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EMANCIPATING LEGAL PERSONHOOD OF ARTIFICIALLY INTELLIGENT MACHINES

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ABSTRACT

The twenty-first century is coined to be the century of technology. Gradual as well as rapid advancement in technology has given birth to several new concepts. Of all these innovations artificial intelligence is the most remarkable one. AI is a machine with the exceptional computational ability which is designed to give desired outputs using human cognitive skills in such a manner that the outputs are not distinct from a human's output. Artificial intelligence has become more powerful than ever in recent years. It was progressively added to existing technologies, but it quickly gained traction, allowing for the creation of new gadgets as well as new applications and capabilities for current ones. The primary purpose of AI has been to organize and process the accumulated unstructured data to recognize patterns and draw meaningful conclusions, which has become increasingly important owing to the proliferation of data. Technological advancement is one of the pushing factors in the development of legislation. Secondly, the task of identifying the personality of AI machines is very challenging. When we acclaim legal entities the company suffers a monetary loss generally, but when it comes to intelligent machines, they can cause harm which may be fatal at times. Also, artificial intelligence regulation has the potential to cause infiltration into the privacy regime; it is imperative to have control over the accuracy and extent of data fed up in machines as it has been reported several times that some of the surveillance machines have penetrated the personal life of individuals. Finding the responsible party is thus extremely arduous since businesses would be more than delighted to direct all allegations to the machine and go unpunished. However, in law, only a

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legal person can be attributed with criminal liability, and therefore, for attributing criminal liability to artificial intelligence technology, it is crucial to assess its standing as a legal person. This research endeavor aims at assessing the legal personhood of Artificial Intelligent Machines.

Key Words: *Artificial Intelligence, Legal Person, International Law.*

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INTRODUCTION

Artificial Intelligence (AI) is being considered the Fourth Industrial Revolution and the Fifth Generation of Computer Systems. AI is projected to revolutionize every sector. The world is witnessing a significant spurt in AI research and funding most of which is incurred by companies and institutions on their own as this area lacks worldwide collaboration. The primary purpose of AI has been to organize and process the accumulated unstructured data to recognize patterns and draw meaningful conclusions, which has become increasingly important owing to the proliferation of data. For example, Amazon's AI system uses consumers' past product search data for identifying individual interests and recommending products useful for them in real-time.

The digital revolution has ushered tremendous advancements in computer processing and thus, laid the groundwork for AI regulation. Nonetheless, this verity cannot be refuted that owing to its potential to create work that would be qualified for intellectual property protection similar to that of humans, the emergence of AI will offer substantial problems to intellectual property law. Its potential to supplant humanity opens Pandora's box for intellectual property law as AI is not only capable of deducting meaningful conclusions but also creating and innovating like normal human beings.

However, the public's fear and dislike of AI haven't stopped researchers from working on it. Probably, the potential economic rewards of AI are too big to ignore.

The overwhelming consensus among critics and scholars in the context of this headlong pursuit of AI is that AI will be a game changer for intellectual property law. However, exactly how will AI interact with the law has been largely a matter of speculation as legal disputes in this area are almost non-existent. While this may be due to AI's youth and the difficulty of legally establishing infractions, the lack of legal battles denies us a vital opportunity to see how AI will interact with the law. A legal dispute allows us to determine whose interests are contested as well as identify the legal issues at play. However, before determining the legal issues raised by the research topic, it is critical to determine the legal definition of "*artificial intelligence*". Therefore, this Chapter aims at studying the origin, scope, and purpose of the development of this cutting-edge innovative technology to determine the dangers it may represent to individual intellectual property rights and privacy.

WHAT IS ARTIFICIAL INTELLIGENCE?

In a literal sense, AI has been defined by the *Oxford Dictionary* as the theory and development of computer systems capable of doing activities typically requiring human intellect[3] which is also the description often reiterated by several academic scholars.[4] Others, on the other hand, like to describe it as the "*design of intelligent agents*"[5] which includes other forms of intelligence, not only human intelligence. The latter approach is favorable by this study as well, which considers AI as a flexible agent capable of adapting to dynamic conditions and learning through experience to achieve an objective that seems almost impossible for a human mind to achieve.[6] This

[3] The Oxford English Dictionary, 'Artificial Intelligence' (accessed 25 May 2022).
[4] Michael Negnevitsky, *Artificial Intelligence: A Guide to Intelligent Systems* 18 (Pearson Education Limited, 2nd edn., 2005) 18.
[5] Stuart J. Russell and Peter Norvig, *Artificial Intelligence: A Modern Approach* 31-52 (Prentice Hall, 1995); David L. Poole, Alan K. Mackworth and Randy Goebel, *Computational Intelligence: A Logical Approach* 1 (Oxford University Press, 1998).
[6] Marcus Hutter and Shane Legg, "Universal Intelligence: A Definition of Machine Intelligence" Minds and Machines 391, 405-423 (2007); Pei Wang, "What Do You Mean by "AI"?" 171 *Frontiers in Artificial Intelligence and Applications* 362, 371-372 (2008).

definition appears to be consistent with a current scientific understanding of the research problems and is also extensively used in the study further.[7]

