

A Study of Emerging Dimensions of Artificial Intelligence in Law and Human Rights

ABSTRACT OF THESIS

SUBMITTED TO THE
BABASAHEB BHIMRAO AMBEDKAR UNIVERSITY
LUCKNOW



FOR THE DEGREE OF

Doctor of Philosophy

SUBMITTED BY
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ENROLMENT NO. : 086/17

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2023

ABSTRACT

Part I

In today's time period AI has covered the whole of the nation, in almost every aspect of field of knowledge such as education, medical, entertainment, automobiles, etc. AI now is considered as the fourth industrial revolution everywhere, because of its emerging and rapidly growing nature. The creation of "Artificial Intelligence" has not only made our life easy, but has also reduced a lot of technological strain from our minds as well. We can enumerate numerous illustrations related to this fact. Right from checking our mails to the creation of various profiles in the social websites for job profiles, we have AI everywhere. AI has improvised even our search engines and currently we have options for everything. AI has also guided the various other departments from the prevention of frauds and cybercrimes.

The advancement of technology has already created such sophisticated machines that can perform any action so intelligently and accurately without any major error. Such sophisticated machines i.e. Robots are the brainchild of the human mind and humans have insulated the intelligence in machines by programming them in a particular manner. The Expression 'Intelligence' is itself a matter of great concern. The dictionary explains the two meanings of Intelligence in two different contexts. Firstly, someone's Intelligence is their ability to understand and learn things and Secondly, intelligence is the ability to think and understand instead of doing things by default or automatically¹. The first definition clearly indicates about the intelligence of human beings whereas the second definition carries different approach which does not clearly speak about whether it is someone or something that has the ability to think and understand.² Either it is someone or something, must have a mind that enables the ability to think and learn. It simply means that either human has the ability to act intelligently or human can make something (machines) intelligent by inducting them the ability to act intelligently. Computational technology is the best example of how a computer can be programmed by a scientist to act fastly and

¹ Essential English Dictionary, Collins, London, 1990.

² Michael Negnevitsky, *Artificial Intelligence, A Guide to Intelligent Systems* 20 (Pearson Publication, 2nd edition, 2008).

accurately. The development of Artificial Intelligence [herein after AI] relies on the same plank in which intelligence is inducted in artificial machines. AI is not only one of the most exciting fields in computer engineering today but it has also a profound impact on other fields. AI, as it is known popularly, is the science and technique used to make a machine intelligent. The idea of making a machine intelligent, so that it can function intelligently as we human beings do, is itself fascinating on one hand and challenging on other hands.

Defining the concept of AI is itself a challenging task, many computer scientists have tried to give a concrete definition of AI. According to Nils J. Nilsson: AI is that activity devoted to making machines intelligent, and intelligence is that quality which enables an entity to function appropriately and with foresight in its environment³. This definition is not exhaustive in nature because of the dynamic character of AI that varies with time, which is why defining it is an exceedingly difficult task. AI is the software engine that drives the Fourth Industrial Revolution. Basically, AI is based on the combination of Machine Learning and Deep learning which can be considered as two pillar of AI. One side, Machine Learning is a type of data mining technique that examines the large pre-existing data and extract new valuable information from that database and other side, Deep learning is a subset of machine learning and is called deep learning because it makes use of deep neural networks. The machine uses different layers to learn from the data. The depth of the model is represented by the number of layers in the model. Deep learning is the new state of the art in term of AI. It can be said that Deep Learning is a subset of Machine learning, which is also a subset of AI.

AI has spurred exciting innovation in our day to day lives. Its impact can be seen in home, business and political processes. In its embodied form of robots, it will be soon driving cars, stocking warehouse and caring for the young and elderly⁴. Even the Group of Twenty (G-20) leaders have also made a declaration for fostering global economic growth while harnessing the power of technological innovation i.e. proper

³ Dr. Narendra Jadhav, *New-Age Technology and Industrial Revolution 4.0: Global Public Policy Issues in Economy, Democracy, National Security and World Peace* 16 (Konark Publisher Pvt. Ltd., New Delhi, 2019).

