

## The Impact of Artificial Intelligence on Intellectual Property Rights



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**Abstract:** *This paper critically examines the evolving effect of Artificial Intelligence (AI) on Intellectual Property (IP) rights. In a generation where AI technologies are unexpectedly advancing, conventional IP frameworks are challenged, necessitating a re-evaluation of legal norms. This paper begins by exploring the historical development of IP rights and the evolution of AI, supplying context for their present-day intersection. It delves into key regions together with the recognition of AI in growing copyrightable works, its role in patent innovations, and its impact on trademarks. A comparative evaluation of worldwide jurisprudence reveals the range in legal responses to these rising challenges. The paper similarly addresses the ethical implications and coverage issues springing up from the combination of AI into the area of IP, imparting insights into potential legal reforms. Through this comprehensive analysis, the objectives to provide a nuanced understanding of the complicated relationship between AI and IP rights, looking ahead to future legal tendencies and proposing recommendations for lawmakers and practitioners.*

**Keywords:** Intellectual Property (IP), Artificial Intelligence (AI), Intellectual Property Rights, World Intellectual Property Organization (WIPO).

### Introduction

The introduction of Artificial Intelligence (AI) has revolutionized numerous industries and elements of everyday life, presenting novel opportunities and demanding situations alike. This study's paper delves into the problematic relationship between AI and Intellectual Property (IP) Rights, exploring the transformative effect AI has on the legal

landscape of Intellectual property. Artificial Intelligence, once a realm of technology fiction, has turned out to be a tangible and influential pressure inside the current international. Its abilities vary from simple automation to complicated choice-making strategies, mimicking cognitive features traditionally attributed to human intelligence. AI's presence is ubiquitous, spanning various sectors such as

healthcare, finance, amusement, and beyond. The technology has not handiest stronger efficiency and productiveness but also sparked innovation in areas like information evaluation, predictive modelling, and personalized services. The improvement of AI technologies has increased at a brilliant pace, driven via improvements in system studying, neural networks, and information analytics (Upadhyay & Rathee, 2020). This rapid increase is fuelled by the exponential increase in computing energy and the provision of vast datasets. As AI structures turn out to be greater state-of-the-art, they increasingly contribute to creative and imaginative techniques, challenging the conventional barriers of human ingenuity. The intersection of AI and IP rights is a complicated and evolving vicinity of regulation, marked by using good-sized legal and philosophical questions. Intellectual belongings legal guidelines, designed to protect human creativity and innovation, at the moment, are confronted with creations and inventions generated by means of artificial intelligence.

This raises fundamental questions about the nature of authorship and inventorship in the age of AI. copyrights, patents, and trademarks. For copyrights, the question revolves around whether AI-generated works—ranging from art and music to literary works—can be protected, and if so, who holds the rights. In the realm of patents, the debate centers on whether AI can be recognized as an inventor and how the standard concepts of novelty and non-obviousness apply to AI-generated inventions. Trademarks, too, face new challenges as AI systems begin to create and use brand names and logos autonomously (Gribincea, 2020). This paper seeks to explore these challenges in-depth, examining how existing legal frameworks adapt to the novel realities presented by AI, and proposing forward-looking solutions that balance the promotion of innovation with the protection of intellectual property rights in an increasingly AI-driven world.

#### **METHODOLOGY:**

The methodology of this research paper is an interdisciplinary approach combining legal analysis, comparative study, and theoretical

evaluation. It starts with an intensive literature evaluation, encompassing educational articles, legal journals, and case regulation, to establish complete information of each the historical and current panorama of Intellectual Property (IP) regulation and Artificial Intelligence (AI) technology. This foundational know-how offers the context for the following felony analysis. The middle of the study includes a comparative legal evaluation, inspecting case regulations, statutes, and legal evaluations across diverse jurisdictions, together with the USA, the European Union, and key Asian international locations. This method lets in for information on the various and evolving legal responses to AI's impact on IP rights globally. The paper additionally engages in a detailed theoretical analysis, exploring legal and moral theories to interrogate the results of AI on ideas of authorship, inventorship, and ownership inside IP law. Additionally, the examination assesses modern-day and proposed guidelines and regulations regarding AI and IP. This entails analysing the effectiveness of existing frameworks and suggesting ability reforms to address emerging challenges. Where relevant, the research incorporates expert evaluations and insights from legal practitioners and teachers who specialize in IP law and AI, enriching the evaluation with sensible views. This methodological combination of legal overview, comparative evaluation, theoretical exploration, and policy assessment guarantees a multidimensional understanding of the tricky courting among AI and IP rights, aiming to provide a well-rounded, insightful, and forward-looking evaluation.