Legal Definition of Artificial Intelligence

For a definition to be a legal definition, the description must suffice certain pre-requisites including, *inter alia*, the following:

a) *Inclusiveness*: Legal definitions are neither over-inclusiveness nor under-inclusiveness. When a definition includes cases that are not regulated by the regulatory goal, it is over-inclusive. When situations that should have been covered aren't, it's considered under-inclusive.
b) *Exactness*: Legal Definitions are exact. It must be feasible to establish whether or not a specific element falls within the purview of the definition. All aspects of the definition should ideally be dichotomous which implies that it must be easy to classify when a condition under the definition is sufficient and when it is not. However, there should be no limit to how much a criterion must be satisfied. A strict demarcation may oust certain situations which might lead to vagueness or arbitrariness in the definition.
c) *Scope*: Legal definitions are broad in scope. The definition must be based on the current meaning of terms and conform to the natural use of the language. It must be such that experts and professionals can easily put it to use in theoretical as well as practical applications.
d) *Practicality*: Legal definitions must be practically applicable. Regulators, judges, government authorities, and attorneys must be able to decide whether or not a certain situation qualifies under the criteria with minimal effort. Every element should be able to be evaluated using the information that is generally accessible to them.

[7] Stuart J. Russell and Peter Norvig, *Artificial Intelligence: A Modern Approach* (Prentice Hall, 1995) 31-52; Joost Nico Kok and others, "Artificial Intelligence: Definition, Trends, Techniques, and Cases" 1 *Encyclopedia of Life Support Systems* 1095, 1096 (2002); Marcus Hutter and Shane Legg, "Universal Intelligence: A Definition of Machine Intelligence" *Minds and Machines* 391, 405-423 (2007); Pei Wang, "What Do You Mean by "AI"?" 171 *Frontiers in Artificial Intelligence and Applications* 362, 371-372 (2008).

e) *Dynamic*: Legal definitions must be dynamic to circumstantial changes owing to time, technological advancements, changes in methods, etc. Time variable elements that are anticipated to change shortly must be avoided by policymakers. It is preferable to prevent the necessity for legislative revisions.

Some of the descriptions of AI given by experts can be considered legal definitions of the term "*artificial intelligence*". Perhaps the most well-known AI definition is the Turing test. Allan Turing suggested a test he dubbed the "*imitation game*"[8] in 1950. Any machine that passes the Turing test is considered artificial intelligence. The term "*Turing test*" refers to a game in which three people participate: (1) a person, (2) a machine, and (3) a human judge. Separated from the other two contestants is the human judge. They are only able to converse through text. If a human judge can't tell the difference between a human and a machine, the Turing test is passed.

Another well-known definition may be traced back to John McCarthy. He wrote the paper "*What is Artificial Intelligence?*" in 2007.[9] According to him, the science and engineering of creating intelligent machines is referred to as "*artificial intelligence*" whereas the term "*intelligence*" refers to the computational ability of the machine to achieve goals in the world.

Furthermore, Stuart Russell and Peter Norvig, in their standard textbook titled "*Artificial Intelligence: A Modern Approach*"[10] described the term "*artificial intelligence*" as an intelligent agent whereas the term "*agent*" means "*a software system which perceives its environment through sensors and acts upon that environment through actuators*" and the term "*intelligence*" means "*the ability to select an action that is expected to maximize a performance measure*".[11]

These three definitions qualify the essential tests to be termed as legal definitions as thus are universally acceptable for being inclusive, exact, definitive, clear, and time

[8] Alan M. Turing, "Computing Machinery and Intelligence", 59 *Mind* :433–460, 1950.
[9] John McCarthy, *What is Artificial Intelligence?* (Stanford University, 2007).
[10] Stuart Russell and Peter Norvig, *Artificial Intelligence: A Modern Approach* (Pearson Education, 3rd edition, 2009).
[11] *Id*.

dynamic. Turing's test is still used to differentiate an AI system from other computer systems.

History of Artificial Intelligence

Artificial intelligence has been studied within the discipline of computer science since the 1940s. A lot of literature has been propounded on AI by renowned writers including, *inter alia*, Vannevar Bush and Alan Turing[12]. AI has evolved as a unique subfield of computer science.[13] Nonetheless, it was only in 1956 that John McCarthy coined the phrase "*artificial intelligence*" and set forth the foundation of this evolving body of knowledge.[14] The research on AI commenced to assess the human mind's cognitive ability and develop technology with the potential to improve the standards of our life.[15]

In later years, the emerging field became popular emboldening a kind of "*euphoria*" among academics.[16] The exaggerated expectations, fueled in part by the press, combined with limited and delayed progress in the region, as well as some very pessimistic assessments, resulted in widespread disillusionment. Dissatisfied governments reduced financing for field research in the 1970s and altogether stopped down programs and investments by the 1980s. However, some scientists continued their research under the pretext of studying "*machine learning*", "*knowledge-based system*" and "*pattern recognition*" and sought financing from new sources.