⁴ World Economic Forum, *available at:* <https://weforum.ent.box.com/v/C4IR-Brochure> (Visited on December 08, 2019).

application and implementation of the mandate of the Industrial Revolution 4.0⁵. Presently, what was deemed to be science fiction is fast becoming a reality and the evolutionary character of AI is becoming a challenging issue for state legislatures and it's raising the complex questions and far-reaching societal concerns. Prof. Stephen Hawking has raised the concern that emergence of AI will be “either best, or the worst thing, ever happen to humanity but at the same time, he praised that our human civilization and species are ready to acknowledge it⁶.

AI, through a broad spectrum of branches and applications, will impact corporate and business integrity, corporate governance, distribution of financial products and services, intellectual property rights, sustainable development goals, human rights, privacy and data protection, employment, civil, criminal and contractual liability and a significant number of other legal fields. The advancement of AI Entities has given a new legal remonstrance to our legislatures. The first and foremost issue is to provide the concrete and suitable definition of AI which is more compatible with legal fields because the subject of AI is considered as purely a term of computer science and its implementation in the legal field would attract a new dimensions of explanation. It has been seen that at the initial stage of the legal system, only human beings were the subject of laws but with the passage of time, the industrial revolution took place which developed the corporate sector and industries, but in order to control the activity of these entities, the legislature has given them legal personality in order to determine their rights and liabilities and also different legislative enactments have been passed i.e. company law. In the era of the Industrial Revolution 4.0, AI is itself a challenge for our legislatures in order to curve the legal issues arising from such Entities. The scope and horizons of AI are expanding day by day and affecting the different areas of legal fields. In the area of the manufacturing and industrial process, AI Entities i.e. Robots are replacing the labour forces and performing a heavy activity with more proficiency. For example, Amazon Online Shopping Company has introduced new robotic equipped, Corton Wrap Machine in its warehouses with the aim of creating a cheaper and more efficient supply chain.

⁵ European Council, “G20 Osaka Leaders’ Declaration”, European Union, June 29, 2019, available at: <https://www.consilium.europa.eu/en/press/press-releases/2019/06/29/g20-osaka-leaders-declaration/#> (Visited on December 18, 2019).

⁶ Alex Hern, “Stephen Hawking: AI will be 'either best or worst thing' for humanity” *The Guardian*, October 19, 2016, available at: <https://www.theguardian.com/science/2016/oct/19/stephen-hawking-ai-best-or-worst-thing-for-humanity-cambridge> (Visited on October 26, 2019).

This Robotic Machine can box 500-600 boxes per hour which are about 4-5 times more than manual human packing⁷. Similarly, in the field of healthcare, AI is playing a very vital role in order to analyse the complex and large amount of data that was undertaken previously to aid the discovery of various drugs. Recently Peter Rogan, Professor at the University of Western Ontario, has confirmed that AI can be used to predict breast cancer⁸ which would analyse improvement while using the drug Paclitaxel⁹. Further, Elon Musk, Founder of Tesla, has developed Autopilot vehicles having the autonomous driving capability. Such advanced AI Entities have been developed in recent decades that now it has become desirable for the legislature to come with a certain legislative framework that can address these problems. For instance, If these AI Entities i.e. Robots while working in Amazons warehouse commits any negligence or If Self-Driving Tesla Car commits the accident while driving the car or Any medical negligence happens while operating by these AI-equipped technologies, commits any wrongful act, a reasonable question can be posed that who will liable for such wrongful act- whether it is Manufacturer, user or AI Entities Itself. These questions are unanswered and create a legislative problem.

