for the justice system. India, the US, China, and Brazil can draw valuable lessons from the EU's framework, integrating its detailed and principle-based approach to enhance its own AI governance structures. Adopting and harmonizing international standards from UNESCO and the OECD will be crucial in fostering trustworthy, ethical, and effective AI systems

globally. It is to be noted that while India is making significant strides in AI regulation, it lags behind the comprehensive and structured approaches seen in the US, UK, and China. The implications for the justice system in India are profound, as the current framework may not adequately address all AI-related challenges, necessitating further legislative and institutional development.

CHAPTER VI

CONCLUSIONS AND SUGGESTIONS

The rise of AI and advanced technologies presents unique challenges to the process of administration of justice. The Chief Justice of India, Dr D Y Chandrachud, in his address at the Indo-Singapore Judicial Conference⁴⁹⁷, highlighted the transformative potential of AI in legal practice and judicial decision-making. While advocating for embracing technological advancements, he cautioned against the risks associated with “high-risk” AI tools, citing concerns about bias and discrimination in judicial adjudication. He emphasized that AI, exemplified by instances like ChatGPT’s use in exploring bail jurisprudence, should be employed cautiously and not as a sole basis for legal decisions due to its limitations and potential for generating unreliable information. He stressed the need for robust auditing mechanisms and capacity building among legal professionals to navigate ethical and legal challenges effectively.

There is no doubt that integrating AI technologies into the justice administration process can enhance the efficiency of the justice system in multiple ways. It can assist judges, lawyers, law enforcement agencies and litigants as well, thereby improving access to justice. The adoption of AI into the Indian justice system is still in its nascent stages, and regulation may seem like an early move. However, technological developments are happening at a rapid rate, and AI applications to the justice administration process are also enhanced day by day, necessitating the regulation of the use of AI in the justice system. Despite these concerns, the current legal framework does not adequately address AI-related issues, and there is no dedicated legislation for AI in India. Use of AI tools in assisting judicial decision-making, legal research, document automation, and predictive policing raises significant questions about accountability for AI-driven actions, particularly concerning developers, operators, and users.

There are various concerns involved in framing an effective regulatory mechanism. The biggest challenge would be the autonomy of AI algorithms, which can operate without direct human intervention, blurring the lines of traditional legal liability based on human intent. Therefore, regulation of AI in India is very essential to address the ethical

⁴⁹⁷ Anmol Kaur Bawa, *Use Of AI In Court Adjudication Presents Both Opportunities & Challenges : CJI DY Chandrachud*, (2024), <https://www.livelaw.in/top-stories/use-of-ai-in-court-adjudication-presents-both-opportunities-challenges-cji-dy-chandrachud-255018> (last visited Jun 22, 2024).

and legal implications arising out of AI adoption. Since AI lacks a guilty mind or ‘*mens rea*’, attributing criminal liability becomes complex. Additionally, the absence of legal personhood for AI systems complicates matters, as legal personhood in India is conferred upon human beings and certain entities, like corporations, but not AI systems. The “black box” nature of some AI systems hinders identifying the rationale behind decisions, complicating liability attribution. Data privacy and security concerns intersect with AI-related criminal liability. Strengthening data protection laws and cybersecurity measures is crucial to prevent misuse of personal data by AI systems. Ethical considerations, responsible AI development, and addressing biases in AI algorithms are also essential to maintain fairness and justice. The proliferation of AI-generated fake content, such as deepfakes, complicates criminal trials by manipulating evidence and raising doubts about its authenticity. The regulatory framework needs to evolve to address these concerns, ensuring transparency and explainability of AI algorithms.