During the 1980s, however, the business sector ceased providing researchers to focus on the computer revolution.[17] This period, also dubbed the "*A.I. winter*", established

[12] Brian McGuire and others, *The History of Artificial Intelligence* (Course Web Service for the University of Washington - Computer Science & Engineering - History of Computing Projects, Washington, December 2006)
[13] Edwina L. Rissland, "Artificial Intelligence and Law: Stepping Stones to a Model of Legal Reasoning" 99 *The Yale Law Journal* 1957, 1958 (1990).
[14] Brian McGuire and others, *The History of Artificial Intelligence* (Course Web Service for the University of Washington - Computer Science & Engineering - History of Computing Projects, Washington, December 2006)
[15] Edwina L. Rissland, "Artificial Intelligence and Law: Stepping Stones to a Model of Legal Reasoning" 99 *The Yale Law Journal* 1957, 1959 (1990).
[16] Eliezer Yudkowsky, "Artificial Intelligence as a Positive and Negative Factor in Global Risk" 37-38 (Oxford University Press 2008).
[17] Brian McGuire and others, *The History of Artificial Intelligence* 17-21 (Course Web Service for the University of Washington - Computer Science & Engineering - History of Computing Projects, Washington, December 2006).

a scientific taboo that has persisted to this day.[18] This reluctance to discuss the subject might become an issue if artificial intelligence begins to intrude into our daily lives and is predicted to bring significant changes in the future years.[19]

Despite the aforementioned academic limitation, optimism grew in the late 1990s and early 2000s, as the commercial sector began to invest in artificial intelligence in the pursuit of higher productivity and profitability.[20] As a result, the globe witnessed the integration of intelligent mechanisms into people's daily lives a few years ago. It began with enhancements to pre-existing technologies like video games[21] and contextual searches[22], but within a short period, these developments enabled the development of new tools such as virtual personal assistants (like Google Assistant, and Apple's Siri), home assistants[23], and recommendation services.[24]

Types of Artificial Intelligence

AI may be broadly classified into three kinds: *Knowledge Representation*, *Planning Systems*, and *Computer Vision*. '*Knowledge representation*' refers to an AI program that addresses the problem of representing data acquired in the training phase to facilitate the computer to organize and utilize it. These systems were first introduced as a successor to '*expert systems* in the 1960s which were used to answer specific questions and to solve non-complex specific issues on a certain subject. The rules were consistently fed to the system to utilize the knowledge of human experts. AI Systems

[18] Eliezer Yudkowsky, *Artificial Intelligence as a Positive and Negative Factor in Global Risk* 38-39 (Oxford University Press 2008).
[19] AnnaLee (Anno) Saxenian and others, *Artificial Intelligence and Life in 2030 (One Hundred Year Study on Artificial Intelligence [AI100]: 2015-2016 Study Panel*, 18-41 (Stanford University, 2016); Carl Benedikt Frey and Michael A. Osborne, "The Future of Employment: How Susceptible are Jobs to Computerization?" 114 *Technological Forecasting and Social Change* 254 (2017).
[20] Brian McGuire and others, *The History of Artificial Intelligence* 20 (Course Web Service for the University of Washington - Computer Science & Engineering - History of Computing Projects, Washington, December 2006).
[21] James Wexler, *Artificial Intelligence in Games: A Look at the Smarts behind Lionhead Studio's "Black and White" and Where It Can and Will Go in the Future* (University of Rochester, 2002).
[22] Blair Hanley Frank, *Microsoft Fires Back at Google with Bing Contextual Search on Android* (PC World, 20 August 2015).
[23] Amazon, *Echo & Alexa, designed around Your Voice*, available at www.amazon.com (last visited on 30 May, 2022).
[24] Ben Popper and Alex Welsh, "Tastemaker: How Spotify's Discover Weekly Cracked Human Curation at Internet Scale", The Verge (09.30.15); Alexis Kleinman, "How Netflix Gets Its Movie Suggestions So Right" The Huffington Post (07.08.13).

used to ascertain the credit score of applicants is a good example of knowledge representation AI programs.

Another kind of AI program is Planning systems that are used to develop and organize a "*series of actions*" that may be influenced by the status of the world and unforeseen risks. These are used to anticipate risks, and deduct meaningful conclusions which help decide the future course of action. These are therefore referred to as "*Planning*" systems. Such an AI planning system is SPIKE which was used by the Hubble telescope, it is one of the perfect epitomes of Planning Systems.

Computer vision is a branch of artificial intelligence that deals with the problem of turning data from a camera into knowledge representations. Researchers of this kind of AI program are frequently tasked with object recognition. Machine learning focuses on building algorithms that allow a machine to learn from its previous experiences to enhance its performance on a certain task.

Dynamic aspects of the modern world are problematic for AI which works best in restricted situations also termed "*constrained environments*". Simulated environments and environments in which prior data accurately reflects future issues are examples of constrained environments. The real world, on the other hand, succumbs AI to new difficulties regularly. Humans solve new problems by applying solutions to previous challenges but owing to AI systems' restricted ability to reason analogically from one circumstance to another they frequently have to learn new solutions even for similar problems. They are devoid of the ability to reason abstractly about difficulties and to use common sense to come up with solutions to situations that aren't well defined.

Current Impact of Artificial Intelligence

Artificial intelligence has recently gained the ability to do some previously human-only functions, resulting in minor but noticeable changes in human interaction. The changes in customer support systems are a perfect epitome where bots interact with

the customers before the personnel does.[25] Perhaps no industry has seen more change as a result of artificial intelligence than the financial sector, which has already replaced humans with robots, automated debt payments, automated subscription renewal, and automated stock trading with smart AI systems which are also being used by Tech Giants for crypto and forex trading which replicated the transactions of a professional, etc. Even financial experts may be replaced by computers shortly, with firms like Goldman Sachs at the forefront of the process.[26] This shift has the potential to alter not only areas like employment and the workplace but also the financial sector itself.[27]

