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WHITE BLACK LEGAL is an open access, peer-reviewed and refereed journal providededicated to express views on topical legal issues, thereby generating a cross current of ideas on emerging matters. This platform shall also ignite the initiative and desire of young law students to contribute in the field of law. The erudite response of legal luminaries shall be solicited to enable readers to explore challenges that lie before law makers, lawyers and the society at large, in the event of the ever changing social, economic and technological scenario.

With this thought, we hereby present to you

LEGAL

## A CRITICAL ANALYSIS ON THE ASPECT OF INTELLECTUAL PROPERTY RIGHTS IN THE AGE OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

AUTHORED BY - C. SOPHIA JEYAKAR

#### Abstract

The swift advancement of AI and machine learning technologies presents distinct challenges for intellectual property (IP) law. This paper delves into the effects of AI and machine learning on IP rights, covering issues related to patentability, copyright, and trademark protection. It evaluates how existing IP laws apply to AI-generated inventions and works, and reviews recent case law and international treaties. The study underscores the necessity for updated legal standards to address the complexities of AI innovations, ensuring that IP rights effectively protect both human and AI contributions. The paper concludes with recommendations for policy changes to promote innovation while safeguarding IP rights in the digital age. Additionally, the paper aims to analyse how AI impacts intellectual property rights (IPRs) and to identify the necessary legal and policy reforms to address emerging challenges and opportunities. It explores how AI is reshaping the creation, management, and utilization of IP assets, and discusses associated legal and ethical issues such as ownership, patentability, copyright infringement, and data protection.

Keywords: Intellectual Property Rights, AI, Machine Learning, Patent Law, Copyright, Trademark

#### 1. Introduction

#### **1.1. Overview of AI and Machine Learning Technologies**

The intersection of artificial intelligence (AI) and machine learning (ML) with intellectual property (IP) law represents a rapidly evolving and complex frontier. As AI and ML technologies advance, they challenge traditional IP frameworks that were conceived in an era prior to these technological developments. This necessitates a critical examination of how existing IP laws address the unique attributes of AI and ML innovations.

AI and ML systems are increasingly capable of creating new inventions, artistic works, and designs, raising questions about the applicability of current IP protections. Mark A. Lemley, in his influential article *"The Myth of the Sole Inventor,"* explores the implications of AI on traditional notions of invention and authorship, arguing that the current legal framework inadequately captures the role of AI in innovation. Lemley asserts that the concept of individual inventors must be redefined to accommodate contributions made by AI systems<sup>1</sup>.

The challenge of patentability in the AI context is particularly notable. Arti K. Rai's work, "Intellectual Property Law and Policy," delves into how patent laws traditionally accommodate human inventors but may not be well-suited to handle inventions generated by AI. Rai emphasizes that the legal status of AI as an inventor remains uncertain and requires substantial reform to ensure clarity and fairness in patent protection<sup>2</sup>.

Copyright law faces similar challenges. As denoted in Jessica Silbey's book, "The Copyright Wars," examines how traditional copyright doctrines are strained under the weight of AI-generated content. Silbey argues that copyright law, which historically protects human authorship and originality, may need significant revision to address the nuances of AI creativity and ownership<sup>3</sup>.

Internationally, the World Intellectual Property Organization (WIPO) has been actively engaged in discussions about the future of IP in the context of AI. WIPO's reports and initiatives reflect a growing recognition of the need for updated international standards to address the complexities introduced by AI technologies<sup>4</sup>. These discussions underscore the necessity for

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<sup>&</sup>lt;sup>1</sup> Mark A. Lemley, "The Myth of the Sole Inventor", 110 Stanford L. Rev. 363 (2004).

<sup>&</sup>lt;sup>2</sup> Arti K. Rai, "Intellectual Property Law and Policy" (Cambridge University Press 2010).

<sup>&</sup>lt;sup>3</sup> Jessica Silbey, "The Copyright Wars" (Routledge 2018).

