

REFORMULATING INDIA'S ARTIFICIAL INTELLIGENCE REGULATORY FRAMEWORK: RETROSPECT AND PROSPECT

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Abstract

Policymakers, technologists, researchers, and members of civil society from all around the world have frequently emphasized the economic possibilities of deploying artificial intelligence. In addition to the purely economic benefits that this technology offers, India's National Strategy on artificial intelligence, published by NITI Aayog in 2018, emphasizes the potential of artificial intelligence to address social issues faced by its citizens in sectors like agriculture, health, and education. In light of this context, this study looks at a few artificial intelligence-related issues, such as the development and potential legal implications of artificial intelligence are? What are the differences between the law on the right to privacy and artificial intelligence? Can the laws governing intellectual property be applied to artificial intelligence? Is there a conflict between the law governing competition and artificial intelligence? What attitude has the Indian judicial system adopted on the use of artificial intelligence?

I Introduction

A GROUP of computer programs known as artificial intelligence is made to tackle issues that call for inferential reasoning, making decisions based on partial or ambiguous information, classification, optimization, and perception. Its application in the modern day is boosting the world economy. It offers numerous advantages, including enhancing creativity, offering quick services, ensuring safety from various disasters, changing lifestyles, and resolving everyday issues. Thus, a wide range of computer programs with varying degrees of autonomy, intelligence, and flexible problem-solving capability is included in the category of artificial intelligence programs.¹ The provision of healthcare both in urban and rural areas may change as a result of artificial intelligence according to the healthcare industry. Many healthcare organisations are currently making significant investments in the development of medical artificial intelligence systems, such as systems that analyse X-ray images and systems that monitor elderly patients for fall risk.² On the other hand, it gives rise to a lot of fear and worries, including

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1 See generally, Christopher M. Bruner, "Distributed Ledgers, Artificial Intelligence and the Purpose of the Corporation" 79(3) *Cambridge Law Journal*, 431–458 (2020); Harry Surden, "Artificial Intelligence and Law: An Overview" 35(4), *Georgia State University Law Review* 1305-1337 (2019); Antonio A. Martino, "Artificial Intelligence and Law" 2(2) *International Journal of Information Technology* 154-189 (1994).

2 See, I. Glenn Cohen, "Informed Consent and Medical Artificial Intelligence: What to Tell the Patient?" 108 *The Georgetown Law Journal*, 1425- 1469, 1427 (2000).

negative effects on human autonomy, privacy, and basic freedoms.³ Artificial intelligence has also adverse effects on workers. It takes over jobs that were formerly performed by people.⁴ Further, the artificial intelligence has no accepted definition.

In consonance with one definition, the artificial intelligence is the study of cognitive processes using the conceptual frameworks and tools of computer science.⁵ The use of computation to simulate activity is referred to as “artificial intelligence” in a wide sense.⁶ In general, it can be described as a digital system that displays behavior that is typically assumed to require intelligence. It also applies to systems that exhibit intelligent behavior by analyzing their surroundings and acting autonomously to accomplish predetermined objectives. Today artificial intelligence can not only be creative but also produce world class works of art although humans are far more creative than the computer programs that they write.⁷ The importance of online courts has increased in the recent time. In essence, this is creating a framework that permits the application of artificial intelligence in judicial system. Future judges may be able to modify their genetic composition or integrate computer circuits and programs into their work culture to enhance their intelligence, memory, information management, and processing skills, and lessen instances of exhaustion as a result of technological advancements.⁸

In light of this backdrop, several questions arise, including: First, how much is known about the connections between artificial intelligence and law (and vice versa)? Second, are there any indications that a new scientific field combining law and artificial intelligence is on the horizon? Thirdly, under what circumstances should study and activity that particularly addresses the relationship between artificial intelligence and law be strengthened? In the pages that follow, we now propose to analyze the connection between artificial intelligence and the law.

3 For detailed discussions on negative effects of artificial intelligence, see, Rowena Rodrigues, “Legal and Human Rights Issues of AI: Gaps, Challenges and Vulnerabilities” 4 *Journal of Responsible Technology*, 100005 (2020); Yavar Bathace, “The Artificial Intelligence Black Box and the Failure of Intent and Causation” 31(2), *Harvard Journal of Law and Technology*, 889-937 (2018).

4 See, International Labour Organization, “Negotiating the Algorithm: Automation, Artificial Intelligence and Labour Protection” (Employment Working Paper No. 246, Geneva, 2018).

5 See, Edwina L. Rissland “Artificial Intelligence and Law: Stepping Stones to a Model of Legal Reasoning” 99(8) *The Yale Law Journal*, 1957-1981,158 (1980).

6 See, Yoon A. H., “The Post-Modern Lawyer: Technology and the Democratization of Legal Representation” 66 *University of Toronto Law Journal*, 456-471, 466 (2017).

7 See, Sebastien Lafrance, “The Impact of Artificial Intelligence on the Formation and the Development of the Law” 2(1) *Vietnamese Journal of Legal Sciences* 1-15, 13 (2020).

8 See, Daniel McIntosh, “Human, Transhuman, Posthuman: Implications of Evolution-by-Design for Human Security” 4(3) *Journal of Human Security*, 4-20, 10 (2008).

II Development of artificial intelligence and emerging law

Artificial intelligence has advanced from science fiction to conversations in the highest echelons of academia, business, and government. A few scientists from several disciplines (mathematics, psychology, engineering, economics, and political science) started debating the viability of developing an artificial brain in the 1940s and 1950s. John McCarthy first used the phrase “artificial intelligence” in 1956.⁹ The sphere of policy and political practice is being disrupted by developing technologies, and artificial intelligence highlights two essential components that these technologies depend on: (i) data, and (ii) algorithms. The artificial intelligence that will power the next phase of economic expansion is data, the “bloodstream” of the digital revolution and the most precious commodity of our time. A set of thorough, step-by-step directions used to examine and resolve a problem computationally is known as an algorithm. A set of instructions called an algorithm tells a computer what to do. Artificial intelligence, in its simplest form, is the process by which computers process massive amounts of data using extremely complex algorithms to describe human reasoning and/or behavior.¹⁰ Two major approaches have influenced the development of artificial intelligence: (i) the symbolic approach to artificial intelligence, and (ii) the connectionist approach to artificial intelligence.