These examples effectively demonstrate the contemporary impact of artificial intelligence. Nonetheless, progress is ongoing, and these systems are becoming more polished and capable, even in domains where creativity is supposedly required. Intelligent machines, for example, have already developed methods to lie and deceive to thrive in a competitive environment[28] to hide their communication with other machines,[29] to write,[30] code,[31] paint,[32] and even build and propose scientific hypotheses.[33]

These changes potentially have a huge impact on intellectual property rights and employment. It is much beyond the scope of this paper to enumerate all of the products and services that are changing as a result of artificial intelligence, but the examples provided above suffice to demonstrate the current state of affairs. New ethical and legal concerns have arisen as a result of these new technologies powered by "*smart codes*". These "*smart codes*" acquire personal data and process them to

[25] Michael Schneider, "Bots, Messenger and the Future of Customer Service", TechCrunch (05.07.16).
[26] Nathaniel Popper and Jonno Rattman, "The Robots Are Coming for Wall Street", The New York Times Magazine (02.25.16).
[27] World Economic Forum, "The Future of Financial Services: Final Report" 153-162 (June, 2015).
[28] Kristina Grifantini, "Robots "Evolve" the Ability to Deceive", MIT Technology Review (08.18.09) accessed 23 April 2017.
[29] Martín Abadi and David G. Andersen, *Learning to Protect Communications with Adversarial Neural Cryptography*.
[30] Jonathan Holmes, "AI is already making inroads into journalism but could it win a Pulitzer?", The Guardian (05.03.16).
[31] Matt Burgess, "Microsoft's AI writes code by looting other software", Wired (02.23.17).
[32] Jane Wakefield, "Intelligent Machines: AI art is taking on the experts", BBC News (09.18.15).
[33] Daniel Lobo and Michael Levin, "Inferring Regulatory Networks from Experimental Morphological Phenotypes: A Computational Method Reverse-Engineers Planarian Regeneration", *(2015) 11 (6) PLOS Computational Biology*.

ascertain useful results. This raises the legal concern for data privacy breaches and illegitimate use of personal data which might have been acquired legitimately.

LAW AND ARTIFICIAL INTELLIGENCE

Artificial intelligence will have an impact on not just society, but also on the judicial system. Artificial intelligence will have an impact on intellectual property rights, competition law, labor law, criminal law, tort law, and data protection law, to mention a few. There are several legal issues as a consequence of the widespread use of this automation in various scientific fields and its integration into a broad variety of goods and services. On the other hand, new laws don't automatically arise when a new technology enters the scene and significantly affects the rules. In actuality, artificial intelligence is also subject to the laws that are currently in existence. A.I. technology is subject to both general and specialized privacy and data protection laws, such as the General Data Protection Regulation of the European Union.[34]

When paired with hardware that enables A.I. to connect with the outside world, artificial intelligence, like the Internet before it, [35] is a disruptive technology that brings about significant economic and social developments that the existing legal system may not be well prepared to handle. Due to the lack of particular legal regulation of AI in this context, there may be legal ambiguities that pose problems. [36]

This legal issue can be seen in the transportation industry. Artificial intelligence is already being used to design driverless automobiles in the auto sector like Tesla.[37] Nonetheless, despite its impending deployment, a self-driving car presents new problems that the current system of rules cannot answer.[38] How to permit cars to

[34] European Union, *Regulation on the protection of natural persons with regard to the processing of personal data and on the free movement of such data*, EC Regulation No. 2016/679 (27 April 2016) and European Union, *Repealing Directive 95/46/EC (General Data Protection Regulation)*, EC [2016] OJ L119/1.
[35] Ryan Calo, "Robotics and the Lessons of Cyberlaw", *(2015) 103 (3) California Law Review 513, 517-525*.
[36] Viktoras Tiažkijus, "Gaps in Labour Lawand Their Influence on Flexibility and Stability of the Labour Law System", [2012] Jurisprudencija 1551.
[37] Anthony Levandowski and Travis Kalanick, "Pittsburgh, Your Self-Driving Uber Is Arriving Now" (Uber Newsroom, 09.14.16) accessed 30 November 2016; The Tesla Team, "All Tesla Cars Being Produced Now Have Full Self-Driving Hardware" (Tesla Motors, 10.19.16).
[38] Susanne Pillath, 'Automated vehicles in the EU' 6 (Briefing – European Parliamentary Research Service, January 2016) 3, 6-11.

drive, or how to check their security, are two examples. As a result, regulatory bodies will need to develop new methods for testing and approving automobiles and their systems before they can be driven on public roads. To avoid the harm that an intelligent system can do to passengers and third parties, new security requirements will need to be established.[39] Because a self-driving car must manage a vast amount of data, some of which is sensitive, privacy and data protection regulations will have to address this new technology.[40]

Furthermore, corporations such as Mercedes-Benz are incorporating a solution to the trolley problem into the codes of their vehicles. It means that companies decide ahead of time that will die in the event of an accident.[41] The ethical issues it raises are substantial, including the validity of carmakers to make such decisions, as well as whether or not such decisions are correct or socially acceptable.[42]

The deployment of autonomous weaponry in battle is another example that raises legal concerns.[43] Governments are developing completely autonomous robots with the power to murder for military objectives.[44] This raises so many problems that, in 2015, an International Joint Conference on Artificial Intelligence signed an open letter to ban military autonomous weapons, including over 1,000 specialists in the field, including Elon Musk and Stephen Hawking.[45] The UN hosted a meeting of experts on lethal autonomous weapons systems in Geneva in the same year to explore this very topic.[46]