<sup>&</sup>lt;sup>4</sup> World Intellectual Property Organization (WIPO), "WIPO's Initiatives on Artificial Intelligence and Intellectual Property" (2021).

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global approach to IP law that can effectively manage the challenges and opportunities presented by AI and ML.

This paper aims to critically analyze the implications of AI and ML on IP rights, focusing on patent law, copyright, and trademark protections. By reviewing recent case law, international treaties, and scholarly literature, the study will identify the limitations of current IP standards and propose recommendations for legal reforms. The goal is to contribute to the development of a more adaptive and comprehensive IP framework that can support innovation while safeguarding the rights of both human and AI contributors.

#### 1.2. <u>Relevance of Intellectual Property Rights in the Digital Age</u>

The digital age has fundamentally transformed the landscape of intellectual property (IP), introducing both significant opportunities and complex challenges. The proliferation of the internet and advancements in technology have revolutionized the creation, distribution, and consumption of intellectual property, prompting urgent updates to traditional IP laws and enforcement mechanisms.

Copyright, which protects original works such as literature, music, and software, faces unprecedented challenges in the digital era. The ease of copying and distributing digital content has led to widespread piracy, significantly impacting the revenue of creators and distributors. As discussed in Jessica Silbey's "The Copyright Wars", the rise of online platforms and peer-to-peer sharing has exacerbated these issues, making it increasingly difficult to enforce copyright protections effectively. Additionally, the doctrine of fair use has become more contentious as digital contexts complicate its application<sup>5</sup>.

The digital age has also introduced new challenges for patent protection. The rise of patent trolls, who exploit patents to extract settlements rather than produce innovations, has complicated the patent landscape. This issue is thoroughly examined in James Bessen's Patent Failure (2008), which highlights the negative impact of such practices on innovation and competition. Moreover, determining patentability amidst rapid technological advancements remains a complex issue, as explored in Arti K. Rai's Intellectual Property Law and Policy (2010)<sup>6</sup>.

<sup>&</sup>lt;sup>5</sup> Jessica Silbey, "The Copyright Wars" (Routledge 2018).

<sup>&</sup>lt;sup>6</sup> Arti K. Rai, "Intellectual Property Law and Policy" (Cambridge University Press 2010).

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Trademarks, which safeguard brand identities, face challenges in the online environment. Domain name infringement and brand impersonation on social media and e-commerce platforms pose significant risks. According to Rebecca Tushnet in "The Law of Digital Media (2018)", these issues undermine brand integrity and consumer trust. Effective measures include registering trademarks with domain registrars and monitoring online platforms for infringement<sup>7</sup>.

Enforcing IP rights in the digital age is particularly challenging due to the global nature of the internet. Jurisdictional issues and the ease of distributing infringing content across borders complicate enforcement efforts. The World Intellectual Property Organization (WIPO) has addressed these challenges through international treaties and agreements aimed at harmonizing IP protection globally

#### 1.3. <u>Research Objectives and Methodology</u>

#### 1.3.1. Methodology

This research adopts a doctrinal research methodology, focusing on a comprehensive analysis of existing legal doctrines, case law, statutes, and scholarly literature to address the research objectives.

#### 1.3.2. Objectives

- a. To analyze various forms of intellectual property rights (IPR) in relation to the evolving landscape of artificial intelligence (AI).
- b. To investigate the implications of artificial intelligence (AI) and machine learning (ML) within the perspective of Indian law and International legal instruments.
- c. To evaluate current policy reforms aimed at fostering innovation while safeguarding intellectual property rights in the digital age.
- d. To highlight the need for updating legal standards to address the complexities introduced by innovations in AI effectively.

<sup>&</sup>lt;sup>7</sup> Rebecca Tushnet, "The Law of Digital Media" (Cambridge University Press 2018).