The development of expert systems and production rules to enable a machine to infer behavioral pathways is known as symbolic artificial intelligence. Due to the requirement that it strictly adheres to a memorized set of rules, this method is unable to adapt to new situations without human assistance. According to the connectionist paradigm of artificial intelligence, the machine is given raw environmental input and is then left to identify patterns and develop its own complex, high-dimensional representations of the raw sensory data. This may occur through machine learning, in which the computer learns on its own using statistical models without being explicitly programmed, or through deep learning, a more complex variation of machine learning that uses a layered structure of algorithms to simulate an artificial neural network to process and categorize data. Artificial intelligence, therefore, is an interdisciplinary field of computer science that works with models and data processing systems for the performance, emulation, or reproduction of previously identified with human cognitive capabilities including reasoning, learning, and self-improvement.¹¹

9 See, Andreas Kaplan, *Artificial Intelligence, Business and Civilization: Our Fate Made in Machines* 7 (Routledge, London, 2022).

10 See, Corneliu Bjola, “AI for Development: Implications for Theory and Practice” 50(1) *Oxford Development Studies*, 78–90, 79 (2022).

11 See, Emile Loza de Siles, “AI, on the Law of the Elephant: Toward Understanding Artificial Intelligence,” 69(5), *Buffalo Law Review*, 1389-1469, -1418 (2021).

Law and artificial intelligence have been investigated for at least six and half decades.¹² It is pertinent to note that Layman Allen¹³ promotes the use of normalization techniques to address syntactic issues in 1957. He has improved the drafting and interpretation of legal documents using logic as a tool. L. Thorne McCarty¹⁴ used a theorem-proving strategy to address problems in corporation tax law in 1977. The research community and interest in artificial intelligence both significantly increased in the 1980s. Carole Hafner and Don Berman, who had just started a center for computer science and law at Northeastern University, organized the first international conference on artificial intelligence and law in 1987.¹⁵ However, in 2020 there has been discussion on a global scale about how artificial intelligence might affect the advancement of sustainable development goals in both positive and negative ways. While exploring the consequences of how the delivery goals and targets identified in the 2030 Agenda for sustainable development might either promote or prevent artificial intelligence.¹⁶ There have only been first steps toward creating a legal framework for artificial intelligence up until this point, along with declaration documents from private corporations. The adoption of a resolution by the European Union regarding civil law regulations for robotics is indicative.¹⁷ Several states are working on artificial intelligence regulatory frameworks at the federal level, but they haven't yet developed comprehensive legislative frameworks.¹⁸ The European Union released its first coordinated action plan in 2019 to promote trustworthy artificial intelligence (AI) through ethical standards, public policy, and investment advice.¹⁹ The suggested ethical stances are as follows:²⁰

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- 12 See, Anne Gardner, "Law Applications" in *The Encyclopedia of Artificial Intelligence* (John Wiley and Sons, New York, 1989).
 - 13 See, Layman Allen, "Symbolic Logic: A Razor-edged Tool for Drafting and Interpreting Legal Documents" 66(6) *Yale Law Journal*, 833-879 (1957).
 - 14 For detail, see, L. Thorne McCarty, "Taxman: An Experiment in Artificial Intelligence and Legal Reasoning" 90(5) *Harvard Law Review*, 837-893 (1977).
 - 15 See, Edwina L. Rissland, Kevin D. Ashley, and R. P. Loui, "AI and Law: A Fruitful Synergy" 150, *Artificial Intelligence*, 1-15, 9 (2003).
 - 16 See generally, T. Yigitcanlar and F. Cugurullo "The Sustainability of Artificial Intelligence: An Urbanistic Viewpoint From the Lens of Smart and Sustainable Cities," 12(20) *Sustainability*, 1-24 (2020).
 - 17 European Parliament Res. of February 16, 2017 with recommendations to the Commission on Civil Law Rules on Robotics (2015/2103(INL)).
 - 18 See, Themis Tzimas, "Artificial Intelligence and Human Rights: Their Role in the Evolution of AI" 1 *Heidelberg Journal of International Law* 533-557, 549 (2020).
 - 19 For commentaries, see, Emmanuel Kabengele Mpinga, Ngoyi KZ Bukonda, Said Qailouli, and Philippe Chastonay, "Artificial Intelligence and Human Rights: Are There Signs of an Emerging Discipline? A Systematic Review" 15 *Journal of Multidisciplinary Healthcare* 235-246 (2022).
 - 20 Commission Européenne. Lignes directrices en matière d'éthique pour une IA digne de confiance. Bruxelles: Commission Européenne [(European Commission. Ethical Guidelines for Trustworthy artificial intelligence. Brussels: European Commission]; 2019. Available at: <https://justicia.openum.ca/files/sites/181/2019/10/EthicsguidelinesfortrustworthyAI-FR.pdf>. (last visited on Jan. 12, 2022).

Develop, deploy and use AI systems in accordance with the following ethical principles: respect for human autonomy, prevention of any infringement, fairness, and explainability. Recognize and resolve potential tensions between these principles.

Pay particular attention to situations concerning more vulnerable groups such as children, people with disabilities, and other groups historically disadvantaged or exposed to the risk of exclusion, and in situations characterized by asymmetries of power or information, for example between employers and workers, or between businesses and consumers.

Recognize and be aware that AI systems certainly bring considerable benefits to individuals and society, but that they also present certain risks and may have negative impacts, including impacts that may be difficult to anticipate, determine, or to be measured (for example impacts on democracy, the rule of law and distributive justice, or on the human mind itself). Adopt appropriate measures to mitigate these risks, if appropriate, in a manner commensurate with the magnitude of the risk.