#### **HISTORICAL PERSPECTIVE OF (IP) RIGHTS**

This part of the study paper presents a foundational understanding of the historic evolution of Intellectual Property Rights and AI technologies, putting the stage for a deeper evaluation of their interplay. Intellectual Property Rights have advanced over centuries, reflecting society's popularity of the fee of creativity and innovation. The idea of protective intellectual creations dates back to ancient instances, however, the formalized system of IP

rights commenced taking shape throughout the Renaissance, in particular with the appearance of the printing press. This era witnessed the first copyright legal guidelines, aimed toward encouraging authors and publishers through granting exclusive rights to reproduce works (Sully, 1997). The Industrial Revolution in addition spurred the development of IP laws, spotting the need to guard innovations and designs. Patents were introduced as legal mechanisms to incentivize inventiveness with the aid of granting inventors exceptional rights to their inventions for a specific time. Similarly, trademarks emerged to become aware of and guard trademarks names and trademarks, critical in a hastily industrializing marketplace. Over time, international treaties and organizations, like the World Intellectual Property Organization (WIPO), were set up to harmonize IP laws throughout borders, reflecting the increasing globalization of exchange and trade

The concept of AI has its roots in the mid-20th century, but it's the recent advancements in computing power, algorithms, and data availability that have catapulted AI from theory to a pervasive reality. AI's journey began with simple programmed computers and has advanced to today's complex machine learning and deep learning models, capable of processing and learning from vast amounts of data. This evolution has led to AI's proliferation in various sectors, from autonomous vehicles and smart home devices to sophisticated medical diagnostics and personalized learning systems (Becker, 2017). The exponential growth of AI is not only a technological phenomenon but also a socio-economic one, influencing labour markets, privacy norms, and even cultural production.

### **Legal Definitions and Concepts of Intellectual Property**

Intellectual Property law comprises various categories, each with specific purposes and mechanisms. Copyrights, protect artistic and literary works, granting the creator exclusive rights to use, distribute, and adapt these works. The key principle is the expression of ideas, not the ideas themselves. Patents, protect inventions and discoveries if they are novel, non-obvious,

and useful. Patents grant inventors the right to exclude others from making, using, or selling their invention for a limited period. Trademarks, protect symbols, names, and slogans used to identify and distinguish products or services. The focus is on consumer recognition and protection against confusion or deception. Trade Secrets. Protect confidential business information from being disclosed or used without permission (Gruzdova, 2011). Understanding these fundamental concepts is crucial for analysing how AI challenges and reshapes the traditional notions of IP rights. The subsequent sections will delve into specific issues and cases where AI intersects with these IP categories, highlighting both the legal complexities and the need for potential reforms.

### **AI Innovations and IP Challenges**

This section of the paper explores the unique challenges that AI innovations pose to the traditional intellectual property framework, focusing on copyrights, patents, and trademarks. The emergence of AI as creators of artistic and literary works presents a paradigm shift in copyright law, which historically attributes rights to human authors. AI-generated works, such as paintings, music compositions, and literary texts, challenge the fundamental notion of 'authorship'. The key issues include, Authorship and Ownership, determining who holds the copyright for AI-generated works—is it the AI itself, the programmer, or the user who commissioned the work? This question challenges the traditional understanding of creativity and originality, which are central to copyright law. Assessing whether AI creations meet the originality and creativity standards set by copyright law. This involves re-evaluating the legal definitions of these terms in the context of AI. Economic Rights and Moral Rights, analyzing how rights such as reproduction, adaptation, and distribution apply to AI-generated works, and whether AI should have moral rights, such as the right to attribution and the right to integrity (Andreotta, 2021).