Addressing these challenges requires a multi-faceted approach involving policymakers, legal experts, AI developers, and civil society. This includes considering legal personhood for AI, updating the legal framework to accommodate AI-related offences, enhancing transparency and explainability of AI algorithms, and promoting responsible AI development practices. The legal system must engage in proactive measures to address potential AI-driven crimes and tackle the ethical and societal implications of autonomous AI decision-making. To uphold justice, fairness, and accountability in an increasingly AI-driven world, it is essential to find solutions to these challenges through a collaborative effort. This will help balance technological advancements with legal accountability. As India navigates the complexities of regulating AI, to position itself as a global leader in responsible AI governance, it is essential to set standards that foster trust, transparency, and sustainable technological advancement in the digital age.⁴⁹⁸

6.1 FINDINGS

The comparative analysis of AI adoption in justice system helps to arrive at the following findings:

1. The inadequacy of India’s AI regulatory framework has profound implications for the justice administration process. Issues such as transparency, lack of

⁴⁹⁸ Ameen Jauhar, Vaidehi Misra, and Arghya Sengupta, *supra* note 7.

explainability and algorithmic bias are critical challenges that AI technologies present to the justice system. These challenges underscore the urgent need for effective regulation, especially as AI's role expands in areas like law enforcement and judicial decision-making.

2. Without clear guidelines and regulations, the adoption of AI in the justice system is a risk of perpetuating biases, making arbitrary decisions, and undermining public trust. This can lead to significant ethical and legal issues, impacting the fairness and accountability of judicial processes.
3. India faces significant obstacles, such as the digital divide, which affects access to AI technologies, and varying levels of digital literacy among the population. Additionally, there are socio-economic disparities that may hinder the equitable adoption of AI. Ensuring access to justice in a digital era requires addressing these disparities and fostering an inclusive approach to AI regulation.
4. In India, the adoption of AI in the justice system is significantly hindered by the absence of comprehensive laws or regulations. The current state of AI regulation in India is marked by reliance on existing laws like the Personal Data Protection Act, 2023 and the Information Technology Act, 2000 which are inadequate in addressing the specific ethical and legal dimensions of AI.
5. While national initiatives such as the AI Task Force and various committees under the Ministry of Electronics and Information Technology are steps in the right direction, they fall short of establishing a comprehensive regulatory framework. This lack of a robust regulatory framework is particularly concerning when compared with global efforts to regulate AI.
6. Global regulations such as the European Union's AI Act, UNESCO's Recommendation on the Ethics of AI, and the OECD's AI Principles provide robust models that India can learn from. These frameworks emphasize principles such as human-centred AI development, transparency, accountability, and the protection of human rights. For instance, the EU AI Act categorizes AI systems based on risk levels and sets stringent requirements for high-risk applications, directly addressing the ethical and legal challenges posed by AI.
7. Effective AI integration in India's justice system necessitates the involvement and buy-in of various stakeholders. Engaging these stakeholders ensures

transparency and builds trust in the process. This engagement is vital for the successful implementation of AI technologies within the Indian judiciary.

8. Tailored, high-quality research is critical for informed policy decisions on AI use in India's judiciary. This research must consider India's unique social and cultural context. Interdisciplinary studies will help address the challenges posed by integrating AI into the Indian justice system.
9. Capacity building through training is essential for the successful adoption of AI technologies in India. Structured deployment, including continuous evaluation and improvement, is crucial for effective integration. Public-private partnerships can provide the necessary expertise and resources for developing and deploying AI in the Indian justice system.
10. A phased approach to deploying AI in India's justice system, with continuous evaluation and improvement, is essential for effective integration. This structured deployment ensures that AI technologies are implemented gradually and systematically. Continuous assessment helps refine and enhance AI applications to meet the judiciary's evolving needs.

6.2 SUGGESTIONS

The future of AI in the justice system across these countries presents exciting possibilities. India can further enhance its AI integration by expanding the scope of current initiatives and exploring new applications to address emerging challenges. The adoption of AI in the justice system worldwide highlights the transformative potential of technology to enhance judicial efficiency, accessibility, and fairness. By learning from each other's experiences and best practices, countries can collectively advance the integration of AI in their judicial systems, ensuring that justice is delivered effectively and equitably in the digital age.