In addition to the aforementioned coordinated action plan, the European Union has established the General Data Protection Rules 2016, which set “privacy by design” as a requirement for creating automated solutions and give a regulatory framework for the protection of personal data.²¹ The Personal Data Protection Act 2012, which was published by Singapore’s Personal Data Protection Committee, creates a data protection law with a number of regulations covering the gathering, use, disclosure, and maintenance of personal data.²² The HIPAA Privacy Rule 2000 and Graham Leech Bliley Act 1999, respectively, govern the use of data in healthcare and finance in the United States.²³

India currently lacks a comprehensive regulatory framework or artificial intelligence legislation for the application of artificial intelligence systems. The strategy for India’s National Digital Health Mission notes the necessity of developing guidelines and standards to guarantee the dependability of artificial intelligence-based medical systems. A technical framework is provided by the Data Empowerment and Protection Architecture by NITI Aayog enabling people to maintain ownership over their personal

21 On the April 27, 2016, the Regulation (EU) 2016/679 (GDPR) was adopted by the Member States of the EU with the plan of achieving harmonization and uniformity in the applicable data protection rules in Member States.

22 For commentaries, see, Benjamin Wong, “Data Privacy Law in Singapore: The Personal Data Protection Act 2012,” 7(4), *International Data Privacy Law*, 287- 302 (2017).

23 In the United States, the Algorithmic Accountability Act 2019 is a proposed bill that requires specified commercial entities to conduct assessments of high-risk systems that involve personal information or make automated decisions, such as systems that use artificial intelligence or machine learning.

data and the means to use it to get services and benefits. The Personal Data Protection Bill 2019 (PDP Bill) proposal, which is intended to be comprehensive legislation describing many aspects of privacy safeguards that artificial intelligence solutions need to comply with, comes the closest to this. It addresses restrictions on data processing, security measures to prevent data breaches, and the implementation of particular rules dealing with weaker users, including children. Additionally, the PDP Bill calls for a dynamic data protection legislation where the law will be supported by rules and codes of conduct, facilitating the evolution of privacy in line with new technological developments. For instance, the authority may simply release a code of practice to provide clarification when a specific privacy concern involving artificial intelligence calls for it.²⁴

III Artificial intelligence and law of right to privacy

The right to privacy faces significant difficulties both online and offline due to artificial intelligence. In the context of online social networks, the basic notion that privacy is properly protected through informed permission falls apart as well. People have some degree of self-censorship over the details about themselves they choose to share.²⁵ Now a question arises what is the right to privacy? The necessity for the acknowledgment of the right to privacy is not just restricted to certain cultures; allusions to it have been present in most communities since the beginning of human civilization. The idea also has competing and incompatible dimensions with different interpretations.²⁶ Some people describe privacy as having control over information about themselves,²⁷ while others define privacy as having control over the most private aspects of one's identity or autonomy.²⁸ Nevertheless, the right to privacy may be classified into six general types. *Firstly*, the right to a certain amount of self-access. This is the right to put up barriers to prevent unapproved access from others.²⁹ *Secondly*, the right to secrecy. The concealing of certain matters from others is covered under this right.³⁰ *Thirdly*, the right to control over personal information. The ability to exercise control over

24 See, The Report of the NITI Aayog, New Delhi, Feb., 2021.

25 See, Suchana Seth, "Machine Learning and Artificial Intelligence Interactions with the Right to Privacy" 52(51) *Economic and Political Weekly*, 66-70, 68 (2017).

26 See, D. J. Solove, "Conceptualizing Privacy" 90(4) *California Law Review*, 1087-1156, 1093 (2002).

27 See, W. Parent, "Privacy, Morality and the Law" 12(4) *Philosophy and Public Affairs*, 323-333, 324 (1983).

28 See, T. Gerety, "Redefining Privacy" 12(2) *Harvard Civil Rights-Civil Liberties Law Review* 233-296, 236 (1977).

29 See, Subhajit Basu, "Privacy Protection: A Tale of Two Cultures" 6(1), *Masaryk University Journal of Law and Technology* 1-34, 11 (2012).

30 See, Lee Yong Kiat, "Professional Secrecy and the Law" 8(2) *Singapore Medical Journal* 87-101, 92 (1967).

information about oneself is recognized by this right.³¹ *Fourthly*, the right to personhood. The protection of one's identity, dignity, and personality is provided by this right.³² *Fifthly*, the right to intimacy. This right safeguards one's intimate relationships and gives them some degree of control or restriction.³³ *Sixthly*, the right to be left alone. This protection shields people from being intruded upon by a photographer, a daring journalist, or the owner of any other cutting-edge audiovisual reproduction or recording gear.³⁴ However, this classification is not complete, and many of the categories overlap.³⁵

The 1948 Universal Declaration of Human Rights' article 12 forbade arbitrary interference with a person's right to privacy, family, home, or correspondence. As a result, the right to privacy has been acknowledged as a fundamental human right.³⁶ It is also guaranteed by Article 17(1) of the 1966 International Covenant on Civil and Political Rights, which states that no one shall be subjected to arbitrary or unlawful interference with his privacy, family, home, or correspondence, nor to unlawful attacks on his honor and reputation. In comparison to the Fourth Amendment of the United States Constitution, the Indian Constitution does not clearly mention the "right to privacy" in terms of its applicability at the national level. In *Olmstead v. United States*,³⁷ the US Supreme Court held that the privacy of the individual includes the "right to be let alone". In *Central Public Information Officer, Supreme Court of India v. Subhash Chandra Agarwal*,³⁸ the Supreme Court of India stated that if the matter is of a nature that would be extremely offensive to a reasonable person and not be of real public concern, it is explained that the right to privacy is violated. However, the Indian Supreme Court in *Justice K.S. Puttaswamy v. Union of India*,³⁹ has overruled its earlier judgments, which

31 See, Chen-Hung Chang, "Controversy Over Information Privacy Arising From the Taiwan National Health Insurance Database Examining the Taiwan Taipei High Administrative Court Judgement No. 102-SU-36 (Tsai v. NHI)" 28(1), *Pace International Law Review* 29-116, 60 (2016).

