International Journal of Law, Policy and Social Review
www.lawjournals.net
Online ISSN: 2664-6838, Print ISSN: 2664-682X
Received: 20-07-2024, Accepted: 19-08-2024, Published: 03-09-2024
Volume 6, Issue 3, 2024, Page No. 321-330

An insight on intersection of artificial intelligence & copyright laws: Navigating through implications, challenges & future

Arryan Mohanty*, Mitra Mehta
[1] Department of Law, Symbiosis Law School, Nagpur, Maharashtra, India
[2] Department of Law, Marwadi University, Rajkot, Gujarat, India

Abstract
The emergence of a novel epoch in artificial intelligence ("AI") artistry is now evident. It is unequivocal that AI technology has advanced considerably in recent years, accompanied by its increasing incorporation into diverse domains, notably the artistic sphere and graphic design. Most significantly, there have been occurrences in which AI-generated visuals have secured prestigious accolades in art contests, inciting discourse regarding the equity afforded to artists who depend on their innate creativity. The growing prevalence of AI across multiple sectors can be attributed to its efficacy as a time-efficient instrument. Tasks that previously required two to three days can now be executed in seconds, attributable to technologies that analyze extensive datasets to produce new content. Nonetheless, to illustrate one instance, apprehensions have surfaced among artists concerning the provenance of data utilized for AI-generated creations, as these outputs frequently lack entirely original foundations. While such methodologies may not overtly infringe upon copyright statutes, ethical dilemmas persist regarding data procurement without copyright proprietors' consent.
The relationship between AI and intellectual property legislation is becoming increasingly intricate and consequential. This article investigates the challenges and prospects introduced by AI within the domain of intellectual property, emphasizing the legal considerations pertinent to copyright, patents, and trade secrets. It underscores the imperative for adaptive legal frameworks to embrace the distinctive characteristics of AI-generated works while maintaining a balance between innovation and protection. The paper further explores the ethical dimensions and potential ramifications of AI in intellectual property, providing insights into how legal systems globally are evolving in response to these technological innovations. This thorough examination provides a more lucid comprehension of the prevailing legal landscape and prospective trajectories in this dynamic domain.

Keywords: Artificial intelligence, copyright laws, implications

Introduction
We are currently situated in an epoch characterized by a technology-driven paradigm. Within this technology-centric framework, artificial intelligence assumes a crucial function. In contemporary society, AI transcends the mere classification of a tool or software application that relies on human directives and involvement. It has transformed to execute independent and innovative decisions without human interference. This progressive and transformative iteration of AI is presently employed across many domains. Innovators have commenced using AI to create and generate exceptional and distinctive outputs in the entertainment sector, encompassing film, music, visual arts, journalism, and interactive gaming. By harnessing this advanced iteration of AI technology, creators have begun to capitalize on its potential. [1]
Artificial intelligence (AI) represents a domain within computer science dedicated to the exploration and advancement of intelligent machines. These machines possess the capability to think, learn, and resolve challenges in a manner analogous to that of humans. AI's objectives encompass enhancing computer-based learning, reasoning, and perceptual abilities. AI systems are proficient in processing information, discerning patterns, and autonomously rendering decisions. The evolution of data science and computational technologies has facilitated the decision-making process. AI finds application across diverse sectors, ranging from finance to healthcare. Deep learning constitutes a technique within AI that instructs computers to interpret data in a manner inspired by human cognitive processes. AI technology exhibits extensive applicability across a variety of domains, including voice recognition, robotic surgery, image analysis, self-driving vehicles, and natural language processing. It is fundamentally transforming industries such as commerce, finance, conversational agents, robotics, cybersecurity, manufacturing, healthcare, education, transportation, agriculture, and public administration. [2]
The bedrock of contemporary innovation, AI permeates every sector, from healthcare to financial services. AI technology has introduced a novel layer of complexity to Intellectual Property (IP) regulations. The intricate relationship between artificial intelligence and intellectual property engenders many thought-provoking and challenging inquiries concerning legal frameworks and regulatory measures. Certain jurisdictions, mainly Europe, have proactively confronted these implications, as the scope encompasses many technologies, including robotics, computer vision, machine learning, and natural language processing. These technological advancements have enabled machines to comprehend language, identify patterns, and execute decisions—capabilities traditionally associated with human cognition. Many sectors will experience the ramifications of AI's diverse applications, encompassing healthcare, financial services, manufacturing, entertainment, and beyond. Artificial intelligence (AI) is instigating a paradigm shift across various domains, from medical diagnostics and economic forecasting to creative fields such

as music and artistic production, all while concurrently dismantling long-established norms and conventions. [3]

Does the Copyright Act extend protection to artificial intelligence (AI)- generated creations? Any artistic or literary work, including but not limited to music, visual art, films, and similar media, produced by an individual is safeguarded by the provisions of the Copyright Act. However, it is crucial to note that the protection against infringement is exclusively accorded to human creators. The Act remains silent concerning protections against infringement perpetrated by artificial intelligence, robotic entities, or any creations that emerge without human involvement. In light of this context, the pertinent question is whether the Copyright Act protects works produced by AI. If affirmative, the question of authorship regarding AI-generated works arises, alongside the potential challenges that may emerge from this scenario.

In the contemporary industrial and commercial landscape, unequivocal ownership of Intellectual Property (IP) is essential for any individual or organization, as it frequently dictates the developmental trajectory of a business. Consequently, the ownership of such IP is of paramount significance. The most significant point of contention in discussions regarding ownership is whether such ownership can be conferred upon a non-human entity, such as software, algorithms, and similar constructs, that have facilitated product creation. Current IP legislation in India lacks explicit provisions that acknowledge, let alone confer ownership upon, software and algorithms utilized in creating IP eligible for statutory protection. An exception to this can be observed, albeit in a limited capacity, within the Copyright Act 1957, which designates the individual responsible for creating a computer-generated work as the author of that work. Nevertheless, the software or AI system itself cannot be attributed authorship for the work it generates. [4]

The global viewpoint on artificial intelligence (AI) and copyright legislation signifies a concerted endeavor to tackle the worldwide ramifications of nascent technologies. Diverse legal jurisdictions contend with analogous challenges, resulting in dialogues, collaborations, and initiatives aimed at synchronizing methodologies. Principal components of the international viewpoint encompass the active participation of the World Intellectual Property Organization (WIPO) in global deliberations concerning AI and copyright issues. [5] The Standing Committee on Copyright and Related Rights (SCCR) of WIPO scrutinizes policy matters pertinent to AI-generated creations, endeavoring to formulate international standards. Moreover, the Berne Convention, a global treaty on copyright, delineates foundational benchmarks for copyright safeguarding. The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) [6] establishes universal criteria under the auspices of the World Trade Organization (WTO). Nations adapt their AI and copyright regulations to align with these international accords.

