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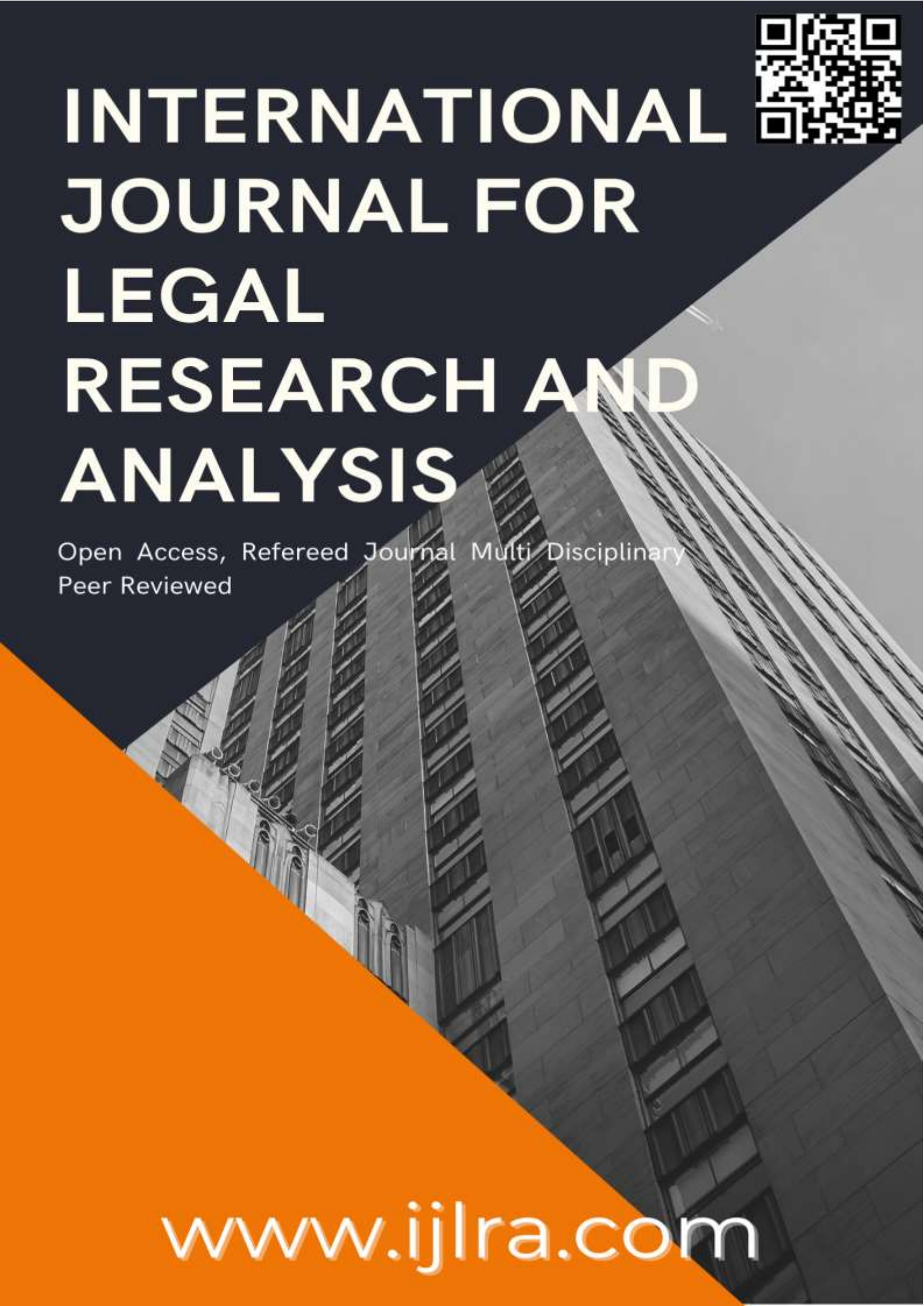

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Avinash Kumar

Avinash Kumar has completed his Ph.D. in International Investment Law from the Dept. of Law & Governance, Central University of South Bihar. His research work is on "International Investment Agreement and State's right to regulate Foreign Investment." He qualified UGC-NET and has been selected for the prestigious ICSSR Doctoral Fellowship.He is an alumnus of the Faculty of Law, University of Delhi. Formerly he has been elected as Students Union President of Law Centre-1, University of Delhi.Moreover, he completed his LL.M. from the University of Delhi (2014-16), dissertation on "Cross-border Merger & Acquisition"; LL.B. from the University of Delhi (2011-14), and B.A. (Hons.) from Maharaja Agrasen College, University of Delhi. He has also obtained P.G. Diploma in IPR from the Indian Society of International Law, New Delhi.He has qualified UGC – NET examination and has been awarded ICSSR – Doctoral Fellowship. He has published six-plus articles and presented 9 plus papers in national and international seminars/conferences. He participated in several workshops on research methodology and teaching and learning.

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STRIKING A HARMONIOUS ACCORD BETWEEN ADVANCEMENT AND SAFEGUARDING: THE INFLUENCE OF AI ON INTELLECTUAL PROPERTY RIGHTS STRUCTURES IN INDIA

AUTHORED BY - MS. KHUSHI KHANDELWAL
4th Year BALLB (HONS) Student
CHRIST (Deemed to be University) Pune, Lavasa Campus.