### **AI and Patents: Inventorship and Ownership Dilemmas**

AI's capability to invent or contribute to the

invention process raises significant questions in patent law, particularly concerning inventorship and ownership, AI as Inventors: Examining whether AI systems can be legally recognized as inventors. This challenges the traditional view that only humans can be inventors. Ownership of AI-Invented Patents, If AI can be an inventor, who owns the patent? Is it the AI developer, the AI user, or the AI itself? This issue intersects with corporate and contract law, adding layers of complexity. Novelty and Non-Obviousness Criteria, considering how the involvement of AI in the invention process impacts the assessment of a patent's novelty and non-obviousness, especially given AI's vast data-processing capabilities.

### **Trademarks in the Age of AI: New Frontiers and Concerns**

The use of AI in creating and managing brands introduces new considerations in trademark law. AI-Generated Trademarks, Understanding the implications of trademarks created by AI, including issues of distinctiveness and the potential for AI to analyze market trends to create highly effective trademarks. Use of Trademarks by AI, examining how AI's use of trademarks in online environments, such as in digital marketing, affects issues like trademark infringement and dilution.

Enforcement Challenges, Addressing the challenges in enforcing trademark rights in a digital landscape increasingly dominated by AI, including the identification of infringement and the applicability of traditional enforcement mechanisms. AI's role as a creator and innovator brings to light several unprecedented challenges in the realm of IP law. This section of the paper aims to dissect these challenges, offering a critical analysis of the current legal landscape and suggesting areas where legal doctrines may need adaptation or reformation to keep pace with technological advancements.

### **Discussion:**

In this segment, we take a look at key legal case instances and comparative jurisprudence to apprehend how exclusive legal structures are addressing the complex interaction between AI and IP rights. Notable Legal Cases Involving AI

and IP Rights Several landmark cases have set essential precedents in the realm of AI and IP rights. These cases offer insights into how courts are grappling with the radical demanding situations posed by AI:

1. **Thaler v. US Patent and Trademark Office (USPTO):** In this enormous case, the USPTO denied patents for innovations created via an AI device named DABUS, arguing that the handiest natural humans may be inventors. The decision was upheld by the U.S. District Court, emphasizing the human-centric nature of the current patent system (Fleming, 2007).
2. **The UK Intellectual Property Office's Decision on DABUS:** Similarly, in the UK, patent applications listing DABUS as the inventor were refused. The UK court emphasized that an 'inventor' must be a person, which was upheld by the Court of Appeal (*Dabus*, 2022).
3. **Warner Music's Copyright of AI-Generated Music:** Warner Music signed a deal with an AI-driven music creation startup, highlighting the commercial interest in AI-generated works and raising questions about the copyrightability of such creations.
4. **Google's 'Project Nightingale' and Data Privacy:** Although not a direct AI-IP case, Google's healthcare data collection project raises questions about the ownership and use of data, a key component in AI development, relevant to IP considerations (Schneble et al., 2020).

### **Comparative Analysis of Different Jurisdictions' Approaches**

Different jurisdictions have taken varied approaches to the challenges AI poses to IP rights. The US leans towards a traditional approach, emphasizing human involvement in the creative and inventive processes for IP rights. The cases reflect a reluctance to extend IP protections to AI-generated works without clear human authorship or inventorship.

The EU's technique is also conservative, similar to the United States, focusing on human creators and inventors. However, there's growing

discussion within the EU about adapting IP legal guidelines to accommodate AI innovations. Some Asian international locations are more open to thinking about AI's function in IP creation. For instance, Japan and South Korea are actively exploring legal reforms to address AI in IP law, doubtlessly spotting AI's position inside the innovative process. In contrast, a courtroom in Australia made a ground-breaking decision with the aid of accepting an AI system as an inventor for patent functions, although this decision is challenge to enchantment and does no longer yet represent a settled law. This comparative evaluation illustrates the diversity in legal responses to AI-associated IP problems across the globe. While some jurisdictions maintain a conventional stance, others are exploring more modern tactics, signalling a dynamic and evolving legal landscape. The results of these instances and the varying procedures of various jurisdictions will drastically influence future legal frameworks concerning AI and IP rights.