Nations engage in collaborative efforts to formulate unified standards and principles regarding the ramifications of AI on copyright. A collective comprehension of terminology, concepts, and legal structures facilitates the establishment of a cohesive international framework. Jurisdictions perform comparative evaluations of their AI and copyright statutes, probing the advantages and shortcomings of varied methodologies. This promotes the exchange of exemplary practices and enriches legal evolutions on a global scale. The inherently international character of digital content dissemination necessitates the implementation of mechanisms for cross-border licensing and royalty distribution. Organizations for collective management and licensing arrangements strive to optimize the process, guaranteeing equitable remuneration for creators.

Additionally, industry stakeholders, encompassing technology enterprises, content producers, and legal practitioners, participate in global discourses to address challenges and propose viable solutions. These interactions are crucial in shaping international understandings of AI and copyright. Nations negotiate trade agreements that incorporate stipulations concerning intellectual property, thereby influencing the evolution of AI and copyright legislation. Bilateral collaborations facilitate the transfer of information and exemplary practices. Even with these cooperative endeavors, variations in legal traditions, cultural viewpoints, and the rate of technological assimilation contribute to heterogeneous approaches. Realizing a genuinely harmonized international framework remains a multifaceted challenge. The persistent discourse at the global level underscores the dedication to adapting copyright legislation to AI's exigencies while striving to balance innovation and protection.

The confluence of Artificial Intelligence (AI) and Copyright Laws has emerged as a dynamic and complex domain, engaging the interests of scholars, legal experts, and technologists alike. This introduction delves into the transformative effects of AI on the established frameworks of copyright, elucidating the challenges and prospects that emerge within this swiftly changing environment. As AI technologies progress, generating original content by intelligent systems raises fundamental inquiries regarding authorship and proprietorship. This paper embarks on a scholarly examination of the historical foundations of copyright laws, emphasizing the necessity for modern adaptation to embrace the paradigm shift instigated by AI. The interaction between AI and copyright reveals various nuances in analyzing the present scenario. The escalating role of AI in content creation demands a sophisticated comprehension of essential concepts and the associated legal consequences. From disputes over ownership to the intricate legal ramifications of AI-generated content, this inquiry aims to disentangle the multifaceted interplay between artificial intelligence and copyright legislation. This analysis transcends theoretical considerations, probing into the practical ramifications of AI on the enforcement of copyright. Detection mechanisms and emerging technologies concerning protection represent critical elements that warrant scrutiny within the context of this evolving symbiotic relationship. This introduction lays the groundwork for thoroughly examining the diverse dimensions that characterize the complex intersection of AI and copyright laws. [7]

The Patent Act 1970 and the Design Act 2000 do not include any provisions that recognize a programmer or developer as an inventor or owner of any innovations resulting from the operation of software, AI, or algorithms. The situation is further complicated when the creation or innovation is solely attributable to the actions of software, AI, or algorithms, devoid of any human intervention. Given the proliferation of innovation and technological advancement, the swiftly transforming industry perspective

advocates for formal IP recognition to be extended to such developers, if not to the software itself, through explicit legal provisions, thereby fostering a vibrant and sustainable innovator ecosystem. [8] While innovators and legislators globally are increasingly recognizing the deficiencies within existing legal frameworks that fail to incorporate and acknowledge non-human contributions, the endeavor to assess the ability of software to replicate human behavior in specific contexts and its potential to offer significant contributions is not a novel pursuit.

Ethical considerations surface as pivotal as the legal profession engages with these intricate challenges. It is crucial to guarantee that artificial intelligence technologies are congruent with societal values and norms to facilitate responsible incorporation across diverse sectors. Tackling biases in AI algorithms, ensuring equity and accountability in decision-making procedures, and fostering transparency constitute fundamental elements of this ethical framework. The elucidation of AI-derived outcomes becomes particularly pertinent within judicial contexts where due process mandates a comprehensive comprehension of the decision-making mechanism. The progression of legal frameworks must consider the ethical ramifications of AI applications, striving to achieve a nuanced equilibrium between technological advancement and the maintenance of moral principles. The convergence of artificial intelligence and intellectual property law creates a complex legal terrain requiring meticulous consideration and modification. As technological innovations continue to unfold, legal frameworks must adapt to confront the unprecedented challenges introduced by AI. The sustained discourse among legal scholars, policymakers, and industry stakeholders is vital for developing a regulatory framework that promotes AI innovation while protecting the rights and interests of creators and the broader society. Achieving this equilibrium will be crucial in navigating the legal boundaries of the artificial intelligence epoch. [9]

Legal definition of artificial intelligence

Providing a comprehensive, precise, and unequivocal definition of the subject matter is an essential preliminary step in formulating policies or regulations. This clarification is necessary to delineate the scope of application of such rules or policies. This definition's paramount and fundamental inquiry is whether a regulation applies in a particular context. The initial and most significant action in categorizing any subject under relevant laws and regulations entails its precise articulation. Notably, terms commonly utilized in everyday language may acquire entirely different significances within legal frameworks. For instance, Insanity, Medical Insanity, and Legal Insanity are fundamentally distinct. Medical insanity may not align with legal insanity, and conversely. The challenges associated with defining artificial intelligence are significantly compounded by the absence of a singular, universally accepted definition among computer scientists. Compared to other disciplines, the disparity in legal definitions of AI is exacerbated by the intricacies of liabilities and other associated legal challenges. Working definitions, which constitute the majority of accepted definitions of AI, need to be revised to serve a legal system. A more precise and concrete characterization is necessitated from the perspectives of policy and legal frameworks.