"Striking a Harmonious Accord between Advancement and Safeguarding: The Influence of AI on Intellectual Property Rights Structures in India"

Abstract

The rapid expansion and widespread adoption of artificial intelligence systems are currently experiencing a significant and noteworthy increase in momentum within our modern, technologically sophisticated society, which is characterized by its relentless pursuit of innovation and advancement. As we witness the seamless integration of these highly sophisticated technologies into various sectors, it becomes increasingly apparent that it is only a matter of time before these intelligent systems begin to autonomously generate extraordinary inventions and creations without the need for any human input or oversight. This prospective reality prompts a series of critical and complex inquiries regarding the realm of Intellectual Property Rights (IPR), as it not only poses substantial challenges to the traditional and established understandings of fundamental concepts such as patents and copyrights but also engenders a host of regulatory dilemmas and questions concerning the ownership and legitimacy of such innovative outputs, among various other pertinent issues. The primary objective of this scholarly paper is to thoroughly elucidate the expanding scope and framework of IPR laws in relation to the burgeoning field of artificial intelligence, whilst simultaneously addressing the myriad and inevitable challenges that this phenomenon presents when examined from a comprehensive global perspective. In addition to this, the paper aspires to proffer insightful recommendations that extend beyond the limitations of conventional IPR frameworks and endeavors to confront the intricate questions regarding criminal liability that arise from content generated by these advanced technologies. Thus, it is essential to engage in a robust discourse on these pressing matters, as they hold significant implications for the future

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of innovation and the protection of intellectual property rights in an era increasingly dominated by artificial intelligence. Ultimately, this examination seeks to foster a deeper understanding of the intersection between IPR and artificial intelligence, paving the way for a more informed and equitable approach to managing the challenges and opportunities that lie ahead in this rapidly evolving landscape.

Key Words

Artificial Intelligence, Copyright Law, Patent Law, Intellectual Property Right & AI System

Introduction

Artificial intelligence (AI) systems are currently experiencing an extraordinary and rapid expansion, characterized by the integration of increasingly advanced and sophisticated forms of software that enhance their capabilities and functionalities. These AI-enabled systems have evolved significantly, moving beyond the mere execution of basic mathematical calculations to engaging in the creation of poetry, visual artwork, and an array of other intricate and complex forms of creative expression that were once thought to be the exclusive domain of human intellect and creativity. This remarkable development prompts a critical examination of whether works produced by these AI systems could be granted any distinct recognition or special status under the existing framework of Intellectual Property (IP) laws, much like the protection afforded to various forms of work that are generated by identifiable human creators, which are generally safeguarded by IP legislation. The exploration of this particular question opens the door to a multitude of other nuanced and intricate issues that warrant thorough consideration, and through the course of this scholarly paper, the authors aspire to illuminate these complexities. [1]The initial section of the paper delineates the fundamental concept of AI, thereby laying a foundation for the subsequent discourse on IP, which predominantly concentrates on the nuances of Copyright Laws in relation to AI. Following this examination, the paper transitions into a more contemplative discussion regarding the ongoing debates surrounding copyright in connection with AI-generated solutions, while also emphasizing the interplay between patent laws and AI systems. Furthermore, the paper culminates in the presentation of insightful recommendations aimed at addressing the various challenges and questions that arise from these pressing issues, thus contributing to the broader discourse on

[1] Ahuja, V. K. Artificial Intelligence and Copyright: Issues and Challenges. ILI Law Review, 2020, Winter Issue, 270-285.

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the implications of AI for intellectual property rights.

AI and IPR

The technological domain of Artificial Intelligence, commonly referred to as AI, was meticulously elucidated by the eminent mathematician and cognitive scientist John McCarthy in the year of 1955, a pivotal moment in the evolution of this field, during which he not only defined the concept but also, notably, coined the now-ubiquitous term "Artificial Intelligence." McCarthy is widely regarded as one of the foundational figures, often referred to as one of the founding fathers, in the realm of AI. In accordance with his authoritative perspective, AI can be articulated as "The Science and engineering of making intelligent machines, especially intelligent computer programs." In essence, AI can be comprehensively summarized as a contemporary and sophisticated computer programming tool, endowed with the remarkable capability to simulate human intelligence and cognitive behavior, thereby possessing immense potential for a multitude of future applications that are likely to significantly influence and enhance the human way of life. Among the various types of AI that are currently prevalent and widely utilized, one can identify several classifications, including but not limited to, reactive AI, theory of mind AI, limited memory AI, and self-awareness AI, among others. The domain of AI is intricately associated with numerous facets of human ingenuity and innovation, encompassing various inventions and novel creations, thus representing a significant advancement in the technological landscape[2]. Francis Gurry, the esteemed Director General of the World Intellectual Property Organization (WIPO), has articulated the viewpoint that the advent of AI will yield substantial technical, financial, and communal consequences, thereby fundamentally transforming the way we construct, distribute, and consume goods and services, as well as influencing the methodologies we employ in our work and overall existence.

To effectively harness the potential applications of AI across diverse fields within the Indian context, it is imperative that we undertake a comprehensive compatibility assessment and thorough examination to ascertain the degree to which the existing interface of Intellectual Property Rights (IPR) and AI exhibits mutual similarities, facilitating the effective application and consumption of AI in the foreseeable future. The following enumerated challenges are those that are currently encountered within this intricate interface:

[2] Hristov K, 'Artificial Intelligence and the Copyright Survey' (SSRN, 11 December 2019) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3490458> accessed 30 October 2024

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I. The pressing issue regarding the eligibility standards for sub-matter related to inventions driven by AI.