32 See, FrederickJ. White, "Personhood: An Essential Characteristic of the Human Species," 80(1) *The Linacre Quarterly* 74-97, 82 (2013).

33 See, Courtney Megan Cahill, "Reproduction Reconceived" 101 *Minnesota Law Review* 617-697, 675 (2016).

34 See, Jon L. Mills, "Privacy Revisited: A Global Perspective on the Right to be Left Alone" 53(2) *Tulsa Law Review* 321-327, 325 (2018).

35 See, Jatindra Kumar Das, *Human Rights Law and Practice* 296 (PHI Learning Private Limited, Delhi, 2022).

36 See, Oliver Diggelmann and Maria Nicole Cleis, "How the Right to Privacy Became a Human Right" 14 *Human Rights Law Review* 441-458 (2014).

37 277 US 438, 478 (1928).

38 (2019) 8 MLJ 222: 2019 (16) SCALE 40.

39 2018 (12) SCALE 1: (2019) 1 SCC 1.

did not consider the right to privacy as a fundamental right, analogs to the American Constitution in *M.P. Sharma v. Satish Chandra*⁴⁰ and *Kharak Singh v. The State of U.P.*⁴¹

In *Justice K.S. Puttaswamy v. Union of India*,⁴² the Supreme Court of India held that the right to privacy is an element of human dignity. The court further held that the claim that under article 21 of the Indian Constitution, the right to privacy is a basic, unalienable right. The value of privacy is found in the way it serves dignity. By protecting the innermost parts of the human personality from uninvited interference, the right to privacy ensures that a person can live with dignity. It acknowledges each person's autonomy and their right to make crucial decisions that have an impact on their route through life. In doing so, the right to privacy acknowledges that leading a life of dignity is necessary for a person to exercise the liberties and freedoms that form the basis of the Indian Constitution. The right to privacy received the status of binding law under article 141 of the Constitution of India until appropriate legislation has been enacted by the Indian Parliament. The right to privacy of migrants, the right to respect for the privacy of people with disabilities, the right to respect for private and family life, the right to privacy, the privacy of children, the protection of the integrity of older people, and their right to privacy and intimacy are all threatened by artificial intelligence.

IV Artificial intelligence and intellectual property law

Artificial intelligence encompasses all forms of intelligent behavior, such as playing chess, figuring out calculus equations, discovering new mathematical ideas, comprehending short stories, picking up new ideas, analyzing visual scenes, detecting illnesses, and using analogy to make decisions. The legal system in general, and intellectual property law in particular, provide many opportunities for the creation of analytical and computational artificial intelligence models. Intellectual property law also has unique characteristics that make it a particularly challenging field for artificial intelligence. The legal analysis involves reasoning with cases, regulations, statutes, and principles. It is multimodal, rich, and diverse. Case law has certain reasoning and justification standard that is binding. Under the law of copyright computer software and databases are protected. Under section 2(o) of the Copyright Act, 1957⁴³ "literary work" would include computer programs, tables, and compilations including computer databases.⁴⁴ The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) marks a significant development over existing international copyright law in clarifying that computer programs and data should be protected as

40 AIR 1954 SC 300: [1954] 1 SCR 1077.

41 AIR 1963 SC 1295: [1964] 1 SCR 332.

42 (2019) 1 SCC 1: 2018 (12) SCALE 1.

43 Copyright (Amendment) Act, 1999.

44 See, Jatindra Kumar Das, "Copyright Protection for Computer Softwares and Databases: From Sweat of the Brow to Modicum of Creativity" 3(2) *Indian Journal of Law and Justice*, 57-80 (2012).

literary works.⁴⁵ Article 10 of the TRIPS Agreement clarified that computer programs and compilations of data are eligible for protection under copyright law as:

- (i) Computer programs, whether in source or object code, shall be produced as literary works under the Berne Convention 1971.
- (ii) Compilation of data or other material, whether in machine-readable or other forms, which by reason of the selection or arrangement of their contents constitute intellectual creations shall be protected as such. Such protection, which shall not extend to the data or material itself, shall be without prejudice to any copyright subsisting in the data or material itself.

The Copyright (Amendment) Act, 1999 included “databases” in the definition of “literary work” in section 2(0) of the Copyright Act 1957. But, the term “databases” has not been defined in the Act. The Information Technology Act 2000 (IT Act) enacted by the Indian Parliament is the first legislation, which contains provisions for data protection. The IT Act defines certain key terms concerning data protection, like access,⁴⁶ computer,⁴⁷ computer network,⁴⁸ computer resource,⁴⁹ computer system,⁵⁰ computer database,⁵¹ data,⁵² electronic form,⁵³ electronic record,⁵⁴ information,⁵⁵ intermediary,⁵⁶ secure system,⁵⁷ and security procedure.⁵⁸ Expression “data” is defined in section 2(o) of the IT Act as follows:

Data means a representation of information, knowledge, facts, concepts or instructions which are being prepared or have been prepared in a formalised manner, and is intended to be processed, is being processed or has been processed in a computer system or computer network, and may be in any form (including computer printouts magnetic or optical

45 See, P.M. Dhar, “Intellectual Property in Computer Programs: Weakness of the Indian Copyright Act, 1957,” 28, *Journal of the Indian Law Institute*, 487–496 (1986).

46 Information Technology Act, 2000, Section 2(1)(a). The Act came into force on Oct. 17, 2000, *vide*, G.S.R. 788(E), dated Oct. 17, 2000.

47 *Id.*, s. 2(1)(i).

48 *Id.*, s. 2(1)(j).

49 *Id.*, s. 2(1)(k).

50 *Id.*, s. 2(1)(l).

51 *Id.*, s. 43, Explanation (ii).

52 *Id.*, s. 2(1)(o).

53 *Id.*, s. 2(1)(r).

54 *Id.*, s. 2(1)(t).

55 *Id.*, s. 2(1)(v).

56 *Id.*, s. 2(1)(w).

57 *Id.*, s. 2(1)(ze).