The terms “artificial intelligence” and “intelligence” are intertwined. The former can be briefly defined as “that which does not occur in nature or exists in a form divergent from its original natural state.” Conversely, the definition of intelligence is multifaceted. What constitutes intelligence? “Human intelligence” represents the apex of cognitive ability recognized by humanity, or what is currently considered intelligent. [10] To explore the convergence of digital technology and rationality and evaluate the capacity of software to replicate human cognitive processes, Alan Turing, a distinguished mathematician, instituted the Turing test. The Turing Test assesses a machine’s proficiency in displaying intelligent behavior indistinguishable from a human’s. During this evaluation, a human adjudicator engages in natural language dialogues with a machine and a human participant without possessing knowledge of their identities. Should the adjudicator be unable to consistently differentiate between the machine and the human based on their respective responses, the machine is deemed to have successfully passed the Turing Test, thereby illustrating a degree of artificial intelligence that emulates human-like discourse and reasoning. The test's focal point is the machine's observable behavior rather than its internal mechanisms, thereby underscoring the capacity to replicate human-like responses. Technological advancements and the rise of contemporary generative AI have addressed whether this form of reasoning equates to human cognition. We currently exist in a period where software transcends its function as mere instruments, transforming into entities capable of thought and creativity, producing outputs comparable to those generated by human beings. [11]

In philosophy, personality pertains to an individual's intellectual framework. It denotes a unit that possesses rights and responsibilities within the legal context. It is crucial to differentiate personality from humanity. While only naturally occurring beings are classified as human, personality can also encompass inanimate entities in a specialized context. Consequently, personality exists beyond the confines of humanity. Humanity and personality may either coexist or diverge at various points in time. Likewise, legal constructs lack human characteristics, such as corporations or deities. The notion of legal personality consequently presents two pivotal issues within the legal sphere. The initial question pertains to the criteria for recognizing an entity as a legal person and the theoretical frameworks that underpin this acknowledgment. The subsequent inquiry addresses the rights and responsibilities of these (legal) persons. Legal personality represents the artificial embodiment of legal recognition or the ascription of personality by legal statutes. Legal persons may assume any form that legislative frameworks dictate, as they are fabricated law constructs.

Autonomous machines could be conferred legal personhood without legal impediments. Many scholars have asserted that no formal constraints prevent artificial intelligence from being acknowledged as a legal person. [12] According to various scholars, a legal framework has opted to regard an entity as an actual person when it bestows upon that entity-specific legal rights and responsibilities. Legal frameworks may elect to employ such a form of pretense, irrespective of the actual personhood of the entity in question. [13] “We possess empirical evidence of the acknowledgment of corporations, animals, environmental elements, and even idols as entities recognized as legal persons. [14].”

The United States and the European Union have reached a consensus on the legal status of specific categories of artificial intelligence. Both entities firmly reject the notion of legal personhood for devices utilized in intellectual warfare. Commanders in the military maintain accountability for any damage resulting from the misconduct exhibited by the AI. Two options are available regarding the application of AI in civil contexts. AI can function as a legal entity or agent within legal transactions. The determination of the legal personality of AI is significant, even in the context of AI and intellectual property rights. The reasoning is quite clear: as AI becomes increasingly embedded in all facets of existence, it prompts numerous inquiries regarding intellectual property ownership and the allocation of liability for infringement. First, It is essential to address whether artificial intelligence (AI) can be perceived as a legal entity endowed with rights and responsibilities to address these subsequent inquiries. Advanced AI will likely introduce a new dimension of complexity into our societal framework. The technological landscape is rapidly evolving, necessitating corresponding modifications to the existing legal framework. This adaptation is imperative so that our legal system can effectively address the legal dilemmas arising from technological advancements within our society. Substantial legal justification exists to endorse the notion that artificial intelligence possesses legal personality. In this context, the legal personhood attributed to corporations, labor unions, and other entities would not fundamentally differ from that of artificial intelligence. [15]

We must acknowledge our ethical obligation to confer rights upon artificial intelligence once it evolves into a conscious entity. The most compelling rationale for bestowing legal personhood upon artificial intelligence is facilitating an adaptive legal framework that can accommodate this technological evolution without requiring substantial alterations. Furthermore, this measure would ensure the continued interdependence of our societal structures and technological progress. A robust AI possesses autonomy and could be held accountable under legal statutes for its actions. When it is not made to answer for its conduct, liability will revert to its creators or proprietors. In such circumstances, these stakeholders may opt against the development of technologies that possess the capacity to alter our societal framework profoundly. The imposition of accountability on AI for its actions would preclude any innocent individual from bearing the consequences of its conduct. Artificial intelligence currently represents a formidable and influential entity within our societal context, and its significance is poised to increase in the foreseeable future. Despite being nascent, AI has already begun introducing challenges to legal infrastructures. Consequently, it is essential that we proactively prepare for this imminent technological progression, which was unforeseen and will simultaneously deter the exploitation of AI by individuals for their own unethical or illicit purposes. [16]

Artificial intelligence in other IPR regimes

Patents & artificial intelligence

The patent landscape encounters various challenges as artificial intelligence drives innovation across multiple sectors. The conventional stipulation of "non-obviousness" within patent jurisprudence becomes particularly compelling when AI algorithms autonomously conceive inventions that may not have been readily apparent to human creators. Evaluating the inventive steps in inventions generated by AI provokes inquiries regarding the methodology for appraising the contributions of algorithms and whether the absence of a human inventor undermines the patentability of such innovations. Achieving a harmonious equilibrium between promoting AI-induced innovation and preserving the integrity of patent systems is essential for nurturing sustained progress in technological evolution. [17] The patentability of inventions produced by artificial intelligence presents intricate legal and policy dilemmas. AI-generated inventions, encompassing applications or devices devised by intelligent computing systems, can execute complex tasks independently. They continually learn and enhance their functionalities over time. Judicial bodies and patent offices have frequently denied applications for AI-generated inventions, albeit with a few notable exceptions. This phenomenon arises from the foundational premise of patent law, which posits that inventors are inherently human. Additionally, certain governmental entities and judicial authorities have articulated positions asserting that inventions developed with the assistance of AI are not eligible for patent protection. [18]

An American scientist and inventor, Dr. Stephen Thaler, has developed an artificial intelligence system called DABUS (Device for the Autonomous Bootstrapping of Unified Sentience). DABUS represents a specific category of 'connectionist AI.' It employs multiple neural networks to conceive novel ideas, the originality of which is subsequently evaluated by an auxiliary system of neural networks. Through this methodology, DABUS has independently produced two "inventions." The first invention consists of a fractal container (a food storage apparatus), while the second is a neural flame (a device intended for search and rescue operations). Dr. Thaler's patent applications have failed in jurisdictions such as New Zealand, Taiwan, Israel, the Republic of Korea, Canada, Brazil, and India. To this point, South Africa and Saudi Arabia remain the only exceptions, albeit in both instances, the patents have not yet been subjected to comprehensive examination. The question of inventorship concerning AI-generated inventions has engendered complications for patentability. No unequivocal criteria exist for determining "autonomously generated" inventions created by artificial intelligence (AI). AI systems are assuming an increasingly pivotal role in the realm of innovation. A pertinent inquiry has emerged regarding how the patent system will safeguard inventions produced by AI. The conventional patent laws have proven inadequate in differentiating between AI as a tool and AI as the principal creator of inventions. Major corporations are poised to invest in the development of AI. However, the ambiguity surrounding the patenting of AI-generated inventions has the potential to hinder innovation and impede economic growth.