II. The contentious issues surrounding the concept of inventor-ship pertaining to inventions that are generated by AI.

III. The complex issues associated with infringements occurring within the AI domain.

IV. The significant issues involved in assigning legal status to stakeholders associated with AI. 1.

a) *The Issue of Sub-Matter Eligibility Standards for AI Lead Inventions*: The contemporary framework governing IPR delineates that the criteria for granting patent rights necessitate that inventions, innovations, and their utility must adhere to three distinct benchmarks. A notable limitation within the existing IPR framework is the exclusion of mathematical methods, algorithms, or computer programs from patentability in India, as well as in numerous other jurisdictions. Consequently, the computer code itself is classified as non-patentable, thereby falling under the copyright act and being categorized as a "literary work." Conversely, a novel machine or a unique combination of hardware and computer codes may indeed qualify for patent protection. Therefore, the determination of patentability is fundamentally contingent upon the presence of novelty and the potential for industrial application. It can be asserted that there exists a considerable degree of overlap between the realms of IPR and AI, with several intersecting dimensions.

b) *Issues Of Inventor-Ship For AI-Generated Inventions*: A critical and significant challenge that arises is the question of attributing 'inventor-ship,' particularly in instances where the resultant work is a product of any AI tool or system. The prevailing legal framework stipulates that patent rights may only be conferred upon individuals who are recognized as legitimate entities by the law. Specifically, it mandates that only a person who can be identified as the inventor of the product is permitted to apply for patent protection. This legal stipulation engenders a pertinent point of contention regarding the definition of what constitutes a 'person.' Given that AI is not a human entity and is therefore incapable of engaging in such legal activities, this issue emerges as one of the most contentious and debatable topics within the field of inventor-ship for inventions generated by AI.

c) *Concerns Regarding Infringements Within the Domain of Artificial Intelligence*: When considering Artificial Intelligence as an inventor, a pertinent

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inquiry arises concerning the party responsible for the actions undertaken by AI on behalf of the end-user. Should accountability rest with the developer or with the AI itself? In instances where a product experiences malfunction, the producer may bear responsibility for any patent infringement committed by the AI that he has developed. The European Parliament Resolution may necessitate the establishment of a mandatory insurance scheme. This resolution opens the possibility of enhancing such an obligatory insurance framework with provisions to ensure that adequate compensation can be provided for reparations, particularly in the absence of current insurance coverage. Furthermore, there is the proposition that AI be held accountable for its acts of patent infringement. Nonetheless, this would require a legal framework that recognizes AI as a legal entity. This notion has already been initiated by the European Parliament Resolution, which designates complex AI systems as "electronic persons."

d) *The Challenge of Conferring Legal Status Upon AI Stakeholders*: Granting a distinct legal status to AI agents and delineating the parameters of this status—specifically in relation to accountability, rights, and potential obligations—provides a minimal degree of assurance regarding the implications of introducing these novel intelligent agents into society. This stands in stark contrast to the substantial volume of unforeseen challenges that must be addressed and regulated, as these are not solely linked to ultimate compensation, but also to the safeguarding of personal data and public security. The prospect of endowing AI with legal personality raises significant jurisprudential dilemmas, with experts on both sides presenting arguments for and against this concept. The recent vision document released by NITI Aayog in 2018 addresses one facet of AI development and its promotion, yet it falls short by not adequately considering the potential legal ramifications and concrete solutions. Should we neglect to assess and concentrate on the fundamental legal implications of the AI-Intellectual Property Rights interface, the future trajectory of AI in India may encounter obstacles within the renewable energy and information technology sectors[3].

[3] Kasap A, 'Copyright and Creative Artificial Intelligence (AI) Systems: A Twenty-First Century Approach to Authorship of Ai-Generated Works in the United States' (SSRN, 5 June 2020) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3597792> accessed 30 October 2024

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A. AI And Copyright

Over the past several decades, copyright law has undergone significant evolution in response to technological advancements. The scope of copyright law has progressively expanded from encompassing literary, musical, and dramatic works to include computer programs as well. Indian copyright law struggles to keep pace with these rapid technological developments. The last few decades have witnessed substantial amendments to the Copyright Act of 1957. Numerous gaps remain that require the attention of lawmakers, one of which pertains to the realm of Artificial Intelligence.

Artificial Intelligence operates based on the foundational principle of deep learning, which allows it to replicate and mimic the behavioral patterns exhibited by human beings in various contexts and scenarios. In the year 2023, we find ourselves in a position that prompts us to pose several critical and thought-provoking inquiries to the domain of Artificial Intelligence, including but not limited to the following: first, does the work produced or associated with Artificial Intelligence warrant the protection afforded by copyright laws? Secondly, if the answer to the aforementioned query is in the affirmative, who precisely should be regarded as the author or rightful owner of such copyright privileges? Thirdly, how is the sharing of intellectual property concerning works related to Artificial Intelligence systematically managed and regulated?