India must prioritize the development of a comprehensive and robust AI regulatory framework to harness the benefits of AI while safeguarding the principles of justice and equity. By learning from international examples and addressing the unique challenges faced domestically, India can develop a legal landscape that not only promotes innovation but also ensures that AI technologies are used ethically and responsibly in the justice system. This approach will be crucial in maintaining public trust and upholding the rule of law in the era of AI. The integration of AI in the Indian justice system is currently at a foundational stage, necessitating careful oversight by the

Supreme Court to ensure a coordinated and ethical development process. Without such guidance, the implementation of AI could be haphazard and uncoordinated. Therefore, India needs a robust legislative framework that aligns with international standards. The researcher presents the following suggestions to address the gap in a robust regulatory framework meeting international standards.

1. Establish clear guidelines to ensure AI systems in India are reliable, transparent, and trustworthy. These guidelines should be developed in consultation with legal, technological, and ethical experts. This will help build public confidence in AI applications within the judiciary.
2. Develop ethical standards for AI systems to ensure they respect human rights and democratic values in India. These standards should address issues such as fairness, non-discrimination, and protection of individual rights. Implementing such standards will safeguard against potential abuses and ethical breaches.
3. Implement accountability mechanisms for AI developers and users in the Indian justice system. These mechanisms should include regular audits, compliance checks, and clear protocols for addressing misconduct. Ensuring responsibility will help maintain high standards of AI deployment.
4. Introduce mandatory risk assessments for AI applications used in India's justice system. These assessments should evaluate potential biases, data security issues, and impacts on legal outcomes. Conducting thorough risk assessments will help mitigate adverse effects before AI systems are widely deployed.
5. Ensure AI decisions are transparent and explainable to all stakeholders in India. This involves creating mechanisms for users to understand and challenge AI outputs. Enhancing transparency and explainability will foster trust and allow for informed oversight.
6. Develop a governing charter to ensure AI technologies safeguard due process and constitutional rights in India. This charter should address issues of transparency, bias, and accountability. Adopting such guidelines will create a robust framework for ethical AI use.
7. Conduct extensive consultations with various stakeholders, including judges, lawyers, technologists, and civil society in India. These consultations will ensure transparency and build confidence in the AI integration process.

Engaging diverse perspectives will help create a balanced and inclusive AI framework.

8. Incentivize and commission research on AI governance tailored to India's social and cultural context. This research should explore the implications of AI on legal processes and human rights. High-quality research will provide a solid foundation for informed policy decisions.
9. Include diverse experts in the Supreme Court's AI Committee to oversee AI integration efforts in India. This committee should consist of technologists, ethicists, policy researchers, and legal professionals. A multidisciplinary approach will enhance the committee's ability to address complex AI challenges.
10. Create a data trust for judicial data and establish an open data policy in India. This policy should ensure personal privacy is protected while enabling technologists to innovate with existing datasets. Open datasets will be essential for developing effective and fair AI algorithms.
11. Engage private sector expertise through public-private partnership models to design and deploy AI interventions in India's justice system. It can bring in necessary resources and innovation while maintaining state oversight. Collaborating with private entities will accelerate the development of robust AI solutions.
12. Promote inclusive AI development practices that involve diverse stakeholders across India. This includes engaging underrepresented groups in the design and deployment of AI systems. Inclusive development will ensure that AI solutions are equitable and representative of India's diverse population.
13. Establish continuous monitoring and evaluation protocols for AI systems deployed in India's judiciary. These protocols should include periodic reviews and updates based on performance and ethical considerations. Ongoing monitoring will ensure AI systems remain effective and compliant with evolving standards.
14. Strengthen data protection laws to safeguard personal data used by AI systems in India. This involves updating existing regulations and introducing new measures to address AI-specific data security concerns. Robust data protection laws will protect individuals' privacy and foster trust in AI technologies.

15. Engage in international collaborations to align India's AI regulations with global standards and best practices. Participating in international forums and partnerships will provide access to cutting-edge research and regulatory insights. Aligning with global standards will enhance the credibility and effectiveness of India's AI framework.