58 *Id.*, s. 2(1)(zf).

storage media, punched cards, punched tapes) or stored internally in the memory of the computer.

The explanation to the section 43 of the Information Technology Act, 2000 defines the “computer database” thus:⁵⁹

Computer database means a representation of information, knowledge, facts, concepts or instructions in text, image, audio, video that are being prepared or have been prepared in a formalised manner or have been produced by a computer, computer system or computer network and are intended for use in a computer, computer system or computer network.

The IT Act is the cornerstone of Indian law governing data protection. A technology-neutral regime for the protection of sensitive personal information for all bodies corporate is established by the provisions of the IT Act in conjunction with the Information Technology (Reasonable Security Practises and Procedures and Sensitive Personal Data or Information) Rules 2011. Article 27 of the 1948 Universal Declaration of Human Rights recognizes intellectual property rights (UDHR). It recognizes the preservation of creators’ rights as a vital social norm. The text of UDHR article 27 is as follows:⁶⁰

Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author.

The present jurisprudential approach recognizes two rights: the author’s economic right and the author’s moral right, with relation to the ownership of the author’s copyright in literary and musical works. Even after a legal transfer of the former, the latter’s ownership remains with its creator and it is legally guarded against any distortion or mutilation. The creator’s and author’s good name and reputation are just as much property rights as those listed in the Berne Convention.⁶¹ In this sense, article 27 of the UDHR protects an author’s or creator’s literary and creative creations as a human right. Besides this, both article 19 of the 1966 International Covenant on Civil and Political Rights and article 15 of the 1966 International Covenant on Economic, Social, and Cultural Rights have acknowledged that these rights have a human rights aspect and have been contextualized in a variety of policy areas. As a result, artificial intelligence

59 *Id.*, expl. (ii) of s. 43.

60 For commentaries on the art. 27 of UDHR, see, Olli Vilanka, *Article 27 of the Universal Declaration of Human Rights and Internet*, (University of Stockholm, 2014).

61 The *Berne Convention for the Protection of Literary and Artistic Works, 1886* was adopted on September 6, 1886. India is a party to Convention. See, Shahid Ali Khan, “Role of the Berne Convention in the Promotion of Cultural Creativity and Development: Recent Copyright Legislation in Developing Countries” 28(4) *Journal of the Indian Law Institute*, 424–440 (1986).

creates several intellectual property challenges, such as who owns works or ideas produced by artificial intelligence? Whether the invention of artificial intelligence be regarded as prior art? Who is the owner of the dataset that artificial intelligence must learn from? In case the artificial intelligence-generated inventions violate the rights of others or other laws, who should be held accountable? Therefore, India needs to create its own Data Protection Act. In this context the Supreme Court in *Justice K.S. Puttaswamy v. Union of India*,⁶² observed:⁶³

Informational privacy is a facet of the right to privacy. The dangers to privacy in an age of information can originate not only from the State but from non-state actors as well. We commend the Union Government on the need to examine and put into place a robust regime for data protection. The creation of such a regime requires a careful and sensitive balance between individual interests and legitimate concerns of the state.

The right to privacy is described as the individual's reservation of a private area, often known as the right to be let alone. The individual's autonomy is the foundation of the idea. The individual's autonomy is related to topics that can be kept private. There is a valid expectation of privacy regarding these issues. A fundamental element of human dignity is privacy. In matters that are personal to his or her life, privacy protects the individual from the prying eyes of publicity. In *Anivar A. Aravind v. Ministry of Home Affairs*,⁶⁴ the High Court of Karnataka held that there are two important privacy principles. The first is that before collecting personal information, a data controller must provide all individuals with a notice that is easy to understand and concisely describes its information practices. The second principle is that consent from an individual should only be obtained after being informed of the organization's information practices and after being allowed to "opt-in" or "opt-out" of sharing personal information. The data of specific users cannot be utilized or shared due to the right to privacy granted by the Indian Constitution unless the users give their informed consent. Why these principles would not be applied in case of artificial intelligence?

V Artificial intelligence and competition law

Is there any conflict between artificial intelligence and competition law? The Indian Policy Makers have brought the Competition Act 2002 into existence by proving its

62 (2019) 1 SCC 1: 2018 (12) SCALE 1. Former Judge of Supreme Court has also been appointed to prepare a draft of personal Data Protection Bill, which will protect right to privacy and steps are likely to be taken to see that the data of criminal activity of a person is erased after particular period from the relevant records of the agencies. See, *Shantaram v. The State of Maharashtra*, 2019 (3) ABR 513: 2019 (2) ALLMR 375 [Bombay High Court].

63 *Ibid.*

64 2021 (2) AKR 435.

ability in providing better marketing regulations.⁶⁵ Thus, Indian competition law is a statutory law while in India artificial intelligence is governed under government policy. Naturally, the statutory law would take priority over policy in the event of a conflict. Additionally, it is widely acknowledged that perfect competition brings the following benefits: (i) firstly, it fosters locative effectiveness and guarantees efficient resource allocation, (ii) secondly, it boosts productivity and guarantees that production expenses are maintained to a minimum, and (iii) thirdly, it guarantees dynamic effectiveness and encourages creative methods.⁶⁶ The concepts of “efficiency” and “maximization of consumer welfare” were achieved in the primary plank of the Act with the adoption of competition legislation in 2002. In *Competition Commission of India v. Steel Authority of India*,⁶⁷ the Supreme Court made the following observation:⁶⁸

[C]ompetition law is to promote economic efficiency using competition as one of the means of assisting the creation of market responsive to consumer preferences. The advantages of perfect competition are threefold: allocative efficiency, which ensures the effective allocation of resources; productive efficiency, which ensures that costs of production are kept at a minimum; and dynamic efficiency, which promotes innovative practices.