In numerous jurisdictions across the globe, including the nation of India, the legal frameworks stipulate that for any literary, artistic, dramatic, or musical creation to be eligible for copyright protection, it must possess a certain degree of creativity. This requirement is underscored by the principle of "Modicum of Creativity," which was established in the landmark case of EBC Vs D. B. Modak. Furthermore, the traditional doctrine known as the "Sweat of Brow" has proven to be ineffective in securing copyright protection for various works.

Consequently, regarding the initial inquiry, the prevailing interpretation under the Indian Copyright Act suggests that the answer is a definitive no. Moreover, it remains a fact that financial incentives continue to serve as one of the primary motivating factors driving the development and creation of most forms of Intellectual Property. This leads to the pertinent question concerning the roles of corporations and individuals who are pooling their resources and assets towards the advancement of Artificial Intelligence technologies.

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The World Intellectual Property Organization[4] (WIPO) has recognized the existence of three distinct categories of Artificial Intelligence systems, which include, but are not limited to, the following types: firstly, Expert Systems, which are designed to emulate the decision- making capabilities of a human expert; secondly, Perception Systems, which focus on interpreting and responding to sensory data; and thirdly, Natural Language Processing Systems, which facilitate the understanding and generation of human language. It is essential to acknowledge that the Copyright Act delineates a clear distinction between the roles of the author and the owner. The owner is endowed with the entirety of the copyright privileges and, as such, is entitled to all associated economic rights, while the author is primarily attributed with moral rights concerning the work they have created. The TRIPS agreement further elucidates that the owner enjoys an elevated status within the framework of copyright law when compared to the creator of the work.

The question then arises as to who is recognized as the rightful owner in this context. It can be observed that the corporation that holds the technology possesses ownership rights; the end-users who purchase the technology are permitted to set its parameters, while artists utilize Artificial Intelligence to produce new and innovative creations. Notably, the Indian Copyright Act, specifically section 2(d)(vi) of the 1957 legislation, contains a significant provision that states, "in relation to any literary, dramatic, musical or artistic work which is computer-generated, the person who causes the work to be created" shall be considered the author of that work[5].

This indicates that the individual who is most closely and directly involved in the "expression" of the work ultimately becomes the party eligible for copyright protection. Consequently, the individual who has invested the necessary financial resources and has taken on the associated risks to produce a work utilizing Artificial Intelligence is the one who holds the copyright, rather than the end-user, whose contributions to reproduction and distribution are comparatively minimal. Moreover, it is important to note that program developers do not fall under the category of copyright ownership, as they are typically engaged in commissioned tasks to create such Artificial Intelligence systems.

[4] Naqvi Z, 'Artificial Intelligence, Copyright, and Copyright Infringement' (Marquette Law Scholarly Commons) <https://scholarship.law.marquette.edu/iplr/vol24/iss1/4/> accessed 30 October 2024

[5] Palace VM, 'What If Artificial Intelligence Wrote This? Artificial Intelligence and Copyright Law' (UF Law Scholarship Repository) <https://scholarship.law.ufl.edu/flr/vol71/iss1/5/> accessed 30 October 2024

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It is essential to recognize that copyright subsists in the expression of ideas rather than the ideas themselves; specifically, it pertains to the manner in which language is employed for the purpose of expressing those ideas. In instances where copyright infringement occurs, the individual identified as the owner of the copyright is the party that bears the responsibility for addressing the infringement and is consequently accountable for any legal ramifications that may ensue.

B. Case Studies – Ownership Issues

Case studies serve as a crucial source of understanding regarding the legal and ethical dilemmas associated with the ownership of intellectual property generated by artificial intelligence.[6] Below are several recent cases that illuminate these concerns:

- The DABUS case: In the year 2018, an artificial intelligence system known as DABUS (Device for the Autonomous Bootstrapping of Unified Sentience) devised two inventions, specifically a food container and a light beacon, which were subsequently submitted for patent applications in the United Kingdom, the United States, and Europe. The applications faced rejection on the basis that an AI system cannot be recognized as an inventor according to existing patent legislation. The case is presently under appeal and may carry significant repercussions for the ownership and recognition of AI-generated intellectual property.
- The "Edmond de Belamy" artwork: In 2018, a French artistic collective named Obvious employed an AI system to produce a portrait entitled "Edmond de Belamy." The artwork was auctioned for an amount exceeding $400,000, thereby prompting inquiries regarding the ownership and attribution of art generated by artificial intelligence. Although the collective was acknowledged as the creator, the precise role of the AI system in the artwork's creation remains ambiguous.
- The OpenAI GPT-2 language model: In 2019, OpenAI unveiled a language model designated GPT-2, which possessed the capability to generate remarkably realistic text. The introduction of this model raised apprehensions regarding the ownership and attribution of the text produced by the AI system. Ultimately, OpenAI resolved not to release the complete version of the model, citing concerns related to the potential misuse of the technology.

[6] Purvi Pokhariyal AKK and ABP, 'Artificial Intelligence: Law and Policy Implications' (EBC Webstore) <https://www.ebcwebstore.com/product/artificial-intelligence-law-and-policy-implications-by-purvi-pokhariyal-amit-k-kashyap-and-arun-b-prasad?products_id=99097334> accessed 30 October 2024

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These case studies underscore the legal and ethical dilemmas surrounding the ownership and attribution of intellectual property generated by artificial intelligence. As the utilization of AI in the creation of intellectual property escalates, it is imperative to address these challenges to ensure that the advantages of AI are harnessed while simultaneously safeguarding the rights of intellectual property proprietors and fostering innovation and creativity[7].