At this juncture, it may be rightly discerned that India lacks a comprehensive regulatory framework to govern the use of AI. Law must be clearly framed to match with the upcoming challenges raised by the era of AI. The above suggestions have been made by drawing inspiration from best global practices in this regard understood through this study. This research affirms the hypothesis made at the beginning that the lack of a regulatory framework addressing the ethical and legal implications of the use of AI in the Indian justice system affects the process of administration of justice. By bringing up a robust regulatory framework, India can navigate the complexities of AI integration in its justice system responsibly, ensuring that AI technologies uphold the rule of law, protect human rights, and contribute positively to the delivery of justice in the 21st century.


BIBLIOGRAPHY

BOOKS

1. STUART J. RUSSELL & PETER NORVIG, *ARTIFICIAL INTELLIGENCE: A MODERN APPROACH* 28–29 (Third edition, Global edition ed. 2016).

ARTICLES

1. A. D. Reiling, *Courts and Artificial Intelligence Court Administration at a Time of Uncertainty: Professional Article*, 11 IJCA 1, 3 (2020).
2. Ameen Jauhar, Vaidehi Misra, & Arghya Sengupta, *Responsible AI for the Indian Justice System –A Strategy Paper*, (2021).
3. Andrew Arruda, *An Ethical Obligation to Use Artificial Intelligence: An Examination of the Use of Artificial Intelligence in Law and the Model Rules of Professional Responsibility*, 40 AM. J. TRIAL ADVOC. 443 (2017).
4. BARBARA J GROSZ ET AL., *Artificial Intelligence and Life in 2030*, 52 4 (2016).
5. Caixia Zou, Fangchun Li & Yi'nan Dong, *The Rationale and Approach of the Legal Expert System Construction*, 13 BEIJING LAW REVIEW 204 (2022).
6. Christopher Rigano, *Using Artificial Intelligence to Address Criminal Justice Needs*, NIJ JOURNAL, 1 (2019), [https:// www.nij.gov/journals/280/Pages/using-artificialintelligence-to-address-criminal-justice-needs.aspx](https://www.nij.gov/journals/280/Pages/using-artificialintelligence-to-address-criminal-justice-needs.aspx).
7. *Criminal Law - Sentencing Guidelines - Wisconsin Supreme Court Requires Warning before Use of Algorithmic Risk Assessments in Sentencing - State v. Loomis* 881 N.W.2d 749 (Wis. 2016) Recent Cases, 130 HARV. L. REV. 1530, 1530–1532 (2016).
8. Darren Gingras & Joshua Morrison, *Artificial Intelligence and Family ODR Special Issue: Online Dispute Resolution (ODR)*, 59 FAM. CT. REV. 227, 229 (2021).
9. Elizabeth E. Joh, *Artificial Intelligence and Policing: First Questions*, 41 SEATTLE U. L. REV. 1139, 1139 (2017).
10. Emile Loza de Siles, *AI, on the Law of the Elephant: Toward Understanding Artificial Intelligence*, 69 BUFF. L. REV. 1389, 31 (2021).
11. Emod Veress, *A General Overview of Artificial Intelligence and Its Current Implications in Civil Law*, 11 ACTA UNIV. SAPIENTIAE: LEGAL STUD. 98 (2022).