#### **AI-Generated Works and Copyright Law**

This section delves into the specific challenges posed by AI-generated works to copyright law, focusing on issues of authorship, ownership, and potential reforms. Authorship and Ownership of AI-generated content. AI-generated content, ranging from literary works to music and visual arts, challenges the traditional concept of authorship in copyright law, which typically requires a human creator. Key issues include: AI-generated works bring into question who, if anyone, should be considered the author. Is it the AI programmer, the user who inputs data into the AI, or the AI itself? This question challenges the conventional understanding of creativity and originality. If AI cannot legally hold copyright, then determining the rightful owner of the copyright becomes complex. The ownership could potentially be attributed to the AI developer, or the user, or be treated under a work-for-hire arrangement. Most current copyright laws do not directly address AI-generated creations, leaving a legal grey area. These frameworks typically require human authorship for copyright protection, effectively excluding purely AI-generated works. This

exclusion raises concerns about the protection and commercial exploitation of such works, which could stifle innovation and investment in AI-driven creative industries.

#### **Proposed Reforms and Theoretical Models**

To address these challenges, various reforms and theoretical models have been proposed. One is, Extending Copyright to AI: Some proposals suggest modifying copyright laws to recognize AI as authors or creators, although this raises philosophical and practical issues about the nature of creativity and the purpose of copyright. Second is Alternative Ownership Models, approach is to consider alternative ownership models, such as assigning rights to the AI operator or developer, or creating a new category of rights specifically for AI-generated works. Third is Compulsory Licensing Schemes: Implementing compulsory licensing schemes for AI-generated works could provide a way to use these works while ensuring fair compensation to rights holders. Fourth is Use of Existing Doctrines. Utilizing existing legal doctrines, such as joint authorship or work made for hire, might offer interim solutions, although they do not fully resolve all issues. The evolution of copyright law in the context of AI-generated works is a critical area of IP law that requires careful consideration. Balancing the hobbies of promoting innovation and creativity with the need to defend and incentivize human creators is essential for growing a strong and forward-searching legal framework. This segment of the paper ambitions to critically look at those demanding situations and explore potential pathways for legal evolution within the age of AI.

#### **Patenting AI Technologies**

This section explores the complexities surrounding the patentability of AI technology and AI-generated inventions, focusing on eligibility, inventorship, possession, and international perspectives. AI-generated inventions pose specific challenges to the traditional patent system. One of the Key issues is Eligibility Criteria. AI-generated innovations need to meet the same standards as human-made inventions, including novelty, non-obviousness,

and software. However, the involvement of AI inside the creative process increases questions about the software of those criteria. Another is Algorithm and Software Patents.

The patentability of AI algorithms and software is a contentious issue, with varying approaches across jurisdictions. The debate centres on whether these are abstract ideas or eligible subject matter.

### **The concept of inventorship and ownership in the context of AI is complex:**

AI as Inventors, Current patent laws are based on the premise that only humans can be inventors. Recognizing AI as an inventor would require significant legal changes.

Ownership Issues: Determining the owner of a patent for an AI-generated invention involves complex considerations, including the roles of the AI developer, the user, and potentially the AI itself. In United States the USPTO currently requires human inventorship, not recognizing AI as an inventor. European Union, The European Patent Office (EPO) has similar views, having rejected patent applications listing AI as an inventor (Verbandt & Vadot, 2018). Some jurisdictions like Australia have shown a more open stance, with courts considering the possibility of AI as inventors, although this remains an evolving area. The use of AI in branding and trademark creation also presents new legal challenges, AI can create logos, names, and other branding materials. This raises questions about the originality and distinctiveness of AI-generated trademarks.

### **Protecting AI-Generated Trademarks**

Determining whether AI-generated trademarks can be registered and protected under current laws is a complex issue, especially regarding the criteria of human creativity and distinctiveness.