Further it can be seen that 21st Century has turned into the time of big data and modern innovation. This all worries everybody as the importance and value of different human rights is subject to enormous discussion. For instance, the increasing power of AI is creating threat to privacy which is bringing forth information break and security issues. AI has capacity to gather and compile gigantic quantity of data from various sources. It is applied in a vast number of situation that influences how individual access and find information online. This data may be of extremely sensitive nature ranging from religious views to sexual orientation and political views. AI application can be used to track and identify people across different devices. It is pertinent to express here that the issue of Aadhar Card and its impact on privacy is a part of AI and since the Apex court of India has remarked that Right to privacy is an instinct part of right to life and personal liberty under Article 21 of the Constitution of

⁷ Nicholas Shields, "Amazon is rolling out new warehouse robots", *INSIDER*, May 15, 2019, available at: <https://www.businessinsider.com/amazon-introduces-new-warehouse-robots-2019-5?IR=T> (Visited on October 29, 2019).

⁸ Eugene Borukhovich, "How will artificial intelligence change healthcare?" *World Economic Forum*, October 26, 2015, available at: <https://www.weforum.org/agenda/2015/10/how-will-artificial-intelligence-change-healthcare>(Visited on November 06, 2019).

⁹ Paclitaxel is a chemotherapy drug used to treat ovarian, breast and non-small cell lung cancer.

India¹⁰. In Every situation, AI is fit for de-anonymizing this big data dependent on readings gathered from other devices which means thin line between personal and non-personal data is revoked and nothing is personal for AI. Even AI will have profound impact on the freedom of speech and expression as guaranteed under Article 19 of the Constitution of India. AI has capability of dissemination of information by utilizing the pre-existing data and AI algorithms can also be manipulated to regulate and limit the access to information and restrain free speech. Recently, our legislature has proposed a bill named as The Personal Data Protection Bill, 2019 that is a positive sign for the protection and promotion of right to privacy. AI also affects the right to education as guaranteed fundamental rights in our constitution. The academic sector is becoming more convenient and personalized because of numerous application of AI for education. This has changed the way people learn since educational materials are becoming accessible to all through smart devices and computers.

Apart from human rights perspective, it is pertinent to see the impact of AI on sustainable developments goals as target by the United Nations. As per the Article 27 of Universal Declaration of Human rights, which states that there must a fine balance between human rights and technological innovations and such sophisticated technologies must be used for the uplifting the human rights of every individual. For instance, the goal of good health vis-à-vis right to health has seen tremendous impact of such AI based technologies. In across the globe, different technological equipment's has been developed in order to perform different medical surgeries and other medical helps. In the same way the innovation has been seen in the education sector where a virtual education platform is being given to children's. Thus these technology should be used as means to achieve the goals. The state should address these issue within the framework of laws because one side AI can be a boon for us but another side it poses a threat to human existence as well. This research study analyses each and every aspect of these legal issues and will try to provide a pragmatic and reasonable solution.

¹⁰ Justice K S Puttuswamy v. Union of India [(2017) 10 SCC 1].

Part II

Statement of Problem

The emerging technological revolution that underlines the Fourth Industrial Revolution is throwing up immense opportunities and possibilities. Such technological advancement has a potential impact on global economic growth and human development. At the same time in its wake, such transformative technology i.e. AI Entities has given rise to a series of complex questions and far-reaching societal concerns. The expansion of AI in the present technological world has become an issue of debate because it is affecting or challenging well established legal system of a state and now it has become necessary for the legislature to provide or enhance its legislative framework in order to deal with such issues. Under this context Following can be the statement of problem-

- I.** Before the emergence of the industrial revolution, the jurisprudential philosophy of different schools of thought has suggested that laws which were made at initial stage either by state or social customs, were only subject to human beings. It simply implies that in the law of nature or in state affairs, laws have been given in order to govern the human behaviours, not the behaviour of non-humans. Human beings were recognized only the sole personality on which laws can be applied. Post Industrial Revolution has established a new entity i.e. Industries and Companies and during this era, the machines were displacing or replacing the human labour. This era cropped up a new legal problem that how these entities can be regulated within the boundaries of legislative framework? In order to deal with the issues relating to industries and companies, our legislature tried to evolve a new dimension of legal personality and acknowledged the fact that these entities can only be regulated since we keep them within the ambit of laws. They conferred the legal personality to companies and enacted the legislation for them. The conferment of legal personality to an artificial entity is itself a debatable question. In jurisprudence, many jurists have propounded different theories i.e. Fiction theory, Purpose Theory, Realist Theory, Symbolic Theory, and Concession Theory, which gives the different explanations relating to legal personality. In the Era of Industrial Revolution 4.0, AI is rapidly changing