If inventions generated by artificial intelligence are not eligible for patent protection, there may be a decline in financial investment directed toward advancing AI technologies. Some scholars advocate placing AI-generated creations into the public domain to facilitate open access and promote communal benefits. Conversely, compelling arguments support the need to protect AI-generated works through the patent system, which stimulates investment and fosters innovation. Concerns have been articulated regarding the potential detrimental impact of an excessive accumulation of patents on AI inventions, which could

adversely influence ongoing research and development efforts. The integration of AI into the innovation process presents inherent risks to the safeguarding of trade secrets.
Nonetheless, the Full Court of the Australian Federal Court has proposed several alternatives concerning the determination of inventorship for the pertinent patents, specifically the proprietor of the machine that executes the AI software, the developer of the AI software, the holder of the copyright of its source code; and the individual who inputs the data utilized by the AI to produce its outputs. The consultation report from the UK Intellectual Property Office, published in the year 2022, delineated various options for reforming patent law, which include broadening the definition of 'inventor' to encompass the human agents responsible for an AI system that generates inventions, permitting AI to be recognized as the inventor; or affording protection to AI-generated inventions through mechanisms distinct from the patent system.

Trade mark & artificial intelligence

AI algorithms fulfill several fundamental objectives:

- Applying AI in trademark registration facilitates the process for applicants by providing recommendations that enhance the quality of their submissions.
- It effectively identifies potential conflicts between newly proposed trademarks and pre-existing rights, thereby mitigating the risk of subsequent legal disputes.
- AI is integral to optimizing trademark procedures, ensuring a higher rate of successful registrations.
- Within trademark law enforcement, AI is pivotal in detecting unauthorized online usage, encompassing infringements on social media platforms.

A notable case highlighting the convergence of AI and trademark law is the Lush vs. Amazon litigation. [19] In this instance, Amazon was adjudicated to have committed trademark infringement against Lush. Amazon engaged in bidding on the Google keyword "Lush," resulting in consumers searching for "Lush" being redirected to Amazon's platform. Notably, Amazon did not offer authentic Lush products for sale. Instead, Amazon's AI system recommended analogous products, culminating in a court ruling attributing liability for infringement to Amazon.
In e-commerce, the burgeoning adoption of AI incites apprehensions regarding manipulating brands. As AI increasingly assumes a consumer-like persona, legal disputes may proliferate. Judicial entities may be required to modify traditional legal constructs, such as the definitions of "average consumer" and "likelihood of confusion," in light of AI's participation. Given AI's integration into online purchasing systems, the retail landscape is evolving towards predictive models. Nevertheless, a profound emotional bond persists between consumers and brands.

Trade secrets & artificial intelligence

The advancement of artificial intelligence is significantly dependent on proprietary algorithms and extensive datasets, rendering trade secrets a critical component for sustaining a competitive advantage. Nonetheless, reconciling transparency in legal proceedings with the protection of trade secrets presents a formidable challenge, which has conventionally necessitated stringent measures to uphold confidentiality. In artificial intelligence, where models perpetually learn and evolve, delineating what constitutes appropriate efforts to preserve secrecy emerges as an urgent issue. Establishing explicit guidelines for protecting AI-related trade secrets to cultivate innovation while adhering to the principles of equitable competition is imperative.
Generative AI (GAI) is a robust data analysis and content generation instrument. Nonetheless, it necessitates a considerable volume of input data for training and learning. Nevertheless, its ability to retain extensive information incites apprehensions regarding the potential risk of exposing private and sensitive data. Confidentiality is paramount for trade secrets that confer a competitive advantage to enterprises. The United States Defend Trade Secrets Act (DTSA) of 2016 stipulates implementing "reasonable measures" to safeguard such information. The widespread adoption of GAI for autonomous content creation across numerous industries escalates the risk associated with trade secrets. The criteria defining "reasonable measures" will differ based on the specifics of each situation, yet may encompass:

- **Restricting access to trade secrets:** Organizations should limit access to trade secrets to personnel and other individuals who require this information to fulfill their professional responsibilities. This may necessitate utilizing access control mechanisms, including passwords or biometric identification, alongside the requirement for employees to execute non-disclosure agreements.
- **Instructing employees regarding trade secrets:** Organizations should educate their employees on the significance of safeguarding trade secrets and the ramifications of misappropriation. This educational initiative should encompass information about the legal definition of a trade secret, the company's policies regarding trade secrets, and the potential sanctions for misappropriating such information.
- **Executing physical security protocols:** Organizations should adopt physical security protocols to shield their trade secrets from unauthorized access. These protocols may involve the installation of surveillance cameras, regulating access to premises and offices, and utilizing alarm systems and other security apparatus.
- **Conducting oversight for misappropriation:** Organizations should monitor for any indicators of trade secret misappropriation. This may involve the regular examination of employee emails and digital files, the execution of background investigations on employees and contractors, and the inquiry into strange activities.

Organizations that utilize generative artificial intelligence encounter significant challenges in protecting proprietary information and sensitive data. Such information may be susceptible to unauthorized exposure. Consequently, certain enterprises implement prohibitive measures or restrictions concerning the utilization of AI to mitigate potential risks. Nevertheless, a comprehensive prohibition on deploying generative AI may incur considerable costs and engender prospective competitive disadvantages. Thus, the secure application of generative AI necessitates the establishment of rigorous security protocols and explicit policies. To effectively diminish the risks associated with generative AI, fostering a culture of awareness within the organization is imperative.