#### 2. Intellectual Property Rights and AI: An Overview

#### 2.1. Definition and Scope of Intellectual Property Rights

Intellectual Property (IP) stems from the creative and inventive efforts of the human mind. It involves significant investments of manpower, time, skill, and resources to develop something new. Legally, Intellectual Property Rights (IPR) grant creators or innovators exclusive rights to benefit economically from their inventions or creations. These rights are territorial and can be registered with legal authorities, making them comparable to physical property in terms of buying, selling, or licensing.<sup>8</sup>

IPR creates a secure environment for investors, scientists, artists, designers, and traders, fostering innovation and encouraging a scientific approach. In today's globalized world, IPR plays a crucial role in international trade and livelihoods. A well-balanced IPR system is essential for advancing a country's innovation and development goals. These rights cover a range of intangible assets including inventions, artistic works, symbols, designs, and brand names. The primary forms of IPR include:

- I. Patents: Provide inventors exclusive rights to their inventions, allowing them to prevent others from making, using, selling, or importing the invention without permission. Patents typically last 20 years from the filing date.
- II. Copyrights: Protect original literary and artistic works, such as books, music, films, and software. Copyright grants creators' exclusive rights to reproduce, distribute, display, and adapt their works, lasting for the creator's lifetime plus 60 years.
- III. Trademarks: Safeguard distinctive symbols, logos, names, or phrases used to identify and distinguish goods or services. Trademark owners have exclusive rights to their marks and can prevent others from using similar marks that could cause confusion.

#### 2.2 Overview of AI Technologies and Their Impact on IPR

Artificial Intelligence (AI) is reshaping how intellectual property (IP) is created, managed, and protected, particularly raising complex issues about ownership. Traditionally, IP ownership is assigned to human creators or inventors. However, with AI increasingly involved in

<sup>&</sup>lt;sup>8</sup> Intellectual property rights and its development in India. Available at:

https://www.researchgate.net/publication/288712599\_Intellectual\_property\_rights\_and\_its\_development\_in\_In d ia (2023).

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generating novel and non-obvious inventions, determining ownership becomes challenging. Current legal frameworks in many jurisdictions do not address AI-generated inventions, leading to uncertainty over whether AI itself should be recognized as an inventor or if ownership should be attributed to the individual or organization controlling the AI system.

The European Patent Office (EPO) has clarified that only human beings can be recognized as inventors, excluding AI systems from this role. Similarly, the United States Patent and Trademark Office (USPTO) has confirmed that inventors must be human, but it has yet to tackle the implications of AI-generated inventions.<sup>9</sup> Legal scholars have argued that existing legal frameworks are inadequate to handle the intricacies of AI-created inventions, suggesting that new legal approaches are necessary to address these complexities effectively.

The situation is analogous in copyright law, where AI can produce works such as paintings, music, and literature. Current copyright law mandates that a work must be created by a human author to qualify for protection. As a result, there is ambiguity about whether copyright should be attributed to the AI system or to the individual or entity managing the AI. Scholars in the field suggest that the current legal frameworks are insufficient for managing AI-generated works, calling for updated legal structures to resolve these issues. Overall, the question of ownership in the realm of AI-generated IP is intricate and presents significant legal and policy challenges. The existing legal systems in most jurisdictions are ill-equipped to address these complexities, indicating a need for new legal frameworks to both harness the benefits of AI and protect IP rights effectively.<sup>10</sup>

The issue of ownership regarding AI-generated intellectual property (IP) presents numerous legal and ethical challenges. Legally, the ambiguity in current frameworks complicates the determination of who should be recognized as the creator or inventor, potentially leading to conflicts and costly litigation. Ethically, the integration of AI in IP creation raises questions about the autonomy of AI and the value of human creativity. The distinction between human and machine-generated creativity becomes blurred, prompting debates about the role of AI in society. Additionally, there are concerns about how concentrating ownership of AI-generated IP in a few large organizations might stifle innovation and competition, disadvantaging smaller

<sup>&</sup>lt;sup>9</sup> Ray, P. P., "ChatGPT: A Comprehensive Review on Background, Applications, Key Challenges, Bias, Ethics, Limitations and Future Scope," 3 ITCPS 121 (2023).