how we live, think and work. Regulating AI is going to be challenging and difficult. Unfortunately, the current and traditional jurisprudential theories are not satisfactory to give a proper response to these problems. *AI will thus strain the legal system that how can it be regulated and should it be given the legal personality?* One side there is discussion over the conferment of legal personality to AI entities and another side, on 25th October 2017, Sofia, the humanoid robot has been granted the Saudi Arabian Citizenship, becoming the first robot ever to have a nationality. Conferring the citizenship to a robotic entity implies that it has individual existence as a human being and it is entitled to all civil rights and liabilities within the legislative framework of a particular country. It creates a new legal challenge for the legislature in the era of New-Age Technology and needs to be addressed.

- II.** Since it is presumed that AI entities should confer the legal Personality and this conferment makes them subject to different laws. It raises a reasonable question relating to the determination of its implications, accountability and liability within a legislative framework and also impact on human rights and Sustainable development Goals. The idea of making AI entities liable is due for consideration. So far as civil liabilities are concerned, today contracts are executed between two human beings i.e. one person offers and another signifies his assent and contracted is completed. Since its phase of AI, now contracts are being executed between machines i.e. called as Automated Contract. Can they have authority to enter in such contracts? And can they be challenged if court of law if any disputes arise? Further if Any AI entities like a robot or self-driving car commit any negligence i.e. Robots commits the medical negligence during treatment of cancer patients or if self-driving car commits the accidents due to its negligence, in the above situation, who will be held liable for such wrongful acts. Further in case of criminal liability, if Robots or Self-driving cars while performing its usual function commits any crime like murder, again the question of liability will be raised. Whether the user or manufacturer or AI entity itself will be liable? The possibility of Direct Criminal Liability of AI is increasing the attention of legal scholars as many suggest that When an AI entity established all elements of a specific offense, there is no reason to prevent the imposition of criminal liability upon it for that

offense. It implies that if all requirements of a crime are met, criminal liability may be imposed upon any entity- human, corporate or AI entity. These problems are a matter of great concern in the era of New Age Technology. The list of these legal problems are not limited up to civil and criminal liability but it also expands in several legal fields i.e. Human Rights, Sustainable Development Goals, Intellectual Property Rights, Privacy and Data protection and Ownership, Laws and so on.

Objectives of Study

The objective of the study is to provide comprehensive details of AI entities and their legal challenges in the present legal system. The specific objective of this study follows as:

- i.** To analyse the concept of AI and its different technological dimensions.
- ii.** To provide comprehensive and detailed jurisprudential response relating to the legal personhood of AI entity.
- iii.** To explore the expanding horizons and scope of AI in the area of Sustainable Development Goals and human rights.
- iv.** To examine the existing various legal fields and its impact and compatibility with AI entities in order to determine its implications, accountability and liability.
- v.** To provide pragmatic solution and suggestions in order to solve such new legal challenges.

Research Questions

The Research Question of the present research work is developed on the following formulation by researcher:

1. Whether the emergence of New-Age Technology AI, have affected the human mankind in every aspect positively as well as negatively?
2. Whether jurisprudential theory of legal personality are satisfactory in order to confer the legal personhood on AI entities?

3. Whether AI affecting the human Rights and Sustainable Developments Goals which includes various areas?
4. Whether the expanding horizons of AI in legal fields have posed a legal remonstrance in various fields of law?
5. Whether the existing national as well as international legal system, are adequate to determine the implications, accountability and liability of AI entities?