The following delineates the optimal practices for the secure deployment of generative AI within a business context:

- It is crucial to restrict access and meticulously regulate the types of data inputs to protect proprietary and sensitive data.
- Along with meticulously drafted End-User License Agreements (EULAs), enterprise-grade versions of generative AI applications can provide supplementary security measures.
- These agreements specify the safeguarding or erasure of any data acquired by the AI.
- Ensuring employees, contractors, and third parties adhere to the established policies concerning generative AI is vital.
- Employee training and awareness initiatives are critical for mitigating risks associated with generative AI.

Implementing proactive strategies and routinely revisiting and updating security measures are essential to minimize risks linked to generative AI. Encryption and secure data transmission techniques should be adopted for data safeguarding. An exhaustive incident response strategy must be developed to address potential breaches swiftly. The formulation of security policies should be conducted with the assistance of legal professionals to guarantee compliance with data protection laws and regulations. Generative AI applications should undergo regular monitoring and auditing to identify any irregularities or unauthorized access. A culture promoting ethical AI utilization and responsible data management should be cultivated within the organization. The risks inherent in the use of generative AI should be routinely evaluated within the context of the business environment. Organizations should contemplate external certifications or audits to verify the security and compliance of generative AI systems. The organization should collaborate with the industry to exchange best practices and remain aware of emerging threats.

Data ownership & development of artificial intelligence

Data and artificial intelligence (AI) assume pivotal functions across diverse domains in the digital era. Data is frequently likened to crude oil, given its importance in strategic decision-making and fostering innovation. AI necessitates comprehensive datasets to convert unrefined data into substantive insights. The caliber and precision of data are indispensable for the attainment of commercial success. AI models profoundly depend on the input data's fidelity to yield trustworthy outputs. Systematically organized and retrievable structured data is the bedrock for forecasting nascent trends. Unstructured data yields significant insights that propel innovation and confer competitive advantages. Concerns regarding privacy and ethical implications represent critical challenges in data utilization within AI frameworks. Adaptation to shifting data paradigms and sustaining relevance necessitates the ongoing oversight and refinement of AI algorithms. Collaborative endeavors among data-sharing organizations can catalyze innovation across the industry. To mitigate the risks associated with cyber threats, cybersecurity protocols must be robust enough to protect sensitive information.

Generalized AI models, such as GPT-4, present data ownership and privacy difficulties. Privacy-related challenges encompass data biases, risks of mishandling, and the potential for identity theft. The capacity of AI to generate hyper-realistic images and manipulate deceptive content poses threats to personal privacy. Sophisticated AI voice technologies exacerbate the risks of impersonation and deception. The erosion of privacy rights may occur due to the need for well-defined consent mechanisms and transparency. There is a challenging need for stringent regulations and legal frameworks to protect individual privacy. AI is heavily reliant on meticulously curated datasets, particularly within the realms of machine learning (ML), large language models (LLM), and deep learning (DL), to ensure accuracy. Analyzing extensive volumes of input data by AI systems engenders privacy and copyright vulnerabilities. The "black box" characteristic of AI complicates the process of substantiating claims of intellectual property infringement. Given the substantial data requisites of AI systems, potential legal implications and privacy concerns may arise. Adherence to privacy legislation is essential for the ethical application of AI in content generation.

Intersection copyright laws & artificial intelligence

Copyright law, formulated to safeguard the creative manifestations of human authorship, is experiencing a profound paradigm transformation with the emergence of AI-generated content. The essential inquiry regarding authorship becomes increasingly ambiguous as algorithms autonomously generate works across various artistic domains, including art, music, literature, and other creative pursuits. Conventional copyright structures encounter significant challenges in accommodating non-human creators, thereby inciting discussions regarding the validity of copyright protection for works produced by artificial intelligence. Certain legal jurisdictions, at present, may not grant copyright protection unless there is explicit human participation in the creative endeavor. Nevertheless, as advancements in AI technologies progress, the discourse is evolving toward acknowledging AI as a potential creator worthy of legal protection. Achieving an equilibrium between fostering innovation and preserving the rights of human creators constitutes a pivotal challenge in the reformation of copyright statutes in the era of artificial intelligence. [20]

Various artificial intelligence (AI) systems frequently require substantial data to train their algorithms effectively. This data is an essential resource for AI systems, which is necessary for maintaining the system's operational efficiency. The utilized data encompasses copyrighted materials such as images, texts, and musical compositions, which may raise concerns regarding copyright infringement. AI technologies possess the capability to reproduce existing copyrighted works. The algorithms can analyze and generate content that closely mirrors protected works, raising pertinent questions regarding such reproductions' legality and ethical ramifications. The interaction between artificial intelligence (AI) and copyright protection within intellectual property has ignited a complex and multifaceted discourse. As AI technology evolves and accelerates, it engenders profound inquiries concerning the essence of authorship, originality, and the delineations of copyright law. This critical examination scrutinizes the intricacies of this developing relationship, exploring the challenges and opportunities that AI presents concerning copyright protection. [21]

- **AI as a creative force:** The advent of AI-generated works increasingly obscures the distinctions between human and machine creativity. The legal ramifications

of AI's capacity to formulate original works and retain copyrights are significant. Ethical considerations emerge concerning the acknowledgment of AI as a legitimate author.

- **Authorship and originality:** Determining authorship becomes challenging when AI plays a substantial role in creating a work. Evaluating originality in AI-generated content necessitates considering the absence of human involvement. Such implications challenge traditional conceptions of individual creativity and the human element.
- **Copyright ownership and attribution:** The assignment of copyright ownership is fraught with complexities when multiple entities (AI, programmers, and users) are implicated. There are attribution challenges and a pressing need for transparency in recognizing the contributions of AI to a work. Legal frameworks must be developed to address disputes concerning copyright ownership and attribution.
- **Fair use and transformative works:** Applying fair use principles to AI-generated content should consider its potentially transformative characteristics. A delicate balance must be struck between the rights of copyright holders and the imperative for innovation and reuse of AI-generated works. Relevant case studies and legal precedents about fair use and AI warrant examination.
- **Data rights and training datasets:** The copyright implications of employing copyrighted works as training data for AI models are significant. Ethical dilemmas arise surrounding the unauthorized utilization of copyrighted materials in AI training. Legal frameworks are essential for safeguarding data rights and regulating the employment of copyrighted works in AI training.
- **AI-assisted copyright enforcement:** The potential advantages of utilizing AI technology to detect and enforce copyright infringements are noteworthy. Concerns persist regarding the accuracy and fairness of AI-driven copyright enforcement mechanisms. The legal and ethical dimensions of automated copyright enforcement demand careful consideration.
- **International perspectives and legal developments:** A comparative analysis of copyright laws and regulations governing AI across various jurisdictions is essential. Ongoing legislative initiatives and international dialogues concerning AI and copyright protection are paramount. Harmonizing international laws is crucial to addressing the cross-border ramifications of AI-generated content.
- **Future trends and policy considerations:** Anticipated advancements in AI technology and their implications for copyright protection merit attention. Policy recommendations for legislators and policymakers are necessary to achieve a balance between innovation and the safeguarding of creative works. Establishing ethical guidelines and best practices is imperative for the responsible application of AI within the creative industries.