C. Patentability Of AI Inventions

The swift advancement and extensive integration of artificial intelligence (AI) technology are revolutionizing numerous industries and generating novel avenues for innovation. Nevertheless, the question of whether inventions produced by AI can be patented represents a complex and evolving facet of intellectual property law.

On one hand, the provision of patent protection can incentivize investment in AI research and development by conferring legal rights to exclude others from utilizing or commercializing the invention. Conversely, there exist apprehensions that permitting patents for AI-generated inventions could lead to the obsolescence of human inventors, restrict access to vital technologies, and engender novel forms of inequality.

D. Legal And Ethical Issues in AI-Generated Inventions

The escalating application of AI in the creation of new inventions has given rise to a multitude of legal and ethical challenges concerning the ownership and patentability of AI-generated inventions. In this section, we shall explore some of these issues in greater depth[8].

- *Ownership of AI-generated inventions*: A principal concern associated with AI-generated inventions pertains to ownership rights. In certain scenarios, the architect of the AI system responsible for generating the invention may contend that they ought to possess the rights to the resultant invention. Conversely, in other instances, it may be asserted that the proprietor of the data utilized to train the AI system should hold ownership of the invention. This matter is further complicated by the reality that, in

[7] Yanisky-Ravid S, 'Generating Rembrandt: Artificial Intelligence, Copyright, and Accountability in the 3A Era-the Human-like Authors Are Already Here- a New Model' (FLASH: The Fordham Law Archive of Scholarship and History) <https://ir.lawnet.fordham.edu/faculty_scholarship/956/> accessed 30 October 2024

[8] ((PDF) the role of Automated Technology in the creation of copyright works: The Challenges of Artificial Intelligence) <https://www.researchgate.net/publication/313898379_The_role_of_automated_technology_in_the_creation_of_copyright_works_the_challenges_of_artificial_intelligence> accessed 30 October 2024

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some instances, the AI system may produce an invention that transcends the comprehension or replication capabilities of any human being. Consequently, in such instances, it may prove challenging to ascertain who ought to be regarded as the inventor.

- *Patentability of AI-generated inventions*: Another significant issue concerning AI-generated inventions is the inquiry into their patentability. Patent regulations across various nations differ in their approach to AI-generated inventions. Certain nations, including the United States, permit the patenting of AI-generated inventions provided they fulfill the requisite criteria for patentability, such as being novel and non-obvious. Conversely, in other nations, such as Australia and New Zealand, current legislation mandates that an invention must be the product of human ingenuity in order to qualify for patent protection.
- *Ethical Considerations*: In conjunction with these legal dilemmas, there exists a spectrum of ethical considerations pertinent to the ownership and patentability of AI-generated inventions. A primary apprehension is the potential ramifications on employment, as AI-generated inventions may displace human inventors, resulting in job losses. Moreover, there are apprehensions regarding the societal impact of AI-generated inventions, including the potential for bias or the emergence of new technologies that could be exploited for detrimental purposes.

The legal and ethical challenges associated with AI-generated inventions are intricate and multifaceted. As AI technology perpetually evolves, it will be imperative to cultivate legal and policy frameworks capable of addressing these challenges in a manner that fosters innovation and creativity while simultaneously safeguarding the rights of inventors and ensuring equitable distribution of the benefits of AI throughout society[9].

E. Case Studies – Patentability Of AI Generated Inventions

To gain a deeper understanding of the complexities surrounding the patentability of AI-generated inventions, let us scrutinize several case studies of recent patent disputes involving AI[10].

[9] 'Moiz Bukhari, S. A., "Exploring the World of Artificial Intelligence" (Futurism, 1 January 2023) Accessed 1 May 2023.'

[10] 'View of Artificial Intelligence: A Creative Player in the Game of Copyright: European Journal of Law and Technology' (View of Artificial Intelligence: A Creative Player in the Game of Copyright | European Journal of Law and Technology) <https://ejlt.org/index.php/ejlt/article/view/662/886> accessed 30 October 2024

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- DABUS (Device for the Autonomous Bootstrapping of Unified Sentience): DABUS represents an AI system developed by Dr. Stephen Thaler, endowed with the capability of generating novel inventions. In 2019, Dr. Thaler submitted patent applications in the United States, Europe, and various other nations for two inventions conceived by DABUS: a beverage container and a flashing light. The patent applications faced rejection on the basis that an AI system cannot be designated as an inventor on a patent application, as the inventor must be a human entity. Dr. Thaler has contested this ruling, asserting that DABUS is the genuine inventor of the inventions and merits recognition as such.
- Qualcomm v. Apple: In the year 2017, Qualcomm initiated legal proceedings against Apple, asserting that Apple had violated multiple patents pertaining to smartphone technology. One of the patents at issue concerned an AI-driven power management system designed to enhance the battery longevity of smartphones. Apple contended that the patent was rendered invalid due to its foundation on an AI-generated algorithm, thus asserting that it lacked human inventiveness. Nevertheless, the court ultimately rendered a decision in favor of Qualcomm, determining that the patent was valid and had indeed been infringed upon by Apple. This case exemplifies the complexities involved in assessing the inventiveness of inventions generated by artificial intelligence, as well as the potential ramifications for patent disputes that encompass AI technology.
- Image Processing Technologies LLC v. Samsung Electronics Co.: In the year 2016, Image Processing Technologies LLC filed a lawsuit against Samsung Electronics Co. for allegedly infringing upon a patent related to image processing technology. Samsung defended itself by arguing that the patent was invalid on the grounds that it was predicated on an AI-generated algorithm, thereby lacking human inventiveness. The court ultimately ruled in favor of Image Processing Technologies LLC, concluding that the patent was indeed valid and had been infringed by Samsung. This case underscores the critical importance of safeguarding AI-generated inventions through intellectual property rights, irrespective of the absence of direct human involvement[11].