12. Emily Barber, *Navigating Miller v. Alabama with COMPAS: How Risk Assessment Instruments Square with a Meaningful Opportunity for Release*, 77 NAT'L LAW. GUILD REV. 1, 1-2,24-25 (2020).
13. Fuso Jovia Boahemaa, *The impact of Artificial Intelligence on justice systems*, Trento BioLaw Selected Student Papers, PAPER N. 25 a.a. 2018/2019
14. Gideon Christian, *Predictive Coding: Adopting and Adapting Artificial Intelligence in Civil Litigation*, 97 CAN. B. REV. 486, 488,489 (2019).
15. Harry Surden, *Artificial Intelligence and Law: An Overview*, 35 GA. ST. U. L. REV. 1305, 1326 (2018).
16. Harpreet Kaur, *AI-Powered Indian Courtroom: ChatGPT a Boon or a Bane?*, 4 JUS CORPUS L.J. [601], 275,276 (2023).
17. Harshil Kanakia et al., *Cambridge Analytica*  *A Case Study*, 12 INDIAN JOURNAL OF SCIENCE AND TECHNOLOGY 1 (2019).
18. Kent McFadzien et al., *The Evidence-Based Investigative Tool (EBIT): A Legitimacy-Conscious Statistical Triage Process for High-Volume Crimes*, 4 CMB J EVID BASED POLIC 218 (2020).
19. Kristin Finklea, *Law Enforcement Use of Artificial Intelligence and Directives in the 2023 Executive Order*, 1 LAW ENFORCEMENT USE OF ARTIFICIAL INTELLIGENCE AND DIRECTIVES IN THE 2023 EXECUTIVE ORDER 1 (2023).
20. Kristin N. Johnson & Carla L. Reyes, *Exploring the Implications of Artificial Intelligence Assessing the Promises and Perils of Artificial Intelligence*, 8 J. INT'L & COMP. L. 315, 323 (2021).
21. Marion Oswald, Jamie Grace, Sheena Urwin, Geoffrey Barnes, *Algorithmic Risk Assessment Policing Models: Lessons from the Durham Constabulary HART Model*, 27 INFORMATION AND COMMUNICATIONS TECHNOLOGY LAW 223, 2,3 (2018).
22. Melanie Reid, *A Call to Arms: Why and How Lawyers and Law Schools Should Embrace Artificial Intelligence The Role of Technology in Professional Advice Symposium*, 50 U. TOL. L. REV. 477, 2 (2018).
23. Nagadivya Balasubramaniam et al., *Transparency and Explainability of AI Systems: From Ethical Guidelines to Requirements*, 159 INFORMATION AND SOFTWARE TECHNOLOGY 107197 (2023).

24. Neil Shah, Nandish Bhagat & Manan Shah, *Crime Forecasting: A Machine Learning and Computer Vision Approach to Crime Prediction and Prevention*, 4 VIS. COMPUT. IND. BIOMED. ART 9 (2021).
25. Nyu Wang & Michael Yuan Tian, “*Intelligent Justice*”: *Human-Centered Considerations in China’s Legal AI Transformation*, 3 AI ETHICS 349 (2023).
26. Parth Lalit Sagdeo, *Blending Machine Intelligence with Natural Intelligence: Artificial Intelligence and Law*, 3 Issue 6 INT’L J.L. MGMT. & HUMAN. 1215, 1217 (2020).
27. Paul Armstrong, *Artificial Intelligence: From Law Office to Administrative Proceedings*, 59 JUDGES J. 20 (2020).
28. Richard E. Susskind, *Expert Systems in Law: A Jurisprudential Approach to Artificial Intelligence and Legal Reasoning*, 49 THE MODERN LAW REVIEW 168, 179 (1986).
29. Richmond Thomason, *Logic and Artificial Intelligence*, in THE STANFORD ENCYCLOPEDIA OF PHILOSOPHY (Edward N. Zalta & Uri Nodelman eds., Summer 2020 ed. 2020), <https://plato.stanford.edu/archives/sum2020/entries/logic-ai/> (last visited Jun 10, 2024).
30. Samuel D. Jr. Hodge, *Revolutionizing Justice: Unleashing the Power of Artificial Intelligence*, 26 SMU SCI. & TECH. L. REV. 217, 224 (2023).
31. Sandra Wachter & Brent Mittelstadt, *A Right to Reasonable Inferences: Re-Thinking Data Protection Law in the Age of Big Data and AI Survey: Privacy, Data, and Business*, 2019 COLUM. BUS. L. REV. 494, 497 (2019).
32. Stanley Greenstein, *Preserving the Rule of Law in the Era of Artificial Intelligence (AI)*, 30 A.I. & L. 291, 2 (2022).
33. Suvigya Awasthy, Pintu Babu & Shubhangi Singh, *Application of Artificial Intelligence and Machine Learning in the Indian Legal System: Use Cases for Judiciary, Law Firms, and Lawyers*, 2 Part 2 INDIAN J. INTEGRATED RSCH. L. 1, 5 (2022).
34. Tim Brennan, William Dieterich & Beate Ehret, *Evaluating the Predictive Validity of the COMPAS Risk and Needs Assessment System*, 36 CRIM. JUST. & BEHAVIOR 21, 22,23 (2009).