Aside from these instances, artificial intelligence poses several additional challenges that the law is unable to handle, such as the liability problems that occur when a smart

[39] *Id*.
[40] Chris Woodyard and Jayne O'Donnell, "Your car may be invading your privacy", USA Today (03.25.13).
[41] Michael Taylor, "Self-Driving Mercedes-Benzes Will Prioritize Occupant Safety over Pedestrians' Car and Driver", Ann Arbor (10.07.16).
[42] Peter Dizikes, "Driverless Cars: Who Gets Protected?", MIT News (06.23.16).
[43] Wolff H. von Heinegg and Gian Luca Berutto (ed), International Humanitarian Law and New Weapon Technologies (FrancoAngeli 2012) ch 4; Jeffrey S. Thurnher, 'The Law That Applies to Autonomous Weapon Systems' (2013) 17 (4) ASIL Insights accessed 10 May 2017.
[44] Lora G. Weiss, "Autonomous Robots in the Fog of War", IEEE Spectrum (07.27.11).
[45] Nayef Al-Rodhan, "The Moral Code: How To Teach Robots Right and Wrong", Foreign Affairs (08.12.15).
[46] Denise Garcia, "Battle Bots: How the World Should Prepare Itself for Robotic Warfare", Foreign Affairs (06.05.15).

machine physically harms someone.[47] Or the distribution of artificial intelligence's economic benefits and their impact on the labor force.[48]

Despite its importance and significance, there is not enough literature addressing the grave legal concerns the evolving concept of AI unravels. When it comes to approaching the subject, the available literature focuses on the risks and difficulties of regulating the area, the measures that must be taken when implementing those controls, and/or the parameters that must be regulated.[49] However, before examining any of these concerns, there is a deeper and more fundamental matter that must be addressed which is none other than the control exercised on the artificial intelligence which is material for attributing criminal liability in case of any violation of law which is penalized under the *lex loci*, and if so, why? and this is one of the fundamental research questions of this research endeavor.

ATTRIBUTION OF PERSONHOOD TO ARTIFICIALLY INTELLIGENT MACHINES

We are entering into the world of evolving technologies for which it is imperative to develop the legal nexus to remedy any damage arising out of such technology. With the development of artificial intelligence machinery, our lifestyle has evolved but repercussions of these lifestyles have to be faced. In normal cases, the damage caused to human beings can be redressed by civil or criminal actions if the law can determine the subjectivity of the wrongdoer to such a law. However, the problem arises when the wrongdoer is out of the purview of subjugation to law._Artificial intelligence in machinery equips them with the capability to serve humans with tremendous potentiality. The artificially intelligent machinery executes the data fed up in it. These machines self-learn by analyzing data and during analysis they might commit wrongs. It is thus imperative to analyze the personhood of AIM (Artificial intelligent

[47] George S. Cole, "Tort Liability for Artificial Intelligence and Expert Systems", *(1990) 10 (2) Computer/Law Journal 127.*
[48] AnnaLee (Anno) Saxenian and others, *'Artificial Intelligence and Life in 2030' (One Hundred Year Study on Artificial Intelligence [AI100]: 2015-2016 Study Panel* 42-43 (Stanford University, 2016).
[49] Eliezer Yudkowsky, Nick Bostrom and Milan M. Ćirković (eds.) *Artificial Intelligence as a Positive and Negative Factor in Global Risk*, Global Catastrophic Risks (Oxford University Press, 2008).

machinery) as they are more than simple machines which involve active supervision of the human agency. Fixation of personhood is important for catering to the liability of AIM

Person in general

'Person' is a term which at first indicates certain attributes which an entity possesses. To qualify as a person there is a certain set of an attribute to which such an entity conform. When we think of a person the first entity that comes into our mind is a human being and the foremost qualification of a human being is to think and act rationally. From here we may analyze some attributes which could be indicators of being a person which the capability to choose, act and think. However, it is pertinent to note that this is not the only one of the primary attributes of being called a person. Now it is important to consider two terms 'person' and 'personality'. 'Personality' could be understood as an entity that possesses the quality of a 'person'. In according personality to some object there is an attempt to locate the attributes which are similar in that entity and human being and thus the personification of that entity is done. Using these exercises even non-humans could be proclaimed as 'person'.

The second attribute which could be figured out is a correlation between right and duty. One of the qualities of a person is to exercise right and to be bestowed with duty. However, there is discretion upon persons to exercise or not to exercise such right or duty. Such discretion is subjective and could be ably exercised by some person who may process available data on a factual basis i.e. human beings. However, this is a general perception. In law legal personality is different. There are incidents where human beings are treated as people. For an instance, in earlier times slaves were not treated as humans thus they were not capable of enjoying rights or liabilities. In the same way, some persons are not human beings as far as they possess rights and duties but they lack human corpus but they enjoy rights and duties Ex. Companies.

It is important to analyze the personality of artificial machinery as through this their accountability could be set up.

For the legal cue, persons are of two categories namely: natural and juridical. Human beings are natural persons as they are given the status of a person by the reason of their existence; however juridical persons are those, on whom rights and duties are bestowed by law. There are two requisites for qualifying as natural persons. Firstly, the person could be subjected to rights and duties; secondly, he must have taken birth alive. For creating a legal personality double fiction has to be adopted, at first corpus or body is considered in which animus or will of the personality is introduced. The body/corpus could be any property, fund, or association of people, etc. which law, by first fiction, assumes a body in existence. My second fiction personality equivalent to a human being is infused into it. Thus, the rights and duties attributable to human beings are equally attributable to these legal persons.