With the Competition Act, 2002 in existence, the competition legislation is now a tool for achieving the effective resource allocation, technological advancement, consumer welfare, and control of economic power concentration that is envisioned in article 39(b) of the Indian Constitution. The State is required by article 39(b) to share the ownership and control of the community’s material resources in a way that best serves the common interest.⁶⁹ In article 39(b), the term “material resources” refers to both resources held by private individuals and those that have previously been granted to the State.⁷⁰ Sections 3 and 4 of the Indian Competition Act were enacted as a result. According to section 3, no person or business may engage in production, supply, or distribution activities that might have a detrimental effect on India’s competitive environment. Any such agreements are deemed illegal, and under section 4 it is regarded

65 See, Jatindra Kumar Das, “Foundations of Competition Law in India: Prospect and Retrospect” 38(1) *Law Review* 1-19, 3 (2018).

66 See, M. R. Madhavan, “Evolution of Competition Law,” 38(9) *Chartered Secretary*, 1239-1241 (2008); Shankar Singham “Road to A Market Economy: Indian Competition Law” 38(9), *Chartered Secretary*, 1248-1253(2008); Sandeep Kapoor, “Effective Competition Advocacy: A Prerequisite for Building Competition Culture” 34 *Chartered Secretariat*, 216-217 (2004).

67 (2010) 10 SCC 744: 2010 (9) SCALE 291.

68 *Id.*, para 6.

69 See, N. S. Sreenivasulu and Sowmya Sreenivasulu “Trade and Competition under the Constitution of India” 1(1) *Competition Law Reports*, 20-25 (2012).

70 *Tinsukia Electric Supply Co. Ltd. v. Union of India*, AIR 1990 SC 123: 1989 (2) SCR 544.

an abuse of a dominating position if a company or an associated person is shown to be engaging in unfair or discriminating actions. A party will be the subject of an investigation from the relevant authorities if it is discovered that they have abused their position. The Act also establishes the Competition Commission of India as a regulatory authority.⁷¹

Now the question arises: Can India's competition law and policy handle the difficulties that artificial intelligence would present? Is it true that the misuse of technicalities brought on by artificial intelligence can be eliminated by the competition law? There are two general categories in which to place the current algorithmic difficulties. First, where the price algorithm enables or intensifies collusive behavior that is already covered by current antitrust laws, and second, where the algorithm leads to a relatively new sort of collusion that is not taken into account by the current legal system. When it comes to monitoring algorithms, their function is limited to ensuring that the underlying anti-competitive agreement is carried out without incident. The current competition law framework is adequate to address the aforementioned conduct because the underlying agreement already exists and is prohibited by competition law. The employment of a computer program to simplify the implementation of the collusive agreement is the sole innovative aspect of this situation. An algorithm is merely a tool for facilitating an existing agreement in the hub and spoke paradigm as well. The signaling system and machine learning algorithm do, however, provide difficulties for competition law.⁷² Parallel behavior is not prohibited by Indian competition law as long as it is the consequence of unilateral action without direct communication between the parties.

VI Artificial intelligence and indian judiciary

Artificial intelligence is already changing the justice system in several ways, including the way judges function and the ability to provide for very different types of justice, especially in cases where processes are significantly altered. Predictive analytics may also change the adjudicative role.⁷³ In addition, it helps to educate, encourage, and counsel those working in the legal system.⁷⁴ In a considerable number of instances, the Supreme Court and high courts of India have looked into the scope and application of artificial intelligence. According to the courts, the application of artificial intelligence should be done to speed up and simplify procedures and to make life easier rather

71 Competition Act 2002, see s. 7-17,

72 See, Nicolas Petit, "Antitrust and Artificial Intelligence: A Research Agenda" 8(6), *Journal of European Competition Law and Practice*, 361-362 (2017).

73 See, Tania Sourdin, "Justice and Technological Innovation" 25 (2) *Journal of Judicial Administration*, 96-105, 97 (2015).

74 See, Tania Sourdin, "Judge v Robo? Artificial Intelligence and Judicial Decision-Making" 41(4) *UNSW Law Journal*, 1114-1133, 1117 (2018).

than harder. The time has come when there is a need to gradually phase out the human interface to the extent possible and to introduce state-of-the-art digital technology. The role of artificial intelligence and machine learning is to be developed to ensure that there is minimum human intervention. The purpose is to bring more transparency and efficiency to the system. In the future using artificial intelligence, offenders and extremist elements can be identified and culled out for the safety and security of pilgrims.⁷⁵ From a scientific and evidence-processing perspective, the law enforcement community can also gain from artificial intelligence. This is especially true in the case of forensic Deoxyribonucleic Acid (DNA) testing, which during the past few decades has had an extraordinary effect on the criminal justice system. When committing a crime the accused contact with persons or items can convey biological material like blood, saliva, semen, and skin cells. The sensitivity of DNA analysis has increased along with DNA technology, enabling forensic professionals to find and use DNA evidence that was previously inoperable due to low levels, degradation, or other factors.

In *Entertainment Network (India) Ltd. v. HT Media Limited*,⁷⁶ the High Court of Delhi stated that we are already talking of single remotes for all electronic gadgets in the house and office and of artificial intelligence taking over many of the functions. Thus, the Optical Mark Recognition Sheet (OMR Sheet) is to be examined electronically by using artificial intelligence and in that no deficiency could have been satisfied manually held by the High Court of Allahabad in *Vinay Kumar v. State of U.P.*⁷⁷ In the *Chairman, Al Azhar Medical College and Super Speciality Hospital v. Union of India*,⁷⁸ the Supreme Court suggested that a computer network-based technological solution which might include artificial intelligence. Hence, in *Justice K.S. Puttaswamy v. Union of India*,⁷⁹ the Supreme Court pointed out that there is a confluence of big data, connectivity, and artificial intelligence. Artificial intelligence technology can scan content to categories and update its filter system without human intervention in real-time.⁸⁰ Innovation in the field of artificial intelligence, blockchain technologies, and other digital products would be based on a computer program.⁸¹

The role of artificial intelligence and machine in preventing road accidents has been explained by the Himachal Pradesh High Court in *Roshan Lal v. State of H.P.*⁸² In this case the court observed that the accidents will stop happening only when the vehicles

75 See, Christopher Rigano, “Using Artificial Intelligence to Address Criminal Justice Needs” 280 *National Institute of Justice Journal* 1-10 (2019).