[11] 'EU Internet Law in the Digital Single Market' (SpringerLink) <https://link.springer.com/book/10.1007/978-3- 030-69583-5> accessed 30 October 2024

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F. Case Studies – AI And IP

I. *Alibaba's IP Protection System*: In the year 2018, Alibaba, the esteemed Chinese e-commerce conglomerate, unveiled its AI-enhanced Intellectual Property protection system referred to as the "Alibaba Intellectual Property Protection Platform." This system employs machine learning algorithms to scrutinize vast quantities of data in order to detect and eliminate counterfeit merchandise from its platforms. Reports indicate that this system has enabled Alibaba to decrease the prevalence of counterfeit products on its platform by 30% while simultaneously augmenting the efficiency of IP protection requests by 50%.

II. *IBM's Patent Analysis Tool*: IBM has conceived an AI-driven patent analysis tool known as "Watson for IP," which assists enterprises in analyzing patent data and identifying potential infringements of intellectual property rights. This tool utilizes natural language processing and machine learning algorithms to examine patent documents, scientific literature, and various other informational sources to detect possible infringements of IP rights.

III. *Qualcomm's Patent Infringement Detection System*: Qualcomm, a prominent technology enterprise, has developed an AI-powered patent infringement detection system capable of analyzing substantial volumes of data to identify potential infringements of its patents. This system employs machine learning algorithms to evaluate patent documents, legal filings, and other informational sources to pinpoint potential infringement cases. It has been reported that this system has significantly enhanced Qualcomm's efficiency and precision in its intellectual property enforcement endeavors.

These case studies exemplify the prospective advantages of employing artificial intelligence in the enforcement of intellectual property, including enhanced efficiency, accuracy, and rapidity in the identification and prevention of IP infringements. However, they concurrently emphasize the necessity for meticulous consideration of the legal and ethical ramifications associated with the application of AI in this domain.

G. Impact Of AI On Traditional IP Practices and Jurisprudence

The advent of artificial intelligence has profoundly influenced a multitude of domains, including intellectual property. Artificial intelligence has fundamentally transformed the

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methodologies by which intellectual property assets are conceived, administered, and enforced, resulting in novel opportunities and challenges. This segment of the research document intends to scrutinize the ramifications of artificial intelligence on conventional intellectual property practices and jurisprudence. The conventional practices and jurisprudence of intellectual property have been molded by human interpretation and the application of statutory laws and regulations. However, with the escalating utilization of artificial intelligence in the realm of intellectual property, there exists a necessity to reassess these traditional practices and jurisprudence in order to ascertain their continued relevance and efficacy. This section will elaborate on the implications of artificial intelligence on diverse facets of intellectual property, encompassing patent, copyright, and trademark law, as well as its influence on the interpretation and application of such laws.

Artificial intelligence has altered traditional intellectual property practices in myriad ways. For example, AI-driven tools and software have facilitated the creation and management of intellectual property assets, including patents, trademarks, and copyrights. These technological advancements can execute functions such as prior art searches, patent drafting, and trademark monitoring with greater efficiency and precision than their human counterparts. Consequently, the time and financial resources expended in the creation and management of intellectual property assets have diminished considerably[12].

Furthermore, artificial intelligence has also affected the interpretation and application of intellectual property laws. Given the increasing reliance on artificial intelligence in the creation and management of intellectual property assets, there is a pressing need to reassess how intellectual property laws are construed and enforced. For instance, the question of the patentability of inventions generated by artificial intelligence has elicited numerous legal and ethical inquiries that conventional intellectual property laws may not adequately address. Likewise, the employment of AI-generated content has challenged the boundaries of copyright protection as well as the rights of both creators and users of such content. The influence of artificial intelligence on traditional intellectual property practices is extensive and far-reaching. As artificial intelligence continues to progress, it is anticipated to reshape the methodologies by which intellectual property assets are created, managed, and enforced, necessitating a

[12] ((PDF) impact of artificial intelligence on intellectual property rights: Challenges and opportunities) <https://www.researchgate.net/publication/376751087_Impact_of_Artificial_Intelligence_on_Intellectual_Property_Rights_Challenges_and_Opportunities> accessed 30 October 2024

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reassessment of traditional practices and jurisprudence in the field of intellectual property.