This critical examination elucidates the intricate dynamics inherent in the interplay between artificial intelligence and copyright protection, thoroughly analyzing the obstacles and potentialities it engenders. As AI technology undergoes continuous advancement, the evolution of legal frameworks, ethical imperatives, and policy deliberations will be instrumental in determining the trajectory of copyright legislation within the context of the digital era. [22]

The advent of statutory frameworks governing Artificial Intelligence (AI) in India epitomizes a worldwide endeavor to address the profound implications of AI technologies. In light of swift technological progression, India has acknowledged the imperative for legal structures that confront the distinctive challenges presented by AI systems. Within the Indian legal framework, the Information Technology Act 2000 serves as a fundamental cornerstone for regulating digital operations; however, the rapid proliferation of AI necessitates further considerations. Significantly, the Digital Personal Data Protection Act 2023 seeks to protect individuals' data privacy, recognizing AI's pivotal role in managing substantial quantities of personal data. Recent judicial rulings, notably the Puttaswamy verdict of 2017, [23] which affirmed the right to privacy as a fundamental entitlement, have substantially shaped the AI regulation discourse. Furthermore, the Indian judiciary has wrestled with cases on AI-generated content, thereby establishing a foundation for sophisticated legal interpretations. As AI technology advances, the Indian legal system strives to reconcile the promotion of innovation with the imperative of ethical and lawful utilization of artificial intelligence.

Copyright legislation in India has experienced considerable transformation and has been influenced by both domestic statutes and international treaties. The cornerstone of this body of law is encapsulated in the Copyright Act 1957, a comprehensive legal framework that delineates the rights of creators and governs the utilization of their intellectual outputs. As a signatory to the Berne Convention, India has aligned its copyright regulations with international benchmarks. The judiciary has assumed a crucial role in interpreting and applying copyright statutes. Landmark judicial decisions, such as Amar Nath Sehgal v. Union of India, [24] have elucidated the parameters of copyright protection applicable to artistic creations. Likewise, the Entertainment Network (India) Ltd. v. Super Cassette Industries Ltd. [25] case underscored the necessity of reconciling the rights of copyright holders with public interest considerations. The emergence of digital technologies and the proliferation of the internet have introduced novel challenges to enforcing copyright protections.

Although the Copyrights Act 1957 does not directly address the issue of AI-generated content, it delineates that the individual responsible for creating the work is recognized as the author of computer-generated works. This stipulation bears significant implications for AI-generated content and engenders potential opportunities and formidable challenges. In 2020, the Indian Copyright Office encountered a prominent case involving an AI system designated as 'RAGHAV' and its endeavor to obtain copyright registration for a piece of artwork entitled 'Suryast.' Initially denied on the grounds of the absence of a human author, the artwork subsequently received protection when a natural person was identified as a co-author in conjunction with 'RAGHAV.' Following this, a notice of withdrawal was issued, soliciting clarification regarding the legal status of 'RAGHAV,' thereby underscoring the existing ambiguity regarding AI's status as an artist under the

provisions of the Act. ChatGPT cannot be acknowledged as the author since Indian copyright legislation mandates that the individual asserting the copyright must be a natural person. Section 17 of the Indian Copyright Act stipulates that authors can only be individuals. [26] Typically, the term 'persons' is limited to natural individuals; however, corporate entities may be assigned copyright by individuals through contractual agreements for a specified duration. [27] Furthermore, Section 17 asserts that in the absence of an opposing contract, the human individual shall invariably retain the initial copyright of the creation.

Moreover, the overarching framework of the Act is oriented towards human authorship. For instance, the copyright registration application (Form-XIV) necessitates the provision of the claimant's name, nationality, and residential address. Nonetheless, the discussion regarding the eligibility of authors as solely natural persons (humans) or entities remains beyond this analysis's purview. This inquiry focuses on ascertaining the copyrightability of works generated by humans utilizing generative AI. [28]

This elucidates the role of law in India, as the 'prompt-giver' is responsible for generating the work. Submitting a singular prompt does not confer copyright protection upon a work. Copyright protection is afforded to an author if their artistic creation meets the necessary criteria to be deemed an 'original' work. The minimal standard for the allocation of copyright protection to the Author (which is not applicable in the Indian context) is encapsulated in the 'sweat of the brow' doctrine, which posits that an author acquires copyright rights based on the basic diligence and effort expended by them. A pivotal case for comprehending this principle is the University of London Press Ltd v. Tutorial Press Ltd, [29] wherein a publisher compiled a series of question papers disseminated by the University of London. The university contested this because it infringed upon the copyright of the professors who dedicated their expertise and time to creating those papers. In rebuttal, the publisher contended that the papers were derived from a pre-existing corpus of knowledge and, therefore, lacked "originality" and could not be subject to copyright. However, the court determined that, although the papers were fashioned from an established body of knowledge, a certain degree of effort had been exerted sufficient to render the papers eligible for copyright protection. This criterion of 'originality' bestows copyright based on diligence and effort and does not necessitate a stipulation for subsequent creativity. Nevertheless, an output generated from a mere prompt—regardless of its uniqueness concerning other works—is not eligible for copyright due to human authors' lack of effort to formulate a singular prompt. The concept of originality will be further examined in part A of the subsequent section.

