

Article

Copyright and generative AI

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Abstract: This research investigates the relationship between Generative Artificial Intelligence (GAI), media content, and copyright laws. As GAI technologies continue to evolve and permeate various aspects of the media landscape, questions regarding the creation and protection of intellectual property have become paramount. The study aims to highlight the impact of GAI generated content, and the challenge it poses to the traditional copyright framework. Furthermore, the research addresses the evolving role of copyright laws in adapting to the dynamic landscape shaped by artificial intelligence. It investigates whether existing legal frameworks are equipped to handle the complexities introduced by GAI, or if there is a need for legislative and policy reforms. Ultimately, this research contributes to the ongoing discourse on the intersection of GAI, media, and copyrights, providing insights that can guide policymakers, legal practitioners, and industry stakeholders in navigating the evolving landscape of intellectual property in the age of artificial intelligence.

Keywords: artificial intelligence; generative AI; media content; copyright; intellectual property; AI-generated content

1. Introduction

Artificial Intelligence (AI), and more specifically Generative Artificial Intelligence (GAI), was initially celebrated as the most groundbreaking technology since the advent of the smartphone. Users of GAI are estimated to increase exponentially over the coming years and reach a global market of \$1.5 billion by 2028 (Markets and Markets, 2023).

The emergence of GAI (Mannuru et al., 2023) in the digital age has completely changed the creative content creation environment, offering copyright law both enormous benefits, such as analyzing large datasets in a short period of time, as well as significant obstacles, which include ethical considerations from the usage of AI. Further, the convergence of GAI with copyright presents difficult and contentious issues about ownership, authorship, and the very nature of creative expression, rather than democratizing creativity and expediting the content creation processes. Usage of AI is an impending phenomenon and therefore we should not strive to avoid it but nations should come together to agree on common grounds to regulate it.

The term “Generative Artificial Intelligence” describes systems that can create creative works, such as writings, photos, music, and videos, on their own that are frequently identical to works produced by humans.

With GAI blurring the boundaries between human and machine-generated work (Aldweikat, 2022; Kanan et al., 2019), the established paradigm of copyright law—which was created to protect the intellectual property rights of human creators—faces a daunting challenge. The major puzzle in this situation is the concept of authorship, which was formerly associated with human agency and creativity but has been clouded

by AI systems' independent ability to produce unique works. The basic tenets of copyright, which usually offer authors exclusive rights as a means of encouraging their creative pursuits, are being called into question by this blurring of authorial boundaries (Hayes, 2023; Samuelson, 2023).

Furthermore, the rise of GAI highlights broader ethical and societal concerns (Abdallah and Salah, 2024), including issues of misinformation, and algorithmic bias. As GAI systems autonomously produce content based on vast datasets, they risk perpetuating and amplifying existing biases encoded within those datasets, thereby exacerbating inequalities and perpetuating harmful stereotypes. However, GAI has increasingly come under scrutiny for infringing IP rights which encompass, amongst other things, copyrights.

This article explores the legal issues surrounding infringing copyright laws as well as authorship issues and is divided into four sections, each focusing on different aspects of GAI and its implications for copyright law. Firstly, this article explores the challenges and controversies surrounding the use of copyrighted material in AI-generated content, highlighting the legal disputes involving OpenAI and ChatGPT. The global perspective on AI copyright policies is discussed, with a focus on the EU Artificial Intelligence Act, Canada's Digital Charter Implementation Act, and the USA's Copyright Office initiatives. The article also addresses the complex issue of copyright protection for works created by AI, examining relevant legal rulings and debates. Finally, the article concludes with recommendations for enhancing copyright protection mechanisms, promoting transparency and accountability, and encouraging collaboration among stakeholders to address the challenges posed by AI and copyright law.

2. Materials and methods

The research employs a multi-faceted approach, combining legal analysis, technological examination, and industry case studies. Through an exploration of artificial intelligence generated content, automated content curation, and machine learning applications in media, the study aims to identify potential copyright issues arising from the involvement of GAI in the creative process. Additionally, it delves into the legal implications and ethical considerations surrounding the ownership and protection of GAI-generated works.