H. Case Studies – AI And Impact On IP

a. *Utilization Of Artificial Intelligence in Patent Drafting and Prosecution*: The legal firm, Baker Hostetler, adopted an AI-driven tool known as ROSS Intelligence to aid lawyers in patent drafting and prosecution. The tool employs natural language processing to evaluate patent applications, furnish insights, and propose potential amendments. The implementation of this tool enabled the firm to considerably reduce the time and costs associated with patent drafting and prosecution, while also enhancing the quality of the patents produced.

b. *Consequences Of Artificial Intelligence on Copyright Law*: The application of artificial intelligence in the creation and generation of content has called into question the extent of copyright protection and the rights of creators and users of such content. For example, in the case of Naruto v. Slater, an animal rights organization initiated legal action against a photographer concerning a selfie captured by a monkey utilizing the photographer's camera. The organization contended that the monkey held the copyright for the image, while the photographer asserted his ownership of the copyright on the basis that he possessed the camera.

I. Comparative Analysis

An integral component of comprehending the policy and legal frameworks pertaining to Artificial Intelligence (AI) and Intellectual Property (IP) lies in the juxtaposition of the methodologies adopted by various jurisdictions. A comparative analysis can yield valuable insights into the merits and demerits of diverse methodologies and assist in discerning areas necessitating enhancement. For instance, the European Union (EU) has embraced a proactive stance concerning the regulation of AI and IP, exemplified by the European Commission's dissemination of a White Paper on AI in the year 2020. This document articulates a framework aimed at fostering an ecosystem of trust in AI, which encompasses a proposal for a regulatory framework to oversee the development and application of AI.

Conversely, the United States has adopted a more laissez-faire approach, emphasizing the stimulation of innovation and the alleviation of obstacles to the development and utilization of AI. The U.S. Patent and Trademark Office (USPTO) has promulgated guidelines for the

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examination of AI-related patent applications; however, there exist no explicit regulations governing the employment of AI within the context of IP. Other jurisdictions have likewise adopted varying approaches. For example, China has issued guidelines regarding the advancement of AI, which incorporate stipulations concerning IP protection, while Japan has constituted a task force to investigate the legal and policy matters associated with AI and IP. A comparative analysis of policy and legal frameworks can facilitate the identification of best practices and areas for enhancement in addressing the challenges and opportunities presented by AI and IP.

I. Status Of Artificial Intelligence Under the Current Legal Framework In India

Indian judicial authorities have yet to explicitly determine the legal status of Artificial Intelligence. However, a definitive adjudication has been made regarding the necessity to resolve the ambiguities and discussions surrounding the legal applicability of AI operations. The advancement and evolution of AI systems play a significant role in enhancing India's technological landscape[13]. As the recognition of AI has been acknowledged as pivotal for the nation's overall development, the Ministry of Commerce, Government of India has established a task force to investigate the potential for implementing AI to promote comprehensive growth across various sectors. Initiated in 2017, this task force comprises 18 members, including scientists, industry experts, industrialists, governmental representatives, academicians, and personnel from other governmental departments, and is designated as the "Task Force on AI for India's Economic Transformation," chaired by Professor V. Kamakoti (IIT Madras) and Hon'ble Justice B. N. Srikrishna.

The salient points and recommendations are as follows: Salient Points: 1. Ten specific sectors have been delineated based on the applications of AI algorithms, including health, manufacturing, finance, agriculture, education, environment, public utility services, technology for individuals with disabilities, national security, and customer relationship management. 2. The task force has identified several specific challenges encountered while implementing AI algorithms on a large scale in the following areas:

[13] 'Communication Artificial Intelligence for Europe' (Shaping Europe's digital future) <https://digital-strategy.ec.europa.eu/en/library/communication-artificial-intelligence-europe> accessed 30 October 2024

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- How can massive data sets and AI-driven analyses be adequately protected?
- How can data security, privacy, and ethical standards be upheld through appropriate technological and regulatory frameworks?
- How does the application of AI across different sectors influence employment dynamics and potential job losses?
- How might the digitization facilitated by AI within the Internet of Things (IoT) framework be susceptible to cyber threats?

K. **Recommendations**

i. To establish an "Inter-Ministerial National Artificial Intelligence Mission" to initiate actions over a five-year period, requiring funding of approximately 1200 crores in Indian Rupees. This initiative will function as a Nodal Agency (NA) to oversee and coordinate all technical activities related to AI utilization in India.

ii. To gather all academicians and manufacturing stakeholders to consolidate AI-related research efforts and provide adequate support to enhance AI studies at the National Level, thereby increasing awareness and the societal utility of AI.

iii. To foster collaboration among various ministries to facilitate the growing integration of AI systems within India.

iv. To establish centers of excellence aimed at advancing research capabilities, creating standardized evaluation processes for AI performance, and financing the development of an independent AI system to furnish relevant information to the public, thereby enhancing their understanding.

v. In order to ensure the safeguarding of data protection policies and to provide appropriate recommendations for data equality, the task force has sanctioned the following measures:
   - To establish a digital data repository for the acquisition of cross-industry intelligence.
   - To create a data ombudsman under the auspices of the Ministry of Commerce and Industry for addressing matters related to data in the context of artificial intelligence.
   - The Bureau of Indian Standards (BIS) is to solicit proposals for the implementation of norms and standards that are globally deliberated within the realm of AI systems.
   - Two policies are to be formulated:

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a. A policy addressing information management.

b. Tax incentives pertaining to profits generated from the deployment of AI technologies.

vi. To devise a strategy aimed at augmenting the workforce sufficiently to accommodate the increasing demand for the management of AI algorithms. 5. Inter-departmental coordination is to be established to facilitate India's participation in the International Discussion Forum on AI Applications. AI and Data Protection in India: The growing involvement of AI applications, such as data analytics, IoT (Internet of Things) domains, healthcare, employment, and transportation sectors, will enable AI to gain seamless access to Personally Identifiable Information. This will assist industrial entities in formulating a framework regarding the preferences of potential clients. The utilization of AI for data analysis across various objectives proves beneficial for individuals. However, such unobstructed access to personal data by AI raises significant concerns regarding privacy issues.