Acknowledging that the copyright statute requires a human author is also imperative. Typically, works generated by artificial intelligence entail minimal human engagement, as a substantial portion of the effort is executed autonomously by the AI. Most criteria articulated in the framework established by D.B. Modak are satisfied by the AI rather than the human contributor. In Navigators Logistics Ltd. v. Kashif Qureshi, [30] a copyright assertion concerning a compilation created by a computer was dismissed due to insufficient human intervention. It was stated that human participation in the creative process is a prerequisite for conferring copyright protection within India's jurisdiction. The "Significant Input" assessment delineates two fundamental criteria for ascertaining whether an author who engaged AI assistance in producing a work can legitimately assert copyright. The first criterion is objective, necessitating examining whether human involvement occurred during the creative process. Secondly, the degree of human engagement must be evaluated. The 'extent' of human expertise, judgment, and effort expended in the creation must be substantial enough that the resultant product would be inherently altered or rendered non-existent in its absence.

An illustration will elucidate the position above more effectively. Let us consider a scenario within the domain of legal scholarship. Legal commentaries furnish a thorough, comprehensive, and contemporary law analysis. Composing a legal commentary is an arduous endeavor. It necessitates an extensive review of nearly every significant case, a meticulous study of the statute, and engagement with the academic discourse pertinent to the subject matter. The author can optimize their research methodology by employing AI tools to distill judicial opinions and extract critical elements from scholarly literature. This facilitates a greater focus on critical analysis and interpretation of the law, enhancing their scholarly output's efficiency and caliber. Now, let us introduce an additional layer of intricacy to this situation. The author in question is a non-native English speaker who has completed the preliminary draft and seeks to refine the language and grammar of specific manuscript sections utilizing ChatGPT. It is crucial to emphasize that ChatGPT can assist solely with form, structure, and grammar rather than effectuating substantive enhancements. The author significantly depends on ChatGPT to elevate the quality of the work. The commentary would only have attained its present form with this generative AI support. The pertinent question is whether the author can assert copyright over the commentary. According to the established criteria, the response is affirmative. Although AI assistance was employed in the process, the author satisfies the dual requirements of the assessment. Firstly, there was human input in the creative process, as the author engaged in research, identified pertinent judgments, and drafted the initial manuscript. Secondly, regarding labor, skill, and cognitive capacity exerted, the magnitude of human input was sufficiently significant that the commentary would have either been fundamentally altered or rendered non-existent without it.

The constitutional legitimacy of artificial intelligence and copyright legislation exhibits variability across different jurisdictions and is amenable to interpretation based on the foundational principles enshrined in the Constitution of India. Numerous constitutions encompass provisions pertinent to intellectual property rights. The constitutional legitimacy of copyright legislation can be evaluated in terms of its conformity with these provisions, thereby acknowledging the significance of safeguarding the outcomes of intellectual endeavor. Moreover, the constitutional guarantees on freedom of expression may become relevant when copyright legislation influences the capacity to create, utilize, and disseminate content generated by artificial intelligence. The intricate balance between the protection afforded by copyright and the right to freedom of expression constitutes a paramount consideration. Constitutional assurances of equality and non-discrimination may be pertinent in ensuring equitable and consistent treatment for creators, users, and artificial intelligence entities within the framework of copyright law. In scenarios

wherein artificial intelligence is dependent upon extensive datasets, the right to privacy as codified in a constitution may affect how copyright legislation reconciles the rights of creators with individual privacy entitlements. The constitutional doctrines of due process and the rule of law are imperative in guaranteeing that the nexus of AI and copyright legislation is characterized by clarity, transparency, and uniform application, thereby preempting arbitrary or discriminatory practices. A multitude of constitutions necessitate a harmonious equilibrium between competing rights. The constitutional legitimacy of artificial intelligence and copyright legislation hinges upon how the enacted laws achieve a reasonable and constitutionally acceptable equilibrium between protecting creators' rights and promoting innovation. When the constitutional validity of statutes is contested, litigants frequently cite specific constitutional articles or clauses that they contend are being infringed upon. The particulars of such challenges will be contingent upon the constitutional framework of the relevant jurisdiction. Legal disputes and judicial rulings are instrumental in elucidating the application of these constitutional principles to nascent challenges at the confluence of artificial intelligence and copyright law. [31]

Artificial Intelligence (AI) introduces complex dilemmas related to plagiarism and content generated by AI systems. AI algorithms, particularly those utilized in machine learning, are developed using extensive datasets, frequently derived from pre-existing content. In instances where this data encompasses copyrighted materials, the outputs generated by AI may unintentionally replicate elements of those materials, resulting in accidental cases of plagiarism. Moreover, while AI can produce novel outputs, these often arise from identifiable patterns within the training datasets. Consequently, distinguishing the boundary between inspiration and plagiarism becomes increasingly problematic. Furthermore, conventional plagiarism detection mechanisms may encounter difficulties when addressing AI-generated content, particularly when such content skillfully rephrases or reorganizes existing works innovatively. Given the prevalence of AI writing assistants, there exists a potential risk that individuals may excessively depend on AI-generated recommendations, ultimately resulting in homogenized content and obscuring the distinctions between authorship and original intellectual contributions. [32]

Conclusion

Copyright and intellectual property legislation confront multifaceted challenges in the contemporary landscape of artificial intelligence (AI) advancement. A pivotal inquiry emerges regarding the rightful ownership of copyright for creations generated by progressively advanced AI systems. Should the entitlement to copyright reside with the AI developer or the machine itself? Concerns surrounding originality, fixation, moral rights, personhood, and collaborative works are becoming increasingly perplexing within the framework of AI. This has sparked a discourse regarding the necessary legal response to the involvement of AI in the production of artistic works and the potential recognition of AI as a creator within the realm of copyright. The repercussions of AI advancements on copyright and intellectual property law encompass the identification of creators and copyright holders, a reevaluation of the notion of originality, a rise in copyright infringement incidents, considerations related to moral and personality rights, and the emergence of joint works that involve both human and AI contributions.