76 251 (2018) DLT 370; 2018 (75) PTC 28 0(Del).

77 2022 (152) ALR 77; 2022 Lab IC 1448.

78 (2018) 10 SCC 567.

79 (2019) 1 SCC 1; 2018 (12) SCALE 1.

80 See, *Netsweeper Technologies Pvt. Ltd. v. Netsweeper Inc.*, 2019 (1) CTC 54.

81 See, *Ferid Allani v. Union of India*, MANU/DE/4323/2019.

82 MANU/HP/0170/2020.

will take all control from the man and rely upon the innovation of man, through artificial intelligence and machine learning, and would become self-driven. The only way to stop road accidents is by taking out the man from the machines and letting machines drive on their own. In this context, in *C. Shiva v. The State of Karnataka*,⁸³ the High Court of Karnataka recommended for establishment of artificial intelligence-based expert systems. The court further observed:⁸⁴

The State should set up a committee to compile best practices as well as to develop an artificial intelligence-based expert system that can be used by the investigating officers at any stage of the investigation to seek guidance and tips to take their search for missing persons forward to fruition. The expert system should take into account the steps taken by the Investigating Officer till then and thereafter suggest possible steps for further investigation based on prior experience and best practices. The service of information technology/artificial intelligence experts could be gainfully employed in this regard.

In *Tata Steel Limited v. The State of Jharkhand*,⁸⁵ the High Court of Jharkhand found that the respondents have never developed artificial intelligence in their e-portal which thinks on their own, and hence, this petition has been preferred for getting Form-C for the years which are mentioned. The court held that what is to be done at the time of annual assessment cannot be done at the time of issuance of Form-C. State authority cannot prejudge the nature of the transaction and it also cannot enter into the question of whether the applicant will misuse Form-C. Grant of Form-C is a rule and denial of the grant of Form-C is rarest of rare exception. Respondent directed by the Court to consider the application of the petitioner for the supply of declaration in Form-C. Thus, in *State of Himachal Pradesh v. Sunil Kumar*,⁸⁶ the High Court of Himachal Pradesh held that in the present system, when scientific tools and artificial intelligence is yet to be put in use to detect lies, cross-examination still remains the most crucial tool to impeach the credibility of a witness: (i) to destroy or weaken the evidentiary value of the witness of her adversary; (ii) to demonstrate that the witness is unworthy of belief; (iii) to test her veracity; to discover who she is and what is her position in life; (iv) except to the victims of sexual offences, (v) to shake her credit by injuring her character, (vi) to elicit facts favoring her client; and (vii) to build the foundation to set up the case of the defence, for example, a plea of alibi, private defence, etc.

83 ILR 2007 Kar 740: 2007 (3) Kar LJ 148.

84 *Id.*, para 12.

85 [2019] 65 GSTR 62 (Jha.): 2019 [26] G.S.T.L. 295.

86 ILR 2019 VI HP 165.

In *Re: Prajwala*,⁸⁷ the Supreme Court has pointed out a doubt whether Facebook is developing or has developed new “proactive detection” technology for real-time screening through artificial intelligence. In this regard, the Court observed that learned Counsel appearing for Facebook may file an affidavit indicating whether any such technology has been developed and if it has not been developed the progress made for developing such technology if any. Further, the High Court of Delhi in *Liugong India Pvt. Ltd. v. Yograj Infrastructure Ltd.*,⁸⁸ held that a company, being a juristic entity, has to necessarily act through natural persons and we are still far from the day when such juristic entities, with the assistance of artificial intelligence, will enter into contracts without acting through natural persons. Thus, merely because a natural person has acted on behalf of a juristic entity like a company will not make such a natural person personally liable for the debts of such a juristic entity. In several cases the company moderates using the artificial intelligence moderation machine at the first level and human moderation in the next three levels. If anyone has a grievance, there is a grievance officer, who can be directed to conduct an enquiry. He would also submit that even if any inappropriate or obscene is posted, immediately, the mobile application will come into play and artificial intelligence moderation machine and human moderation would act as filters.⁸⁹ Nevertheless, in *Tata Sky Limited v. National Internet Exchange of India*,⁹⁰ the High Court of Delhi held that “artificial intelligence” can be suitably employed to, within the parameters defined by law and/or the courts, prevent such repeated infringement and violations, eliminating the need for the grievant to repeatedly approach the court and/or the dispute redressal mechanism and which may tire the grievant, opening the field for violators/infringers.

More specifically, in *Izaz Yusuf Ahmed v. State of Assam*,⁹¹ the High Court of Gauhati held that taking aid of artificial intelligence in the form of a computer is merely to assist the Commission consisting of human beings. It cannot be said that if certain procedures had been assigned to artificial intelligence, it would naturally debar any human intervention. If artificial intelligence does not work, human intervention has to be always available as a last resort. The court accordingly issued the directions for human intervention.⁹² Thus, in *Mina Deb v. Pradip Ranjan Deb*,⁹³ the High Court of Calcutta held that human intelligence cannot be equated with artificial intelligence; in the 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

87 2018 (1) SCALE 545.

88 2018 (187) AIC 722: 248 (2018) DLT 392.

89 See, *S. Muthukumar v. The Telecom Regulatory Authority of India*, MANU/TN/1423/2019.

90 2019 (79) PTC 119 (Del): 259 (2019) DLT 468.

91 2019 (2) GLT 979.