AI's use in creating and disseminating brand materials online presents challenges in identifying and enforcing trademark rights, including issues of liability and jurisdiction in cases of infringement. In summary, the incorporation of AI into the fields of patents and trademarks is reshaping the landscape of intellectual property law. This section aims to

address the nuanced legal issues arising from AI's involvement in these areas, providing a comprehensive analysis of current challenges and potential legal adaptations required to accommodate this technological evolution

Ethical and Policy Considerations (*More on AI-generated Content*, 2023). This section addresses the ethical considerations and policy implications of integrating AI into IP law, suggesting ways to balance innovation with protection and offering policy recommendations.

### **Ethical Implications of AI in IP Law**

The integration of AI into IP law raises several ethical considerations are the following, one is Bias and Fairness, AI systems can perpetuate or even exacerbate biases present in their training data, raising concerns about fairness in IP-related decisions. Second is Transparency and Accountability. The often-opaque nature of AI algorithms poses challenges for accountability and transparency in IP processes, such as patent granting or copyright enforcement. Third, Impact on Creativity: There is an ongoing debate about whether AI enhances or diminishes human creativity, with significant implications for IP policies. Striking a balance between fostering innovation and protecting IP rights in the AI era is crucial. One is Encouraging AI Development. IP law should incentivize the development of AI technologies while ensuring fair competition and preventing monopolies. Other is Protecting Human Creators. Policies must ensure that the rights of human creators are not overshadowed by AI-generated works, maintaining a fair and equitable IP ecosystem (Kazim & Koshiyama, 2021).

Several policy proposals could help regulate AI in the context of IP. One, Updating Legal Definitions. Revising legal definitions to include or specifically address AI's role in creation and invention processes. Second, Creating New IP Categories. Considering the establishment of new IP categories or rights specifically tailored for AI-generated creations. Third, International Collaboration. Encouraging international cooperation to develop harmonized standards and approaches to AI and IP law.

## Future Trends and Predictions

This section explores the potential future trajectory of AI in the IP realm in the Evolving Role of AI in Intellectual Property. AI's role in IP is expected to grow, with increased use in creative processes, data analysis for IP strategies, and enforcement mechanisms.

Anticipating Future Legal Challenges and Opportunities, Legal system will in all likelihood face ongoing challenges in adapting to speedy technological advances, requiring continual reassessment and reform of IP laws (Hsieh et al., 2023). Lawmakers should interact in proactive reform, thinking about the technological, ethical, and monetary implications of AI in IP regulation. Practitioners need to stay knowledgeable about AI trends and traits, integrating this knowledge into their IP techniques and practices. The intersection of AI and IP law is a dynamic region, disturbing cautious consideration of ethical implications, policy adjustments, and ongoing legal reforms. This section targets to provide a roadmap for navigating these complex troubles, providing insights and guidelines for a destiny wherein AI plays an increasing number of significant roles in the IP domain.

## Results

This paper has explored the multifaceted effect of Artificial Intelligence (AI) on Intellectual Property (IP) rights, revealing several key findings (Zakir, Gul & Begum, 2020). AI as Creators, AI's function in creating content challenges traditional notions of authorship and possession in copyright regulation. AI and Patents, the potential of AI to contribute to or create inventions offers novel problems in patent law, especially regarding inventorship and possession. Trademarks and AI, AI's involvement in branding and trademark introduction introduces new complexities in trademark regulation. Ethical and Policy Considerations, the integration of AI into IP law raises important ethical concerns and needs nuanced policy responses. Legal and International Perspectives, there may be a significant variance in how different jurisdictions are addressing AI-related IP

troubles, reflecting various legal and cultural procedures.

## Conclusion

The intersection of AI and IP rights is an evolving landscape, marked by means of fast technological advancements and corresponding legal challenges. As AI continues to advance, it will undoubtedly continue to test the limits of current IP frameworks, necessitating ongoing legal adaptation and reform. Future IP laws will need to balance the promotion of innovation with the protection of rights in a way that is ethically sound and economically viable. The need for international collaboration in developing harmonized standards and regulations will become increasingly important to address the global nature of AI technology and IP rights.

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