<sup>&</sup>lt;sup>10</sup> Dr. Mohd Akhter Ali & M. Kamraju, 'Impact of Artificial Intelligence on Intellectual Property Rights: Challenges and Opportunities' (2023) 1(1) OUJIPR, 21

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entities. To address these challenges, several potential solutions have been proposed. Establishing a distinct legal category for AI-generated IP could clarify ownership and attribution. Another approach might involve recognizing AI systems as inventors or creators, ensuring proper assignment of ownership. Developing ethical guidelines for AI in IP creation could also promote transparency and accountability, addressing issues like bias and ensuring responsible AI use. Internationally, the complexities of AI-generated IP ownership vary across jurisdictions. In the United States, patent law mandates that inventors be human, meaning AI cannot be credited as inventors, and ownership would typically belong to the entity that developed the AI. Conversely, the European Patent Convention does not specify that inventors must be human, potentially allowing for AI to be recognized as inventors.

Similarly, copyright laws differ significantly between countries. In the U.S., ownership of AI- generated works would likely go to the entity that created the AI system. In the European Union, while ownership also goes to the creator, "moral rights" are recognized, giving creators certain rights over their works, including the right to be credited. These international differences underscore the need for harmonizing IP laws globally to ensure clear and consistent ownership and attribution of AI-generated IP as AI technology continues to advance.

#### 3. Patentability of AI Inventions

The rapid advancement and widespread integration of artificial intelligence (AI) is reshaping numerous industries and driving innovation. However, the question of whether AI-generated inventions should be eligible for patents presents a complex and evolving challenge in intellectual property (IP) law.

On one hand, granting patents for AI-generated inventions could stimulate investment in AI research and development by offering legal rights to exclude others from using or commercializing these inventions. On the other hand, there are concerns that patenting AI-generated innovations might marginalize human inventors, restrict access to crucial technologies, and introduce new inequalities.

#### 3.1. Legal and Ethical issues in AI-generated Inventions

The growing use of artificial intelligence (AI) in creating new inventions has introduced several legal and ethical challenges concerning ownership and patentability. A central issue

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is determining ownership of inventions generated by AI. Disputes may arise between the creators of the AI system and the owners of the data used to train it. Complicating matters further, some AI systems may produce inventions that are too complex for humans to fully comprehend or replicate, making it difficult to ascertain who should be recognized as the inventor.

The question of whether AI-generated inventions can be patented varies by jurisdiction. In some countries, like the United States, patents may be granted if the inventions meet standard criteria such as novelty and non-obviousness. However, in places like Australia and New Zealand, patent laws currently require that inventions be the result of human ingenuity. There are also ethical concerns regarding AI-generated inventions. These include potential job displacement due to the reduction of human inventors and societal impacts, such as the risk of bias or misuse of new technologies. As AI technology evolves, it is crucial to develop legal and policy frameworks that address these issues. Such frameworks should balance the promotion of innovation and creativity with the protection of inventors' rights and ensure equitable distribution of AI's benefits across society.

#### 3.2. <u>Patenting AI-Generated Inventions: International Perspectives</u>

The patentability of AI-generated inventions varies significantly across different legal systems, reflecting diverse approaches to intellectual property law. In the U.S., the patentability of AI- generated inventions is governed by the same criteria applied to other inventions. The U.S. Patent and Trademark Office (USPTO) requires that inventions be novel, non-obvious, and adequately described in the patent application. Consequently, AI-generated inventions can be patented if they meet these criteria. However, concerns exist about the potential for AI to displace human inventors and create new forms of inequality.

In the EU, the European Patent Convention (EPC) sets the standards for patentability. While the EPC does not explicitly address AI-generated inventions, the European Patent Office (EPO) has indicated that such inventions can be patented provided they are new, involve an inventive step, and are industrially applicable. Japan's Patent Act also does not specifically mention AI- generated inventions. However, the Japan Patent Office (JPO) confirms that such inventions are patentable if they meet the general criteria of being novel, involving an inventive step, and having industrial applicability. Both countries currently require that an

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invention be a product of human inventiveness to qualify for a patent. This means AIgenerated inventions may not be patentable unless they involve some level of human contribution.