3. Open AI and ChatGPT

Generative Artificial Intelligence (van der Zant et al., 2013) refers to a subset of artificial intelligence technologies that can autonomously produce original content such as images, texts, music, and videos. Unlike traditional AI systems that are primarily used for classification or prediction tasks, generative AI models are designed to generate new data based on patterns learned from large datasets. These models typically utilize deep learning techniques, particularly generative adversarial networks (GANs) or autoregressive models (Karthika and Durgadevi, 2021), to generate realistic and coherent outputs.

Further, one of the key mechanisms behind the generative nature of AI is its ability to learn complex probability distributions from training data and then sample

from these distributions to produce new content. For instance, in the case of text generation, an AI model might be trained on a corpus of text data and learn the statistical relationships between words and sentences. Once trained, the model can then generate new text by sampling from this learned distribution of words and sentences, often producing output that is grammatically correct and contextually relevant (Fui-Hoon Nah et al., 2023)

ChatGPT, specifically, is a type of generative AI model developed by OpenAI. It is based on the transformer architecture, a deep learning model architecture that has shown remarkable performance in natural language processing tasks. ChatGPT operates by processing input text and generating responses based on the context provided. It employs a variant of the transformer architecture known as the GPT (Generative Pre-trained Transformer) model, which is pre-trained on vast amounts of text data to learn the nuances of human language (Wu et al., 2023).

The mechanism behind ChatGPT involves several key components, including self-attention mechanisms, multi-head attention mechanisms, and feedforward neural networks. These components work together to encode input text into a high-dimensional representation, process it through multiple layers of transformation, and decode it into output text. Through the process of training on large text corpora and fine-tuning on specific tasks, ChatGPT learns to generate human-like responses that are coherent, contextually appropriate, and stylistically consistent (Briganti, 2023).

4. ChatGPT copyright concerns

ChatGPT Copyright concerns include utilizing copyrighted data when training AI material, producing copyrighted material when generating content, the lack of clarity over who would be liable when copyrighted material is infringed, as well as determining the authorship and ownership of GAI.

Training ChatGPT relies on training its AI model on vast amounts of text data which includes copyrighted material. Further, Open AI has claimed that it is impossible to have an AI tool as advanced as ChatGPT without infringing copyright material and that training material fed into its GPT-4 model is protected material (Milmo, 2024). This in many instances results in producing copyrighted material within the material generated.

Consequently, in cases of infringement, determining liability can be complex, potentially involving the AI program's creator, the platform, or the content publisher. Legal frameworks in countries like the US, South Korea, and Japan aim to protect publishers from AI copyright infringement, promoting innovation while addressing the challenges of proving infringement and the evolving legal landscape surrounding AI-generated content (Hisashi, 2023).

Additionally, John Grisham, and George R. R. Martin are amongst a total of 17 authors that have brought claims against Open AI's ChatGPT over copyright infringement (Alter and Harris, 2023). The authors have described that ChatGPT has disseminated copyrighted material without referencing the authors' works. Further, the New York Times has also brought a claim against Open AI as well as Microsoft where the overarching comments are that ChatGPT is not only using copyrighted material but also misquoting or fabricating information that has not been used by the

New York times 14.

Open AI has sought licensing deals with publishing companies (Ghaffary, 2024), yet this has not prevented authors as well as news outlets from bringing claims against Open AI (Lucchi, 2023). The licensing deals that Open AI is actively seeking with publishers has been turned into a bidding war, where comparisons have been made between the deal that Open AI has struck with Axel Springer and other publishers (Hyscaler, 2024).

The primary goal of these licensing efforts is to legitimize ChatGPT's operations and ensure transparency in its content generation processes. OpenAI's proactive approach to licensing aims to address the legal and ethical complexities associated with the use of copyrighted material in AI-generated content, while also encouraging cooperation and trust with content creators and publishers.

5. Global AI copyright policies regulating AI machines

Globally, countries have been hesitant to set AI regulations. Developed countries, where paradoxically AI technology was predominantly generated, have been reluctant to set clear guidelines. Instead, there has been a tendency to rely on general provisions to address copyright concerns related to AI-generated content. This hesitancy reflects the complexity and rapidly evolving nature of AI technology, as well as the challenges in balancing innovation with intellectual property protection. For instance, Europe, the U.S., Canada and the UK have had varying degrees of response to AI.