Scope of Study

Emerging technology underlying the Industrial Revolution 4.0- AI has been disrupting practically the every aspect of mankind. AI has tremendous applications in a very wide range of human endeavours i.e. Communication and Transportation, Health and Safety, Privacy and Security, Manufacturing, Space Exploration, legal fields and so on. The expanding scope of AI has instigated the researcher to work on these issues. The research study aims to investigate the evolution of AI and its relevancy in different legal Fields. AI is challenging our legislative framework and existing legal system which are not that much sufficient to cure the legal problems arising from such AI entities. Its responsibility, accountability and liability has been assessed under this work. This study practically provides that jurisprudential theories which are in adequate can be reformed and made compatible in such a way that could include these AI entities. This research work provides a ray of hope to our legislative bodies as well as to other legal scholars who are working on it. The regulation and proper management of AI entities are possible only once they will be subject of certain laws.

Research Methodology

The present work has been humbly carried out by the researcher which has goaded the intellectual inquisition in an organized and systematic investigation by employing doctrinal Method. In Doctrinal Form of Methodology, it consists of primary and secondary sources. Primary Source shall consist of international instruments as well as national legislations and judicial decisions. The secondary sources consist of books, articles & research papers, newspapers, websites and e-resources. Apart from resorting to relevant statutory material for making thoughtful

study-reports, articles and commentaries of various authors on AI and its implications in present socio-legal environments and statutory material of some western countries have been examined carefully. Other Relevant Materials has been collected from various reputed library namely Indian Law Institute, New Delhi, Dr. Rammanohar Lohia Law University, Lucknow and other universities including Gautam Boudh Central Library, BBAU. Apart from this the researcher has also visit a number of legal sites during course of study. Throughout the research work uniform mode (ILI Format) of citation has been followed.

Limitation of the Study

Since the advancement of AI is covering various areas but researcher has primary focus on the legal issues. The study highlights the major areas of legal fields where AI is creating a legal remonstrance.

Chapterization Plan

The entire study is divided into seven chapters which may be briefly mentioned as follows:

Chapter I- Introduction

This chapter proposes the broad framework of thesis. It provides the general introduction on the subject. Further the researcher briefly discusses the statement of problem, objective of study, research questions and the scope of study followed by the review of literature along with research methodology which would be adopted for the study.

Chapter II- History, Concept and Types of Artificial Intelligence

This Chapter explains the history & concept of AI and its different technological and computational dimensions in New-Age Technology. It also explores the working of AI by using the tool of Machine Learning, Deep Learning and Artificial Neural Networks.

Chapter III- Legal Personification of AI Entity

This chapter deals with the jurisprudential aspect of research work. Legal conception of Personality and the views of different prominent jurists and their

theories would have been described carefully in order to confer the legal personality to these AI Entities. This chapter also critically examines the unsatisfactory remark of these personality theories and also add some modern combination of jurisprudential approach to curve these issues.

Chapter IV- Determination of Responsibility, Accountability and Liability of AI Entity

This chapter analyses general principles of criminal liability, tortious liability, vicarious liability, contractual liability, and liability in the domain of Intellectual Property Rights, Family Law, Administrative law and other remaining fields of law. It examines the Indian legislations and its compatibility on the issues of AI. It also scrutinizes the international as well as national legislations, expert committees report and recommendations and judicial response for the determination of rights and liabilities of AI entities.

Chapter V- Emerging Opportunities of AI with special reference to Sustainable Developments Goals (SDGS) and Human Rights

This chapter interestingly deals with assessment of role AI on Sustainable Development Goals (here in after SDGs). It comprehensively deals with every goals of SDGs that covers the wide range of areas which could be affected by AI. It also addresses the opportunities that how AI entities are human centric and potentially transforming the human society. It also analyses the ethical challenges of AI in present world.

Chapter VI- Various Dimensions of Artificial Intelligence and Human Rights

This chapter deals with various dimensions of AI use and its impact on different human rights. It includes right to privacy, right to life and personal liberty, freedom of speech and expression and so many others which is mostly affected by AI.

Chapter VII- Summation

This chapter prescribes the conclusion and suggestions of research work. It provides the pragmatic recommendation to these legal issues for the administration of justice. This chapter also explains certain adequate measures to mitigate these risks appropriately and also provide the future discourse of these issues.

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