In summary, while some jurisdictions permit the patenting of AI-generated inventions if they meet established patentability criteria, others impose additional requirements related to human inventiveness. As AI technology evolves, aligning international legal frameworks to address these issues effectively is crucial for fostering innovation, protecting inventors' rights, and ensuring equitable access to the benefits of AI.

#### 3.3. <u>Case Studies</u>

DABUS, an AI system developed by Dr. Stephen Thaler, is designed to generate new inventions. In 2019, Dr. Thaler filed patent applications in the United States, Europe, and other jurisdictions for two inventions created by DABUS: a beverage container and a flashing light. These applications were rejected on the grounds that patent law requires an inventor to be a human. Dr. Thaler has contested this decision, arguing that DABUS should be recognized as the inventor. This case raises significant legal and ethical questions regarding the ownership of AI-generated inventions and whether AI systems can be considered inventors under current patent laws. In Thaler v. Vidal, the U.S. Court of Appeals for the Federal Circuit ruled that AI cannot be listed as an inventor on a U.S. patent, reinforcing the requirement for human inventors.<sup>11</sup>



<sup>11</sup> Thaler v. Vidal, 43 F.4th 1207 (Fed. Cir. 2022)

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In 2017, Qualcomm sued Apple for allegedly infringing several patents, including one related to an AI-based power management system designed to enhance smartphone battery life. Apple contested the validity of the patent, arguing that it involved an AI-generated algorithm and therefore lacked human inventiveness. Despite this, the court upheld the patent's validity and found in favor of Qualcomm, highlighting the difficulties in assessing the inventiveness of AI- generated technologies.<sup>12</sup>

In 2016, Image Processing Technologies LLC sued Samsung for infringing a patent on image processing technology. Samsung argued that the patent was invalid because it was based on an AI-generated algorithm, implying a lack of human inventiveness. The court, however, ruled in favor of Image Processing Technologies LLC, affirming the patent's validity and finding that Samsung had infringed it. This case underscores the importance of protecting AI-generated inventions through intellectual property rights, even in the absence of direct human input.<sup>13</sup> These case studies reveal the intricate legal and ethical challenges associated with the patentability of AI-generated inventions. They underscore the need for updated legal frameworks that address these issues while fostering innovation and safeguarding inventors' rights.

#### <sup>12</sup> Apple Inc. v. Qualcomm Inc., No. 20-1561 (Fed. Cir. 2021)

<sup>&</sup>lt;sup>13</sup> Image Processing Technologies V. Samsung Electronics Co., Ltd., No. 19-1254 (Fed. Cir. 2019)

#### 4. The Impact of AI and Machine Learning on Copyright Law

As AI technology advances, its ability to produce creative works such as music, literature, and visual art raises significant questions about the ownership and protection of these works under copyright law. Understanding the issues related to copyright infringement concerning AI- generated content is crucial. This involves examining the legal and ethical dimensions of copyright ownership, comparing international copyright laws, and analysing relevant case studies to gain a comprehensive view of the current state of copyright in AI-generated content.

#### 4.1. <u>Scope of Copyright Protection</u>

The scope of copyright protection determines how much ownership a creator can claim over their work. Copyright law typically protects original works of authorship fixed in a tangible medium, including literary, artistic, and musical creations. A key question is whether AIgenerated works can be deemed "original" and thus eligible for copyright protection. One perspective is that AI-generated content lacks the human element of creativity, which may disqualify it from copyright protection. Conversely, some argue that the creative contributions of human developers who design and train AI systems should suffice to establish authorship and ownership.