The European Union (EU) has led the way and taken a step forward with finally enacting the EU Artificial Intelligence Act (EU News, 2024). This legislation emphasizes the importance of transparency provisions of AI usage, particularly for developers who train AI systems. This Act mandates that developers ensure the effective use of copyrighted material, promoting ethical and responsible AI development while safeguarding intellectual property rights. This move reflects the EU's commitment to establishing a regulatory framework that addresses the unique challenges posed by AI technology.

Similarly, Canada has also introduced measures to address AI and copyright. The Digital Charter Implementation Act, 2022, through its component, the Artificial Intelligence and Data Act (AIDA) (Canada's Government, 2022), sets out a framework for the regulation of AI in Canada. AIDA aims to build trust in AI development and deployment by mandating that high-impact AI systems are developed and used responsibly. AIDA includes measures to mitigate risks of harm and bias, ensuring that AI technology is harnessed in a manner that aligns with ethical and social standards. However, this act will not come into force until 2025, indicating a phased and cautious approach to AI regulation.

In comparison the U.S. Copyright Office has been actively engaging with the topic of AI and its implications for copyright law. Whilst the U.S.'s approach has not been as robust as the EU in introducing legislation or outright measures the U.S. launched initiatives to examine how copyright law applies to works created with the assistance of AI (US Copyright Office, 2023).

The U.K. has even played a lesser role in enacting any policies which deal with AI and copyright as there has not been specific legislation enacted solely in response

to copyright and AI. However, the Intellectual Property Office's consultations and research into the implications of AI on intellectual property rights demonstrate a commitment to exploring the issue (U.K Government, n.d.). The aim is to inform potential future policy developments or legislative amendments that might be necessary to address the complexities introduced by AI in the copyright domain.

In comparison, developing countries have been more welcoming of AI legislation. For instance, Jordan introduced its Artificial Intelligence Policy in 2020. The Jordan Artificial Intelligence policy is a piece of legislation that aims to regulate the development and use of artificial intelligence in the country. The policy includes provisions for the establishment of a regulatory body to oversee the development and use of AI, as well as measures to ensure the transparency and accountability of AI systems. The policy also addresses issues related to data privacy and security, as well as the potential impact of AI on employment and job displacement.

6. Attribution

While various jurisdictions have implemented rules and guidelines regarding transparency in AI usage, there remains a gap in protecting copyrighted information. Many outlets and academic journals lack AI-related copyright detection models, leading to a situation where authors are now being asked to disclose whether AI has been utilized in generating content (Botpress Community, 2023).

This highlights the ongoing struggle to develop effective mechanisms for safeguarding intellectual property in the age of AI and that there exists a gap between legislations and the reality of dealing with copyright.

7. Works created by AI

Whilst generative AI creations have been the subject of numerous lawsuits, as mentioned above, another situation arises whereby generative AI is constantly in training to become an original creator. Could this mean that generative AI creations could become copyrighted?

Under current copyright law in many jurisdictions, copyright protection is granted to "original works of authorship" that are fixed in a tangible medium of expression. This definition typically requires human authorship or a human creative contribution for copyright protection to apply. However, as generative AI systems continue to advance, the degree of human involvement in the creative process becomes increasingly blurred. Generative AI models learn from vast datasets and autonomously generate new content based on learned patterns, as mentioned above, often without direct human intervention in the creation of each individual work.

Considering these technological advancements, there have been debates about whether AI systems themselves could be considered authors deserving of copyright protection. Some argue that granting copyright to AI-generated works could incentivize further innovation in AI research and development, while others express concerns about the implications for traditional notions of creativity and authorship.

Additionally, the question of ownership of AI-generated works adds another layer of complexity. In scenarios where generative AI systems are owned and controlled by individuals or organizations, determining the rightful owner of the

copyright becomes a legal challenge. Should the copyright belong to the creator of the AI model, the owner of the hardware and software used to train the model, or the entity that provided the training data?

Furthermore, issues of liability and accountability may arise in cases where AI-generated content infringes upon the copyrights of existing works or violates intellectual property laws. Without clear legal frameworks in place to address these complexities, navigating the legal landscape surrounding AI-generated content remains fraught with uncertainty.