35. Vidushi Marda, *Artificial Intelligence Policy in India: A Framework for Engaging the Limits of Data-Driven Decision-Making*, 376 PHIL. TRANS. R. SOC. A. 20180087 (2018).
36. Vincent Chiao, *Fairness, Accountability and Transparency: Notes on Algorithmic Decision-Making in Criminal Justice Special Issue on Law, Liberty and Technology: Criminal Justice in the Context of Smart Machines*, 15 INT'L J. L. CONTEXT 126, 10 (2019).
37. Weidong Ji, *The Change of Judicial Power in China in the Era of Artificial Intelligence Law and Artificial Intelligence in Asia*, 7 ASIANJLS 515, 518 (2020).

WEBSITES

1. *Can AI amend the face of the Indian Legal System?*, INDIAai, <https://indiaai.gov.in/article/can-ai-amend-the-face-of-the-indian-legal-system>.
2. *Centre of Excellence for Artificial Intelligence*, National Informatics Centre, <https://www.nic.in/emergings/centre-of-excellence-for-artificial-intelligence/>.
3. *DALL·E: Creating images from text*, <https://openai.com/index/dall-e/>.
4. *Harnessing Machine Learning For Human Justice*, College of Arts & Sciences at Syracuse University, <https://artsandsciences.syracuse.edu/fall-21-magazine/harnessing-machine-learning-for-human-justice/>.
5. IBM Blog (2024), <https://www.ibm.com/blog/judicial-systems-are-turning-to-ai-to-help-manage-its-vast-quantities-of-data-and-expedite-case-resolution>.
6. IBM Watson Discovery, <https://www.ibm.com/products/watson-discovery>.
7. INDIAai, <https://indiaai.gov.in/article/navigating-the-legal-frontier-the-rise-of-ai-in-the-judiciary>.
8. *India's AI Journey: 75@75*, INDIAai, <https://indiaai.gov.in/research-reports/india-s-ai-journey-75-75>.
9. *OpenAI's new language generator GPT-3 is shockingly good—and completely mindless*, MIT Technology Review, <https://www.technologyreview.com/2020/07/20/1005454/openai-machine-learning-language-generator-gpt-3-nlp/>.
10. Prithwish Ganguli, *Predictive Policing and Crime Prevention: The Role of AI*, INDIAai (2023), <https://indiaai.gov.in/article/predictive-policing-and-crime-prevention-the-role-of-ai>.

11. PTI, *World's First Robot Lawyer ROSS Hired by US Law Firm*, mint (2016), <https://www.livemint.com/Politics/bQNLHR96A5G4Kvg81JwWFM/Worlds-first-robot-lawyer-ROSS-hired-by-US-law-firm.html>.
12. *Responsible AI for the Indian Justice System – A Strategy Paper*, Vidhi Centre for Legal Policy, <https://vidhilegalpolicy.in/research/responsible-ai-for-the-indian-justice-system-a-strategy-paper/>.
13. *Rocket Lawyer: Free Legal Documents, Attorneys, Incorporations & Taxes*, <https://www.rocketlawyer.com/>.
14. Stephane Coulaux, Asma Idder, *Artificial Intelligence in Criminal Justice: Invasion or Revolution?*, <https://www.ibanet.org/dec-21-ai-criminal-justice>.
15. Vernor Vinge, *The Coming Technological Singularity: How to Survive in the Post-Human Era* (1993), <https://edoras.sdsu.edu/~vinge/misc/singularity.html>.
16. *What is AI ROSS Intelligence*, <https://rossintelligence.com/what-is-ai.html>.
17. *What is the history of artificial intelligence (AI)?* Tableau, <https://www.tableau.com/data-insights/ai/history>.
18. *Working Paper I - A framework for Constitution Bench cases*, Vidhi Centre for Legal Policy, <https://vidhilegalpolicy.in/research/differentiated-case-management-for-indian-judiciary/>.