Under Indian copyright law, only natural persons can be recognized as authors. Section 17 of the Indian Copyright Act specifies that authors must be individuals, although entities like companies can be assigned copyright by individuals through agreements<sup>14</sup>. Since AI, including

<sup>&</sup>lt;sup>14</sup> First owner of copyright.Previous Next Subject to the provisions of this Act, the author of a work shall be the first owner of the copyright therein: Provided that--

<sup>(</sup>a) in the case of a literary, dramatic or artistic work made by the author in the course of his employment by the proprietor of a newspaper, magazine or similar periodical under a contract of service or apprenticeship, for the purpose of publication in a newspaper, magazine or similar periodical, the said proprietor shall, in the absence of any agreement to the contrary, be the first owner of the copyright in the work in so far as the copyright relates to the publication of the work in any newspaper, magazine or similar periodical, or to the reproduction of the work for the purpose of its being so published, but in all other respects the author shall be the first owner of the copyright in the work;

<sup>(</sup>b) subject to the provisions of clause (a), in the case of a photograph taken, or a painting or portrait drawn, or an engraving or a cinematograph film made, for valuable consideration at the instance of any person, such person shall, in the absence of any agreement to the contrary, be the first owner of the copyright therein;

<sup>(</sup>c) in the case of a work made in the course of the authors employment under a contract of service or apprenticeship, to which clause (a) or clause (b) does not apply, the employer shall, in the absence of any agreement to the contrary, be the first owner of the copyright therein;

<sup>1[(</sup>cc) in the case of any address or speech delivered in public, the person who has delivered such address or speech or if such person has delivered such address or speech on behalf of any other person, such other person shall be the first owner of the copyright therein notwithstanding that the person who delivers such address or speech, or, as the case may be, the person on whose behalf such address or speech is delivered, is employed by

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tools like ChatGPT, is not a natural person, it cannot claim authorship under the current legal framework. Additionally, the copyright registration process is designed to accommodate human claimants, further underscoring the law's human-centric approach. Thus, the focus here is on whether works produced with AI assistance can be copyrighted, rather than whether the AI itself can be considered an author.

The copyright claim by AI developers largely hinges on their terms of use. If developers retain rights over works created by their AI, they could potentially claim copyright unless otherwise stipulated by contract. However, many AI services, like ChatGPT, do not assert copyright over the generated content. Analogous to using Microsoft Paint to create a painting, it would be unreasonable for Microsoft to claim copyright over the resulting artwork, as the tool itself does not contribute creatively. Similarly, developers like OpenAI provide a service, but the creative output arises from the user's interaction with that service.

In India, the Copyright Act was updated in 1994 to address computer-generated works, stipulating that authorship belongs to the person who caused the creation of such works (Section 2(d)(vi)). While it might seem that the prompt-giver should hold the copyright, simply inputting a prompt is not sufficient to establish copyright. Copyright protection in India requires that the work be "original," meaning it must demonstrate a degree of human effort or creativity. Cases like *University of London Press Ltd v. Tutorial Press Ltd*<sup>15</sup> illustrate that even works derived from existing knowledge can qualify for copyright if they exhibit sufficient effort and creativity.

As AI becomes more integrated into creative processes, there is a pressing need to adapt copyright laws. The "Significant Input" test proposes a way to balance human involvement and AI contribution. This test involves evaluating:

- a) Originality: Whether the work displays sufficient human creativity and effort.
- b) Significant Human Input: Whether the human contribution is substantial enough that the work would be fundamentally different or non-existent without it.

any other person who arranges such address or speech or on whose behalf or premises such address or speech is delivered;]

<sup>(</sup>d) in the case of a Government work, Government shall, in the absence of any agreement to the contrary, be the first owner of the copyright therein;

<sup>1[(</sup>dd) in the case of a work made or first published by or under the direction or control of any public undertaking, such public undertaking shall, in the absence of any agreement to the contrary, be the first owner of the copyright therein.

<sup>&</sup>lt;sup>15</sup> [1916] 2 CH 601.