Therefore, a comprehensive framework and effective policy must be established to address privacy vulnerabilities associated with the utilization and applications of AI. This issue has gained prominence in light of recent judgments by the Supreme Court of India, which has affirmed that privacy constitutes a fundamental constitutional right. In that groundbreaking ruling, the Supreme Court also highlighted the necessity of providing a technology-agnostic framework capable of encompassing critical privacy-related issues pertinent to the deployment of AI in India. The current Data Protection legislation and policy are inadequate to provide effective safeguards for the privacy of personal data. Consequently, the Supreme Court, in its verdict, has underscored the necessity for the formulation of more extensive legal mechanisms for data protection.

L. Application Of AI And Its Liability

Liability constitutes a crucial aspect in attributing legal personhood to AI. The routine operation of AI cannot be deemed accountable for inflicting any harm in its own capacity, as AI scarcely qualifies to possess legal personhood. Generally, robots cannot be subjected to legal action for causing injury or harm. Nonetheless, the emergence of AI has prompted stakeholders to reconsider this conventional notion that machines cannot possess legal personality. In this context, the notion of liability encompasses inquiries regarding the nature of the legal relationship between AI and its actual developer. Jurisprudence dictates that unlawful actions

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resulting in damages must be compensated through liabilities. Such liabilities are categorized into two types: 1. Civil Liabilities and 2. Criminal Liabilities.

- *Civil Liabilities*: Damage is regarded as one of the principal components of civil liability. The occurrence of damage must be substantiated initially to obtain redress. Artificial Intelligence (AI) exhibits superintelligence and should possess awareness regarding its actions. It is presumed that AI possesses rights and obligations that are typically attributed to both human legal entities as well as artificial entities, such as the right to seek compensation. The question arises as to whether AI can be ascribed personhood.[14] The response is negative; however, it is certain that jurisprudence will ultimately evolve to provide a satisfactory resolution. In the event of an incident involving self-driving vehicles operated by AI, there exists ongoing debate within legal circles regarding whether civil liabilities should be imposed upon AI or its developers for the injuries incurred[15].
- *Criminal Liabilities*: Artificial Intelligence poses potential hazards to human life. Scholarly articles, including Stephen Hawking's research conducted in 2015, emphasize that catastrophic events could occur as a result of AI warfare. AI has the potential to inflict harm, necessitating examination of how such scenarios can be mitigated through legal frameworks or ethical considerations. The challenge lies in the fact that AI entities are not recognized as subjects under the law. The perpetration of a crime is deemed to have been executed by the corporation. Hallevy has delineated three criteria for subjecting AI to Criminal Liabilities[16].
    1. AI has not been granted human-like attribution. AI is not regarded as possessing a criminal mindset. It has been observed that the actual perpetrator is either the end consumer or the programmer responsible for the AI software's operation.
    2. The end consumer or the developer of the AI algorithms bears criminal liability despite lacking a criminal intent. This liability is attributed to them based on their negligent mindset.

[14] ((PDF) impact of artificial intelligence on intellectual property rights: Challenges and opportunities) <https://www.researchgate.net/publication/376751087_Impact_of_Artificial_Intelligence_on_Intellectual_Property_Rights_Challenges_and_Opportunities> accessed 30 October 2024

[15] (Artificial Intelligence and intellectual property law) <https://core.ac.uk/download/pdf/236436865.pdf> accessed 30 October 2024

[16] 'Ai and Intellectual Property Rights: Navigating the Digital Frontier' (AI and Intellectual Property Rights: Navigating the Digital Frontier | IPLINK ASIA) <https://www.iplink-asia.com/article-detail.php?id=1105> accessed 30 October 2024

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3. The conceptualization of AI has fundamentally altered the acceptance of criminal liability. This model of AI may be held criminally accountable alongside the end consumer or the programmer. Liability is evaluated within the specific context of the circumstances.

Conclusion

Individuals and entities are increasingly reliant on Artificial Intelligence. This reliance on AI by individuals or entities is expected to grow rapidly over time. This trend is evidenced by the anticipated contribution of AI, projected to enhance economic growth by approximately 1.7% across various industries by the year 2035. The regulations effectively mandate that end-users or programmers of AI algorithms adhere strictly to ethical standards during the programming of AI systems. In India, due to the absence of robust legal frameworks to reconcile privacy concerns with the essential utilization of AI technology, it is nearly foreseeable that, in the near future, appropriate, inclusive, and enforceable legislation, rules, and policies will be established. This will ensure that during the increased adoption of AI applications, technological advancement reaches its utmost potential without compromising data privacy safeguards[17].

[17] SpicyIP, About The Author SpicyIP and Kaushal T, 'Artificial Intelligence and IP: A Literature Review' (SpicyIP, 22 July 2023) https://spicyip.com/2023/07/artificial-intelligence-and-ip-a-literature-review.html accessed 30 October 2024