8. How could AI generated content be subject to copyright regulation

The Dabus rulings (Barqawi, 2023), which involved patent applications filed by an AI system named Dabus, indeed shed light on the complexities surrounding the attribution of intellectual property rights to AI-generated creations. In these rulings, patent offices in various jurisdictions, including the United States and Europe, rejected the patent applications on the grounds that the inventor named in the applications must be a natural person, rather than an AI system. Whereas rulings in South Africa and Australia have registered Dabus as the inventor (Schwartz, 2021).

Regulating AI for copyright, similar to the DABUS ruling for patents, involves addressing several key considerations and potential approaches. Traditionally, copyright laws recognize human authorship, which necessitates a redefinition of creativity and originality when works are generated by non-human entities. This redefinition raises questions about authorship and ownership, as recognizing AI as a creator implies complex legal scenarios about who holds the copyright. These scenarios could involve the developer of the AI, the user who instructed the AI, or potentially the AI itself. Additionally, moral rights, which include the right to attribution and integrity, are intrinsically linked to human creators (Miernicki and Ng, 2021). In the context of AI-generated works, these rights might need to be reinterpreted or even excluded, presenting a significant challenge to traditional copyright frameworks.

To address these challenges, legislative amendments are a necessary approach. Similar to the DABUS ruling for patents, legislative bodies could amend copyright laws to explicitly recognize AI-generated works, defining AI as an author and establishing guidelines for ownership and rights management. Introducing new licensing models specific to AI-generated works could help manage ownership and usage rights, involving agreements between AI developers, users, and content distributors. Alternatively, a hybrid authorship model could be considered, where AI-generated works are co-authored by the AI and the human operator, providing a balanced solution that acknowledges both the AI's contribution and human oversight. Developing industry standards and best practices for AI-generated content would offer guidance and consistency in how these works are treated, requiring collaboration between legal experts, technologists, and industry stakeholders. Furthermore, given the global nature of intellectual property, international cooperation and harmonization of laws regarding AI-generated works are beneficial, with organizations like WIPO playing a crucial role in facilitating discussions and agreements.

The practical application of these approaches can be illustrated in various scenarios. For instance, AI-generated music and art could be recognized under copyright laws, allowing AI to be credited as the creator, with the rights managed by the developer or user. Similarly, AI-written books and articles could follow comparable principles, where the AI's contribution is acknowledged, and copyright is assigned based on predefined agreements. However, these approaches face significant challenges. Defining creativity in the context of AI-generated works is complex and requires a nuanced understanding of both AI capabilities and creative processes. The lack of legal precedents makes it difficult to predict how courts might rule on such cases, and the ethical implications of recognizing AI as an author need careful consideration, particularly concerning the impact on human creators.

While these rulings specifically pertain to patent law rather than copyright law, they highlight similar fundamental questions regarding the attribution of creative works to AI systems. The rejection of the patent applications suggests a reluctance within current legal frameworks to recognize AI systems as legal entities capable of holding intellectual property rights and stresses upon the human aspect of creation.

Furthermore, examining relevant US cases provides additional insight into the legal treatment of AI-generated content. In cases such as *Naruto v. Slater*, involving a dispute over the copyright of “monkey selfies” taken by a macaque using a photographer’s camera, US courts have consistently held that copyright protection extends only to works created by human authors. In the *Naruto* case, the court ultimately ruled that animals, including non-human primates, cannot hold copyrights under US law (Abdallah and Salah, 2024).

These rulings highlight the prevailing legal stance that copyright protection is contingent upon human authorship or creative input. While AI systems may play a role in the generation or facilitation of creative works, they are not recognized as legal entities capable of holding copyrights themselves. Instead, copyright law typically attributes authorship and ownership to the individuals or entities responsible for creating or deploying the AI systems.

Therefore, it can be inferred that, based on existing legal precedents and interpretations, AI’s creations cannot be copyrighted. Instead, copyright protection continues to be reserved for human-authored works, while the role of AI in the creative process may implicate issues of ownership, liability, and attribution within the existing legal framework. As AI technology continues to advance, ongoing legal and policy debates will shape the future landscape of intellectual property law in the context of AI-generated content. Furthermore, Copyright Law should regulate AI to some extent to protect the interests of creators and incentivize innovation. However, these regulations must be carefully crafted to address the unique challenges posed by AI-generated content and ensure a fair balance between protection and accessibility.