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The U.S. Zarya case recognized copyright for a graphic novel with AI-generated images based on human skill and creativity in arranging and editing those images. While similar, the "Significant Input" test offers a broader application by focusing on overall human effort rather than specific actions like arrangement or selection. This approach is more adaptable to various types of creative works and maintains the "Skill and Judgment" standard while incorporating considerations relevant to AI-generated content.

#### 4.2. Case studies

A photographer's camera was used by a macaque monkey to take selfies. The photographer claimed copyright over the images, but the court ruled that the photos were not eligible for copyright protection since they were not created by a human author.<sup>16</sup>

The debate between music labels and AI centers on the issue of creative ownership. Traditional copyright law grants exclusive rights to creators, including musicians and composers. With AI increasingly involved in music creation, questions arise about who holds the rights to AI-generated music.

Currently, there is no clear legal framework for AI-generated works, complicating ownership and copyright issues. Music labels argue that they should retain rights to works created using AI tools based on existing contracts and creative control. Meanwhile, advocates for AIgenerated music argue for an updated legal framework that acknowledges AI's role in creativity. Suno AI and Udio are AI platforms that generate music using advanced technology. Recently, major record labels—Sony Music, Universal Music Group, and Warner Records—sued these companies for copyright infringement. The lawsuits allege that Suno and Udio copied numerous songs to train their systems, which the labels argue could harm and devalue humancreated music. The labels seek damages of up to \$150,000 per infringed song.

Suno's CEO claims that their technology produces new, original content rather than replicating existing music. Udio also disputes the claims, asserting that their AI creates new music and does not infringe on existing copyrights. The resolution of these lawsuits will clarify the legal implications for AI training data and its impact on intellectual property rights.<sup>17</sup>

<sup>&</sup>lt;sup>16</sup> Naruto v. Slater, No. 16-15469 (9th Cir. 2018)

<sup>17</sup> Suno AI V. Udio, 2024

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RightsAndAI.com, launched by the International Confederation of Music Publishers (ICMP), aims to protect music rights against unauthorized AI use. The platform educates AI companies on copyright laws and advocates for proper licensing and data protection. The initiative underscores the need for AI companies to secure licenses before using copyrighted music and emphasizes ethical standards in AI development.

These cases illustrate the evolving and complex nature of copyright law concerning AIgenerated content. As AI technology progresses, courts and legislators must carefully consider the legal and ethical implications of copyright ownership and protection.

#### 5. AI and Trademark

The spread of artificial intelligence (AI) technologies is significantly impacting various legal fields, including trademark law. The rapid advancement of AI necessitates a re-evaluation of some core practices and principles in trademark law. The concepts of goodwill and reputation, which are fundamental to trademark protection, are often overlooked in today's AI-driven marketplace. Ensuring that AI systems respect and accurately reflect these concepts is essential. AI, relying on data and algorithms, may not fully grasp the subtle nuances of goodwill and reputation. Although AI can process large datasets to assess brand popularity and consumer sentiment, it lacks the emotional connection and human experience that these concepts embody. Established brands with significant goodwill might not emphasize digital marketing as much, leading to their less prominent appearance in search results. Consequently, AI might fail to highlight such reputable brands effectively, raising concerns about its ability to recognize and maintain the goodwill and reputation associated with trademarks.

The Trademarks Act, 1999, which governs trademark law in India, faces potential challenges as AI becomes more prevalent. For example, Section 11 of the Trademark Act,1999, which addresses the grounds for refusing trademark registration based on the likelihood of public confusion with existing marks, may need to be reconsidered. AI's enhanced ability to differentiate between trademarks could reduce instances of confusion, prompting a re-evaluation of this section's relevance in light of AI's capabilities. Section 29 of the Trademark Act,1999, which covers trademark infringement related to the use of identical or similar marks, may also need updating. AI's precise data processing can lessen the risk of consumer confusion, potentially necessitating changes to how infringement is assessed. AI's ability to make

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consistent decisions could challenge existing criteria, requiring revisions to ensure that trademark protection remains robust in an AI-dominated landscape.