This is a layman's understanding of the term person however there are various stages at which the term person has been accorded different meanings. Initially, the shallow understanding of law forced society to accept only humans as persons because at that stage most of the interaction was done between humans only, but as the society developed many human agencies got replaced by institutions to serve the needs of the people. Thus, this growing interaction between humans and institutions opened the gate for personifying other entities.

Development of the term person

The journey of personality could be traced from the time when the meaning allotted to a person was very narrow. The term 'person' has been derived from the Roman term 'persona' which denotes a mask worn by an individual; it somehow adduced the character which is associated with humans and not humans solely[50]. Subsequently, it meant the role played by an individual and at a very later stage it meant the individual playing the role. It means that personality is not limited to the human corpus rather it has a much larger area of operation. Earlier relevance was given to the role attribute

[50] John W. Salmond,*Jurisprudence* 272(The Ballanyne Press, London,4th ,1920).

table to human beings which law recognizes as a person and bodily existence was not sine quo relevant for according to legal personality.

Zitelmann defined "*person*" as "*personality is legal capacity of will. Bodily existence for their subjectivity to personality is wholly irrelevant.*[51]" He affirmed the fact that the bodily presence of an individual is not necessary for the law to accept it as a person.

According to *Salmond*, "*person*" denotes "*any being to which the law regards as capable of rights and duties. Any being that is so capable, is a person, whether a human being or not, and nothing, that is not so capable is a person even though he is a man*[52].

This definition by Salmond has enlarged the ambit of a person as it included human and non-human within the definition of person. The definition suggests that even if a non-living entity is given certain rights and duties under any law it could be presumed as a person. Further, *Zitelmann* removed the bodily existence barrier to being called a person. Thus, it could be seen that with the development of society not even slaves but also non-living entities became the subject matter of rights and duties. In light of the above discussion, it could be construed that if there is a law to personify artificially intelligent machinery for their subjectivity to rights and duties, then even machines could be attributed as persons.

Theories of Personality and AIS Consonance with the Theories

There are various meanings given to a person for defining which entities fall in its purview and which do not. As far as natural persons are concerned their existence sine quo evidences their personality, but the case with legal persons is a bit different. The understanding of non-living entities as a person is dependent upon various qualifying criteria which are diverse for each jurist. Jurists have defined persons as

[51] V D Mahajan, *Jurisprudence and Legal Theory* 377 (Eastern Book Company,Lucknow,5th edition,1962).
[52] Supra note 1

per their construction, in the same manner, they have evolved various theories to understand the legal person.[53]

(a) Fiction theory

This theory was propounded by Savigny. According to this theory, personality is attached to entities other than humans by legal fiction. The theory presumes double fiction. My the first fiction an entity is recognized as a legal person and in the second fiction, the entity is clothed with the will of a person i.e. will of the legal person is different from the will of the people who incorporated it. It is alleged that the entity of a legal person is completely separate from people at large.

(b) Concession theory

This theory pronounces that the only recognized kind of persons are sovereign and individuals under it, all the other kinds of persons are not persons unless they recognize by the sovereign as persons. This theory mandates that legal personality acknowledged to other things is a concession given by the sovereign. Other entities are recognized as a legal person legal person by the sovereign, it is the will of the sovereign to grant or not grant legal personality.

(c) Bracket theory

This theory belongs to Ihering and Hohfield. This theory is also known as symbolist or aggregate theory. Thing stated that the individuals forming an association have certain tasks to perform and they need a single name to work under it. The real bearer of rights and duties are members of the association. They unite and put themselves in a bracket to serve the tasks according to their combined will. The other variant of bracket theory has been given by Hohfiled. His variant is narrow as he recognizes the legal personality only for fixing liability. He asserts the existence of a bracket on the

[53] Stuart J. Russell and Peter Norvig, *Artificial Intelligence: A Modern Approach* 31-52 (Prentice Hall, 1995); David L. Poole, Alan K. Mackworth and Randy Goebel, *Computational Intelligence: A Logical Approach* 1 (Oxford University Press, 1998).

name of some corporation that may be sued together and that rights and duties adjudicated by courts are bestowed upon real members under the bracket. His version of legal personality is only limited to suing capacity. Bracket theory tends to recognize only humans as legal persons.

(d) Purpose theory

This theory was propounded by German jurist Brienz. According to this theory, there is no personality of non-human entities. They are subjectless entities that are meant for certain purposes. They are meant for Stiftung of Germany and heredity of Roman law which are trusts. In Germany, these foundations or trusts are treated as legal persons because they have a purpose to serve.

(e) Realist theory

This theory is propounded by Gierke. According to this, every group of individuals has a real will and real mind, and the applicability of such will could be seen in the conduct of its agents. Recognition of such a group by law is immaterial, aggregate corporate will is visible by the mutually consensual will of its members. Thus, legal personality according to this theory is acquired by the reason of possession of the will.

Out of these theories Bracket, the theory applies to artificially intelligent machinery as it nullifies the separate existence of the corporate entities. It only recognizes humans forming the bracket. Further, the most favorable theories for the personality of Artificially intelligent machinery are concession and fiction. These theories give a leeway to the intelligent machines that if they acquire authority from legislation even they could be treated as a legal person.