Special arrangements for AI in digital media, thus, are necessary to address the unique challenges and opportunities presented by these technologies. By establishing clear, flexible, and forward-looking regulations, we can ensure that AI is used responsibly and ethically while promoting innovation and protecting the rights of all stakeholders involved.

Key considerations include defining AI-generated content, establishing rules on ownership and authorship, ensuring transparency and accountability, creating

adaptable legal frameworks, and fostering international cooperation. These measures will help manage the unique challenges posed by AI, promote responsible and ethical use, and ensure the protection and fair treatment of all stakeholders involved.

9. Recommendations

In light of the discussion, the authors propose the following recommendations that should be taken into consideration when attempting to tackle the complicated issues of AI and copyright:

- Enhancing copyright protection mechanisms

Given the acknowledgment from OpenAI regarding its utilization of copyrighted material (Merchant, 2024), it becomes imperative to reinforce copyright protection mechanisms. Policymakers should explore avenues to strengthen enforcement measures and ensure that copyright laws are robustly upheld, thereby safeguarding the rights of creators and content owners.

- Promoting transparency and accountability

OpenAI's admission highlights the importance of transparency regarding the use of copyrighted material by AI systems. Establishing clear guidelines and disclosure requirements for organizations utilizing AI technology can enhance accountability and foster responsible behaviour in the management of copyrighted content. These would be akin to South Africa's and Australia's approach in the Dabus ruling.

- Facilitating collaboration between stakeholders

Collaboration between AI developers, content creators, legal experts, and policymakers is essential to navigate the complexities surrounding copyright protection in the age of AI. Encouraging dialogue and cooperation among these stakeholders can lead to the development of pragmatic solutions that balance innovation with the protection of intellectual property rights. This could be achieved through establishing a central hub similar to WIPO which can facilitate and organise collaborations related to copyright and AI related matters.

- Implementing periodic legislative reviews

Recognizing the rapid pace of technological advancements and the expansive nature of AI-generated content, periodic reviews of copyright legislation are imperative. These reviews should aim to assess the adequacy of existing laws in addressing emerging challenges posed by AI technology and explore avenues for legislative reforms that accommodate evolving creative practices.

- Investing in research and development

Investing in research and development initiatives focused on the intersection of AI, copyright law, and digital content creation can yield valuable insights and innovative solutions. Funding research projects aimed at understanding the implications of AI on copyright protection and exploring novel approaches to address emerging challenges is essential to inform evidence-based policymaking.

- Educating stakeholders and the public

Comprehensive education and awareness campaigns targeting both stakeholders and the general public are essential to foster understanding of copyright issues related to AI-generated content (Abooraig et al., 2018). Providing accessible resources, training programs, and public forums can empower individuals to navigate copyright

laws responsibly and ethically in the digital era.

The underlying theme of these recommendations involves staying informed into AI related matters. This aspect could be achieved through introducing information technology into the classroom at a much earlier stage and throughout career and education paths. Furthermore, there should be a unified international approach towards copyright which will explain necessary terms such as transparency and accountability when it comes to AI generated content.

By implementing these recommendations, policymakers can work towards achieving the goal of copyright protection in the context of AI-generated content, ensuring that intellectual property rights are upheld while fostering innovation and creativity in the digital landscape.

10. Conclusion

In conclusion, the dynamics which exist between copyright law and GAI poses significant challenges for existing legal frameworks across the globe. The rapid advancements in AI technology have brought to the forefront the need to reevaluate intellectual property rights, especially in the context of copyright. Efforts in the European Union, Canada, the United States, and the United Kingdom demonstrate a growing awareness and proactive approach to addressing these challenges through legislative initiatives, regulatory measures, and research. However, the technology is advancing faster than the legislation set forth.

The necessity for legislative and policy reforms is clear as current legal frameworks may not be adequately equipped to manage the unique aspects of AI-generated content. Legislative frameworks have, thus far, focused on establishing legal ethics to regulate AI its users and developers and have not established mechanisms to deal with AI generated works. Striking a balance between safeguarding intellectual property rights and promoting innovation in AI technology is crucial. As AI continues to transform the creative and intellectual landscape, it is imperative that copyright laws evolve in tandem to ensure their relevance and effectiveness in this rapidly changing digital era.

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