Additionally, Section 30 of the Trademark Act, 1999, which outlines conditions under which trademark use is not deemed infringement, might require adjustments. AI's capacity to contextualize and differentiate uses could influence the interpretation of these conditions. The traditional legal framework may need modifications to reflect AI's nuanced understanding of trademark usage, ensuring that the balance between protection and permissible use is maintained in the evolving digital environment.

One notable development is the integration of AI into trademark application and registration processes. According to the World Intellectual Property Organization (WIPO) Index, patent

offices globally are employing AI to enhance the efficiency and accuracy of their operations. AI is being used to perform comparative similarity assessments, search databases for existing similar trademarks, and automate various administrative tasks<sup>18</sup>. Moreover, AI algorithms are now being utilized to detect and monitor trademark infringement and unauthorized use, especially on online platforms. Another important consideration is how AI technologies intersect with fundamental trademark principles. Traditionally, trademarks serve to identify the source of goods and services and to distinguish one business from another. Trademark law has typically focused on the "average consumer" a reasonably well-informed and observant individual. This approach assumes that consumers have limited opportunities to compare products directly and rely on memory or perception when making decisions.

With the advent of AI technologies, the landscape of shopping has shifted. AI assistants, search engines, chatbots, and online marketplaces now play a significant role in influencing consumer preferences. Consumers may rely on AI to guide their purchasing decisions or even conduct transactions automatically. This shift calls into question the traditional concepts of the "average consumer" and "likelihood of confusion," which were based on human memory and perception. Furthermore, the responsibility for trademark infringement involving AI technologies remains unclear. Although there is no established case law specifically addressing these issues, the case of "*Cosmetic Warriors and Lush v. Amazon.co.uk and Amazon EU*"<sup>19</sup> provides some insight. In this case, trademark infringement was found when Amazon's site displayed products similar to "Lush" in a way that could confuse consumers,

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even though these products were not sold on the site. This suggests that the extent of AI's involvement in consumer decision-making will be critical in determining liability in infringement cases.



<sup>18</sup> WIPO Conversation on IP and AI, Second Session, Revised Issues Paper on IP Policy and AI, p.12.
 <sup>19</sup> Cosmetic Warriors and Lush v Amazon.co.uk and Amazon EU [2014] EWHC 181 (Ch)



#### 6. Suggestions and Conclusion

#### 6.1. Suggestions

To effectively address the challenges posed by artificial intelligence (AI) and machine learning (ML) within the realm of intellectual property (IP) rights, several key reforms and strategies are suggested. First, IP laws should be revised to explicitly recognize AI as a potential inventor and author, accommodating the unique nature of AI-generated inventions and works. This could involve updating patent and copyright criteria to reflect the role of AI systems in innovation and creativity. Second, international collaboration is crucial to create a unified global framework that addresses the complexities of AI in IP. The World Intellectual Property Organization (WIPO) and other international bodies should spearhead efforts to harmonize IP standards across borders, ensuring consistent protection and enforcement. Third, policy reforms should focus on enhancing mechanisms to combat digital piracy, patent trolling, and trademark infringement in the digital age. This includes strengthening enforcement measures and adapting existing doctrines to better address the global and digital challenges. By implementing these suggestions, IP laws can better support innovation and ensure fair protection for both human and AI contributions.

#### 6.2. Conclusion

In conclusion, the intersection of artificial intelligence (AI), machine learning (ML), and intellectual property (IP) rights presents a rapidly evolving and complex challenge. Current IP frameworks, designed in a pre-digital era, are increasingly inadequate to address the nuances introduced by AI and ML technologies. This research highlights the urgent need for comprehensive reforms to update legal standards and ensure that IP rights effectively protect innovations in the digital age. By acknowledging AI's role in creation and innovation, harmonizing international IP laws, and enhancing enforcement mechanisms, we can foster a more dynamic and equitable IP environment. Such reforms are essential for balancing the interests of human creators and AI systems, ultimately promoting continued innovation and safeguarding intellectual property in an increasingly interconnected world.

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