92 See, *Assam Public Service Commission v. Izaz Yusuf Ahmed*, 2019 (3) GLT 754.

93 (2020) 198 PLR 1.

upon the application of the law relating thereto. Such assessment takes time and cannot be expected to be used with a click of the bottom, as artificial intelligence does. The courts should not behave like an artificial intelligence machines but should adopt a justice-oriented approach held by the High Court of Himachal Pradesh in *Kehar Singh v. State of Himachal Pradesh*.⁹⁴

In *Amar Nath Sehgal v. Union of India*,⁹⁵ the High Court of Delhi observed that the author's moral rights are flowing from section 57 of the Copyright Act of 1957.⁹⁶ These rights are the soul of the author's works. Through his moral rights, the author is entitled to maintain, safeguard, and care for his works. The author would have inalienable moral rights which would last for his lifetime. Moral rights encourage the emergence of a social mindset that values individual creativity.⁹⁷ This would be a moral obligation to act with integrity. Under article 6bis of the Berne Convention, if the moral rights to attribution and integrity in his work are breached, the author is empowered by the moral right to integrity to pursue the necessary legal remedies. Because they remain in the author's possession even after he has given up his economic rights to his work, the moral rights outlined in the Berne Convention are significant. The thoughts and feelings of the human author are connected to moral rights. As a result, moral rights are not intended for artificial intelligence.

The moral rights under copyright law are available to the author alone. In *PEE PEE Publisher and Distributors (P) Ltd. v. Neena Khanna*,⁹⁸ the High Court of Delhi held that moral rights are only relating to the right to paternity, integrity, and rights against distortion and mutilation. Thus, moral rights address issues such as lack of attribution or distortion of the author's work.⁹⁹ Artificial intelligence-generated works should not

94 2021 (1) Shim LC 143.

95 2005 (30) PTC 253 (Del): 117 (2005) DLT 717.

96 The bundle of copyrights which are conferred by the Copyright Act 1957 can broadly be classified into four groups: (i) economic rights, (ii) moral rights or author's special rights, (iii) performers' rights, and (iv) broadcast reproduction rights. So far as the "moral rights" or "author's special rights" are concerned there are four categories of such rights : (i) the right to be identified as the author of a work; (ii) the right of an author of a work, the "integrity right"; (iii) a general right, that every person has, not to have a work falsely attributed to him; and (iv) right against piracy. See, Jatindra Kumar Das, *Law of Copyright* 29 (PHI Learning Private Limited, Delhi, 2021).

97 See, Andrew S. Gold, "A Moral Rights Theory of Private Law" 52 *William and Mary Law Review*, 1873-1931 (2011).

98 2009 (40) PTC 515 (Del).

99 For moral rights, see, Francina Cantatore and Jane Johnston "Moral Rights: Exploring the Myths, Meanings and Misunderstandings in Australian Copyright Law" 21(1) *Deakin Law Review* 71-92 (2016); Daniel Gervais, "The Protection of Performers under US Law in Comparative Perspective" 5(1) *IP Theory* 116-133 (2015); Robert C. Bird and Lucille M. Ponte, "Protecting Moral Rights in the United States and the United Kingdom: Challenges and Opportunities under the U.K.'S New Performances Regulations" 24 *Boston University International Law Journal* 213-282 (2006).

have any authors and should belong to the “public domain.” Since artificial intelligence incurs no costs during the creation of a work, it makes perfect sense to provide the public with free access to the product of artificial intelligence. Artificial intelligence is capable of duplicating any number of its own works without using additional resources or money. But one of the goals of copyright law is to encourage the author of the work by giving him moral and financial incentives to generate more works for the benefit of society. Being nonhuman, artificial intelligence does not need such inspiration to produce the work. Artificial intelligence thus violates the fundamental tenets of copyright law.

VII Conclusion

Applications based on artificial intelligence are already changing people’s lives in ways that are frequently not completely understood. It has the power to significantly influence India’s economic and security landscape in the future. India’s private sector is yet to have a substantial international influence in artificial intelligence. It is crucial that decision-makers carefully evaluate how the introduction of industrial robots and their effects on manufacturing changed businesses in other developing countries. Artificial intelligence is useful, especially for the sake of legal reasoning, according to legal science. Legal reasoning is a broad term that describes the formation and justification of a response to a specific legal topic, such as what verdict should be rendered after a trial or if and how much a person must pay in taxes. By examining databases of legal texts and determining which cases are pertinent to the specific ongoing legal procedures, artificial intelligence systems can help with legal reasoning, for instance. Due to its ability to weed out extraneous information, this tool considerably simplifies legal research. Because of the nature of artificial intelligence, it is difficult to regulate it or develop a specific legal framework for it. There are many definitions of artificial intelligence, but none of them is both globally applicable and clear. This is mostly because it is difficult to define the term “intelligence” itself.

Using facial recognition technology, autonomous machines can carry out intricate financial transactions, identify prospective terrorists, and—most concerningly for this author and his legal contemporaries—perform document reviews. When those machines cause harm, the legal system will need to decide what to do and whether direct regulation would be a desirable method to lessen that harm.¹⁰⁰ Artificial intelligence is typically protected by intellectual property as software through copyright since it is viewed legally as a product of creative endeavor. A software patent may also be able to protect in certain circumstances. Regarding the degree of protection, the artificial intelligence software patents are, however, in doubt. Due to their ongoing evolution and potential for user manipulation, they may be violated in a particular way. Products include both

100 See, Matthew U. Scherer, “Regulating Artificial Intelligence Systems: Risks, Challenges, Competencies, And Strategies” 29(2) *Harvard Journal of Law and Technology*, 354-400 (2016).

software-based artificial intelligence systems and systems that are seamlessly integrated into physical objects like robots. These latter systems are referred to as “cyber-physical systems.” As a result, legislation to protect artificial intelligence must be enacted in India while still respecting fundamental constitutional principles and universal human rights. This makes it clear that artificial intelligence-based contracting acts would not match the usual definition of a private law declaration of purpose. Any attempt to include it by drawing an equivalence between the legal intentions of existent juridical persons and those of natural persons would result in a disruptive interpretation of the fundamentals of private law and its constitutional context. The foundational elements of private law would need to be redefined by the legal profession, beginning with the definition and function of the legal subject and subjective right.¹⁰¹

101 See, Stefan Koos, “Machine Acting and Contract Law – The Disruptive Factor of Artificial Intelligence for the Freedom Concept of the Private Law” 5(1) *UIR Law Review*, 1-18, 9 (2021).