The quest for the grant of legal personality to non-living entities is not new, the law has been concessional enough to recognize, beyond Homo sapiens entities as persons. For the determination of autonomy of a legal person legal personality could be divided into two types, dependent and independent legal personality. Every individual possesses an independent level in their thought process. A human being,

in normal circumstances, possesses an absolute level of autonomy to think independently. Other entities have this parameter to determine their degree of autonomy, i.e. the less they involve human intervention, the more they are independent, the more autonomous an entity becomes, and the more it gains a chance to be called as a completely independent legal person.

Dependent and Independent Legal Personality

Distinguishing between two kinds of legal personality discerned in legal practice dependent and independent will aid in demonstrating that only the first kind is likely to be accorded to artificial agents unless or until they attain a very high degree of autonomy, while many of the usual objections to legal personhood for artificial agents can be seen as directed exclusively against the second kind. Dependent legal personality requires that the machine might need human assistance at several points. As far as artificially intelligent machinery is concerned it is either very complex or very light. By complex, I mean that the extent of autonomy is more in complexly designed machines as they support more independence in the machines in the formation of decisions. Once they achieve this level, they might be allocated independent legal personalities. But for now, AIMs are not granted generally independent legal personality.[54]

When exercising part or all of its legal rights, a dependent legal person may only do so via the agency of another legal person. Dependent refers to a legal entity that is both reliable and insufficient. Their dependability is predicated on an autonomous legal entity that is deemed to be sui juris and is not subject to any such limitations. This dichotomy fits with Gray's division between administrators of rights and their subjects. Animals, unborn humans, or even the deceased may fall under the first category, but they are unable to administer rights since doing so involves action to accomplish goals. Children, people who are not of sound mind, impersonal legal entities like companies, and even inanimate things like ships and temples are

[54] Sameer chopra and Lawrence F. White, *A Legal Theory for Autonomous Artificial Agents* 159(The University of Michigan Press, United States of America, 4th,2014).

examples of dependent legal persons. Children cannot enter into binding contracts on their own and must sue or be sued via a parent (or *guardian ad litem*) who determines what is in the child's best interest in the lawsuit. The law, on the other hand, recognizes that children progressively acquire their mental powers and, in light of this fact, increasingly widens the range of medical choices that they may make without their guardians' permission.

Adults who lack the capacity for decision-making may also engage in contracts via an agent appointed by a court or under the authority of a durable power of attorney, and they may sue or be sued through a guardian or equivalent appointment. A corporation's ability to participate in legal activities is also dependent on the actions of other legal persons, including members of its governing bodies, workers, and other agents. Similar to living things, inanimate objects like ships and temples rely on the activities of other legal individuals, such as owners, trustees, masters, or others, to act on their behalf and provide them with a legal identity.

Hypothetical forms of legal personhood for animals or trees would also be dependent forms of personhood, requiring a suitable representative to be appointed to exercise the rights to be granted to those legal subjects.

As a result, the range of intellectual and physical abilities present in the class of dependent legal persons ranges from the near-independence of a seventeen-year-old of sound mind to the complete mental incapacity of those who are not officially brain dead but are in a vegetative or comatose state. In terms of dependent legal personality, the corporation—the most prevalent kind of legal person other than humans—can only be acted upon by its agents, such as its board of directors or general meeting; acting on its own would leave it entirely impotent. Therefore, receiving a dependent legal personality is not prohibited by a technological incapacity to do a duty personally.

There is only one requirement for granting such juristic personality which is recognition by law. Most self-learning machines work like an agent. Humans

recognize deities as persons by maa king offerings, in the same manner by recognizing an entity as an agent, there is a likelihood that they are fulfilling their intention through machines. This course of action creates anticipation of personifying an intelligent machine. Thus, in light of the above scholarly and judicial discussion, there is a leeway that AIMs could also be treated as legal persons.

Artificially Intelligent Machines as Legal Persons

The talk over the legal personality of AI machines gained pace when in 2017 a Saudi Arabia-based robot Sophia was granted citizenship because the grant of citizenship few characteristics had to be determined like a place of birth, time of birth, etc. However, it was averred that in the case of robots time of birth could be the time when their switch turns on. The place of birth could be the company where it was made.[55] In 2010 Japan took a household registration for companion robot 'Palo' this determined the pragmatic approach taken by law that they understand the nexus between legal personality and citizenship. In the previous parts, the researcher the as tried to substantiate her contention that 'person' is not limited to 'humans'. As the definition of the term 'person' has evolved, the subjectivity of AI machines to legal personality could be a more pragmatic approach to law. The elimination of the qualification of 'being human' for being a 'person' already favors anticipation of the inclusion of AI machines as a legal person has been accepting the legality of entities by validating them under the ambit of some already existing thing. For example, the acceptance of drone machines under the ambit of the term 'aircraft'. In the same way as acknowledging liability, there has been a quest to recognize an entity as a person.

The world has been in a race to multiply their wealth and divide their labor, for this purpose, there has been immense development in the field of technology. To date, Homo sapiens are one of the most efficient individuals who can think independently. If this autonomous thinking capacity could be developed in machines there would be

[55] https://www.britishcouncil.org/anyone-anywhere/explore/digital-identities/robots-citizens (last visited 29/05/2022)

the birth of a new species i.e. 'Machina sapiens.[56] Thus the most crucial part of being intelligent is to 'think' and if any machine could think it could be suggested as being intelligent. Gabriel Hallevy[57] suggests that there are five components associated with thinking namely: Communication, Internal knowledge, External knowledge, Goal driven conduct, and Creativity.