Furthermore, the progression of AI also introduces obstacles for copyright to effectively furnish protection, including issues related to database safeguarding and patent rights, which are significant considerations in the context of AI. Stakeholders and developers associated with AI must comprehend the relevant legal frameworks and seek appropriate legal counsel. In confronting these obstacles, there exists a necessity for interdisciplinary collaboration and further deliberation to formulate more precise directives concerning copyright in the continuously transforming landscape of AI. This also necessitates the innovation of copyright monitoring and enforcement mechanisms alongside ethical deliberations regarding the deployment of AI. In summary, the evolution of AI introduces added intricacy into intellectual property law, necessitating further legal adaptation and elucidation to govern copyright and intellectual property within this digital epoch. [33]

As we traverse the unexplored domain of AI-facilitated creativity, it is crucial to establish a nuanced equilibrium between regulatory measures and incentivizing mechanisms. The contemporary legal framework, particularly the structure governing intellectual property, necessitates adaptation to correspond with the advancements in AI-related technologies. The intrinsic vagueness in the legal milieu surrounding AI-generated content, notably with authorship inquiries, poses difficulties that traditional frameworks were not initially designed to confront. This ongoing evolution necessitates a meticulous reevaluation of current legislation, underscoring the imperative for an environment that promotes innovation and safeguards the rights of creators, be they human or artificial. The intricate interaction between AI capabilities and the conventional notion of creativity as a uniquely human trait introduces additional complexity to the discourse surrounding authorship and ownership within the context of AI. Ultimately, developing a progressive legal framework is vital to fully exploiting the potential benefits afforded by AI. This transformation transcends the mere modification of laws in response to technological progress and fosters a vibrant and inclusive ecosystem for innovation within India.

References

1. Sheetal. Critical analysis of AI and copyright protection, iPleaders (August 29, 2024, 06:59 PM) https://blog.ipleaders.in/critical-analysis-of-ai-and-copyright-protection/
2. Nagesh Karale. Intersection of artificial intelligence and intellectual property rights : challenges and opportunities, iPleaders (August 29, 2024, 08:45 PM) https://blog.ipleaders.in/intersection-of-artificial-intelligence-and-intellectual-property-rights-challenges-and-opportunities/
3. Harsh Pandya. Navigating the Intersection of AI and Intellectual Property Rights: Challenges and Opportunities, Jus Centre (August 29, 2024, 10:06 PM) https://juriscentre.com/2024/06/11/navigating-the-intersection-of-ai-and-intellectual-property-rights-challenges-and-opportunities/
4. The Copyright Act, 1957, § 2(d)(vi), No.14, Acts of Parliament, 1957 (India)

5. WIPO. https://www.wipo.int/about-ip/en/artificial_intelligence/policy.html (Last visited on August 30, 2024)
6. Ayush Tiwari. All you need to know about the TRIPS Agreement, iPleaders (August 30, 2024, 12:03 PM) https://blog.ipleaders.in/all-you-need-to-know-about-the-trips-agreement/
7. Bhavya Saxsena. Intersection of Artificial Intelligence & Copyright Laws, White Black Legal Journal (August 30, 2024, 10:04 AM) https://www.whiteblacklegal.co.in/details/intersection-of-artificial-intelligence-and-copyright-laws-by---bhavya-saxena-
8. Nayantara Sanyal. Sheetal Mishra & Nihal Shah, Intersection of Intellectual Property Rights and AI-Generated Works – Part I, Bar & Bench (August 29, 2024, 10:40 PM) https://www.barandbench.com/law-firms/view-point/intersection-intellectual-property-rights-ai-generated-works-part-i
9. Katsiaryna Rusinovich. The Intersection of AI and Intellectual Property Law: Navigating Legal Frontiers, Vol.12 Issue 12, IJSR, 356, 356-357 (2023) https://www.ijsr.net/archive/v12i12/SR231128214222.pdf
10. Ibid
11. Nayantara Sanyal, Sheetal Mishra, Nihal Shah. Supra Note 7
12. Solum B. Lawrence Legal Personhood for Artificial Intelligences. North Carolina Law Review,1992:70(4):1234-1256.
13. Bryson JJ, Diamantis ME, Grant TD. Of, for, and by the people: the legal lacuna of synthetic persons. Artificial Intelligence and Law,2017:25(3):345-367.
14. Solaiman SM. Legal personality of robots, corporations, idols and chimpanzees: A quest for legitimacy. Artificial Intelligence and Law,2017:25(2):201-218.
15. Siddharth Singh. Navigating the intersection of artificial intelligence and copyright law: Challenges and implications,2024:6(4):23-24. https://www.allstudyjournal.com/article/1141/6-3-19-710.pdf
16. Ibid at 24
17. Katsiaryna Rusinovich, Supra Note 9 at 356
18. Nagesh Karale, Supra Note 4
19. Cosmetic Warriors Ltd & Anr. v Amazon.Co.UK Ltd and Anr., [2014] EWHC 181 (Ch)
20. Katsiaryna Rusinovich, Supra Note 19 at 357
21. Sheetal. Supra Note 3
22. Ibid
23. Justice K.S. Puttaswamy (Retd) vs Union of India, 2019 (1) SCC
24. 2005 (30) PTC 253 Del
25. (2008) 13 SCC 30
26. The Copyright Act, 1957, § 17, No.14, Acts of Parliament, 1957 (India)
27. The Copyright Act, 1957, § 18, No.14, Acts of Parliament, 1957 (India)
28. Harshal Chhabra, Kanishk Gaurav Pandey. Balancing Indian Copyright Law with AI-Generated Content: The 'Significant Human Input' Approach, Indian Journal of Law & Technology (August 30, 2024, 03:32 PM) https://www.ijlt.in/post/balancing-indian-copyright-law-with-ai-generated-content-the-significant-human-input-approach
29. [1916] 2 Ch 601
30. (2018) 254 DLT 307 : (2018) 76 PTC 564
31. Gyaaneshwar Joshi. Artificial intelligence and constitutional morality: the complementary elements, iPleaders (August 30, 2024, 03:59 PM) https://blog.ipleaders.in/artificial-intelligence-constitutional-morality-complementary-elements/
32. Syed Wajdan Rafay Bukhari, Saif Ullah Hassan, Yasir Aleem. Impact Of Artificial Intelligence on Copyright Law: Challenges and Prospects, Vol.V Issue IV, JLSS, 647, 651 https://www.researchgate.net/publication/377334695_Impact_Of_Artificial_Intelligence_on_Copyright_Law_Challenges_and_Prospects
33. Evita Isretno Israhadi. The Impact of Developments in Artificial Intelligence on Copyright & other Intellectual Property Laws,2023:10(2):18-19. https://www.researchgate.net/publication/375481004_The_Impact_of_Developments_in_Artificial_Intelligence_on_Copyright_and_other_Intellectual_Property_Laws