**THE NATIONAL UNIVERSITY OF ADVANCED LEGAL STUDIES,
KOCHI**

CERTIFICATE ON PLAGIARISM CHECK

1.	Name of the Candidate	Dhanya K S
2.	Title of the dissertation	Artificial Intelligence in Justice System and Its Ethical and Legal Implications: A Comparative Analysis
3.	Name of the Supervisor	Dr. Nandita Narayan
4.	Similar content % identified	6.5%
5.	Acceptable maximum limit (%)	
6.	Software used	Grammarly
7.	Date of verification	

**Report on plagiarism check, specifying included/excluded items with % of similarity to attached in the Appendix.*

Checked By, (Name, Designation and Signature) :

Name and Signature of the Candidate :

Name and Signature of Supervisor :

CHAPTER I Introduction

by Dhanya K S

General metrics

27,622

characters

3,941

words

245

sentences

15 min 45 sec

reading
time

30 min 18 sec

speaking
time

Score



87

Writing Issues

123

Issues left

11

Critical

112

Advanced

This text scores better than 87%
of all texts checked by Grammarly

Plagiarism



8

%

24

sources

8% of your text matches 24 sources on the web
or in archives of academic publications

CHAPTER II Adoption of Artificial Intelligence in the Justice System

by Dhanya K S

General metrics

51,329	7,111	418	28 min 26 sec	54 min 42 sec
characters	words	sentences	reading time	speaking time

Score



This text scores better than 90% of all texts checked by Grammarly

Writing Issues

204	25	179
Issues left	Critical	Advanced

Plagiarism



27
sources

4% of your text matches 27 sources on the web or in archives of academic publications

CHAPTER III Adoption of Artificial Intelligence in the Justice System: A Comparative Analysis

by Dhanya K S

General metrics

87,330	12,117	672	48 min 28 sec	1 hr 33 min
characters	words	sentences	reading time	speaking time

Score



This text scores better than 85% of all texts checked by Grammarly

Writing Issues

423	75	348
Issues left	Critical	Advanced

Plagiarism



59
sources

7% of your text matches 59 sources on the web or in archives of academic publications

CHAPTER IV: Adoption of AI in Justice System: Ethical and Legal Implications

by Dhanya K S

General metrics

55,683

characters

7,882

words

438

sentences

31 min 31 sec

reading
time

1 hr 0 min

speaking
time

Score



92

Writing Issues

191

Issues left

20

Critical

171

Advanced

This text scores better than 92% of all texts checked by Grammarly

Plagiarism



7
%

50

sources

7% of your text matches 50 sources on the web or in archives of academic publications

CHAPTER V Regulatory Framework For The Use Of Ai In The Justice System

by Dhanya K S

General metrics

62,543	8,204	464	32 min 48 sec	1 hr 3 min
characters	words	sentences	reading time	speaking time

Score



This text scores better than 90% of all texts checked by Grammarly

Writing Issues

244	42	202
Issues left	Critical	Advanced

Plagiarism



58
sources

9% of your text matches 58 sources on the web or in archives of academic publications

CHAPTER VI Conclusions and Suggestions

by Dhanya K S

General metrics

15,700

characters

2,200

words

126

sentences

8 min 48 sec

reading
time

16 min 55 sec

speaking
time

Score



87

Writing Issues

70

Issues left

5

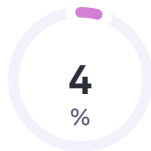
Critical

65

Advanced

This text scores better than 87% of all texts checked by Grammarly

Plagiarism



4

%

9

sources

4% of your text matches 9 sources on the web or in archives of academic publications