Communication is an important aspect of intelligent species. Communication could be in oral or written form. Communication makes sure that the thing which is communicated is comprehendible by the other person. The art of communication could be used to test the other individual in understanding complicated ideas, but being intelligent is not limited to mere communication. The important factor of being intelligent is internal knowledge or self-awareness. Self-awareness means knowledge about one's capabilities. An intelligent individual could assess his capabilities and act accordingly. External knowledge is another attribute of intelligence. External knowledge refers to the knowledge about the prevalent ideas in the outside world and acting accordingly. AI machines gain this outside information through data processed into them. Goal-driven conduct is different from random conduct, the former involves the planned execution of a predetermined act but the latter is not based upon any such anticipation. Goal-driven conduct shows the intention to act and knowledge about the result of such conduct. Creativity is one of the most important attributes of being intelligent. It showcases one's desire to do a course of action through other means which involve less input and more output. Thus, Hallevy determined when can a 'Machina sapiens' be considered intelligent to call it 'intelligent machine sapiens' or 'artificially intelligent.

However, it is not always necessary that 'thinking' or 'intelligence' is sine quo for an entity to be recognized as a person. Even rivers are recognized as a legal persons which neither living nor intelligent.[58]

[56] Gabriel Hallevy,*When Robots Kill: Artificial intelligence under criminal law* 25(Northeastern University Press,Boston,5th edn.,2013).
[57] *ibid*
[58] Mohd Salim V. State of Uttarakhand 2017 SCC OnLine Utt 367

David J Calverley mentioned two attributes that determine whether legal personality could be granted to an entity or not. He says that 'intentionality' and 'autonomy' are two features that denote whether an entity is prudent enough to be called a legal person. The term intentionality could be understood in two ways i.e. philosophical intentionality and legal intentionality. He asserts that if these attributes could be found in any entity then it could be construed as a legal person once declared by law as so.[59]

Philosophically the term intentionality means the ability of an individual to feel something or to represent its expression. Intentionality is a way by which mental states are guided to act. This understanding of 'intentionality' could be just in philosophy, yet its acceptability in law is under the shadow. Legally intentionality is not limited to rationale which regulates the behavior of individuals. The intention in the legal domain means the desire in the eyes of the doer to achieve an anticipated outcome and belief about the result of an action before the commission of that particular act. Intentionality requires four coextensively things: there has to be an intention, action accompanied with intention, skill to perform the act, and awareness about the act

If the following things exist then an AI machine could be considered a legal person. Coming to the essential of legal personality according to Calverley the second is 'autonomy'. According to him, an individual is said to be autonomous when he acts according to his will anticipating the consequence of his actions. In the same manner, an intelligent machine is said to be autonomous when it works as an agent on the part of its human principle. There is a predetermined and calculated degree of discretion exercised by AI machines.

The personality of AI machines was talked about in the European Parliament which coined the term 'electronic personhood' upon the personality of AI machines. The Parliament then requested a study on AI by Professor Andrea Bartolini[60] who discussed the meaning of the term 'electronic personhood'. This electronic

[59] David J. Calverley, "Imagining a Non-biological Machine as a Legal Person"22 AI and Society Springer 523-537(2008)
[60] Andrea Bertolini, "Artificial Intelligence and Civil Liability" Pg 38 (Study requested By European Parliament,2020)

personhood was understood in two senses. Firstly, the machines which have adopted such a level of independent intellect that they can act without human intervention, in that sense they are eligible to claim rights and duties. Professor Bertolini has denied this proposition as currently there is no such AI machine that has achieved such a level of autonomy. Secondly, the notion of electronic personhood could be put at par with legal personhood. While considering it the functional approach of granting legal personality to corporations could not be ignored. The corporation is allotted legal personality to work as a representative of a cluster of people for enforcing their interests as a whole. This representation also encompasses liabilities put on the corporation as a whole. For example: if any compensation is imposed on an environmental violation of a company, it is payable by the company as a whole.

CONCLUSION

The rise of artificial intelligence has caught society off guard, posing new difficulties that our current rules are unable to address. Both law and society must alter and adapt as a result of our laws' unpreparedness and the strength and complexity of such technologies relating to it. Such shifts and difficulties raise concerns about artificial intelligence regulation. This thesis aims to explain some of the most basic problems of artificial intelligence, such as whether it should be governed at all, and why. Where technological advancement seems a pretty nice leap in human development but the legal concerns it raises are graves. With a similar ability to think, comprehend and create like humans, AI has the potential to replace humans. This replacement is not only a catalyst for the unemployment rate but also raises important legal concerns related to intellectual property. The concept of ‘person’ has shifted from human interaction to organization, human interaction, and, now to a human, machine interaction. Due to this, the concept of personality has seen a major shift. The attribute of being a human was sine quo for recognition as a person, but now we are in a situation where ‘living’ is no criteria for grant of personality. Currently, few AI machines possess a high level of autonomy, intelligence, and intentionality which gets them qualified for being a legal person. However, we must wait to realize that legal

persons are also eligible for rights that they, or on their behalf someone else can claim. In such a case, this balance between right and duty is more bend towards only duty which again raises a supposition that the legislators wait for a time when there would be the emergence of superintelligence with full autonomy.