

Navigating the Evolution: Artificial Intelligence and the Globally Shifting Landscape of Copyright Principles

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ABSTRACT

The growing autonomy of artificial intelligence (AI) systems in generating creative content and valuable inventions poses significant challenges in attributing intellectual property rights (IPR), such as patents and copyrights, to AI-generated outputs. Existing IPR frameworks globally, including those in India, did not anticipate a situation where machines independently produce protectable subject matter. With the ongoing expansion of AI's generative capabilities, India's legal system and its jurisprudence on IPR are facing considerable challenges. This research focuses on the impact of artificial intelligence on copyright law, shedding light on the uncertainties surrounding the grant of copyright to AI-generated and AI-assisted works. Numerous questions persist regarding the originality of such works, creating a legal environment that lacks clarity. The paper explores and evaluates how adjustments to the regulatory framework may be necessary to strike a balance between fostering AI innovation and protecting the interests of creators.

Keywords: Artificial Intelligence, copyright, challenges

INTRODUCTION

The increasing influence of Artificial Intelligence (AI) in diverse sectors such as medicine, transportation, entertainment (including music, art, games, and films), and various other fields has significantly reshaped our daily lives. This transformation extends to the legal realm, particularly Intellectual Property Rights (IPR). AI's escalating role in fostering creativity and innovation is acknowledged globally, with a notable impact on copyright, patents, designs, and trade secrets among various IPR categories. Today, AI is involved in composing music, generating written content like blogs, novels, and poetry, creating paintings, and even producing award-winning photographs. While this extensive integration of technology brings about numerous benefits, it simultaneously raises critical questions about authorship, copyright infringement, and the boundaries of creative expression.

Copyright protection traditionally serves as an incentive for authors to produce creative works, reflecting their skills, labor, and judgment. Recognizing AI as an author and affording copyright protection to AI-generated works raises the prospect of placing "human creativity" and "machine creativity" on equal footing. Conversely, if AI-generated works are excluded from copyright protection, it implies a preference for human creativity over machine-generated creativity. Striking a balance between the two is essential to avoid stifling human creativity in the long term. Acknowledging AI as an author may introduce challenges such as flaws, toxic language, obscenity, and defamation in AI-generated works. Civil law countries like Germany, France, and Spain, emphasizing the "imprint of the author's personality" in works, raise questions about how legal principles such as fair use, authorship, and copyright infringement will be applied to content created and utilized by AI. This paper seeks to explore and address these intricate questions.

WHAT IS ARTIFICIAL INTELLIGENCE

History

A very common question that is being asked these days is that what artificial intelligence is. However up and coming this topic might sound AI's history goes back to the 20th century. In the first half of the 20th century, science fiction familiarized the world with the concept of artificially intelligent robots. It began with the "heartless" Tin man from the Wizard of Oz and continued with the humanoid robot that impersonated Maria in Metropolis. By the 1950s, we had a generation of scientists, mathematicians, and philosophers with the concept of artificial intelligence culturally assimilated in their minds.¹ The first person to actually explore the possibility of AI was Alan Turing. He was a British scholar who set his journey on exploring the mathematical possibility of AI. His quest towards the fact 'when humans can think and rationally solve problems then why can't machines

¹ <https://sitn.hms.harvard.edu/flash/2017/history-artificial-intelligence/> last visited on 12.12.2023.

do so', lead him to write his celebrated work, "Computing Machinery and Intelligence" in 1950. It was in this paper that brought the Turing Test to the world of artificial intelligence and machine learning. Turing took the help of 'the imitation game' to explain how machines can think. An example goes as follows:

"It is played with three people, a man (A), a woman (B), and an interrogator (C) who may be of either sex. The interrogator stays in a room apart from the other two. The object of the game for the interrogator is to determine which of the other two is the man and which is the woman. He knows them by labels X and Y, and at the end of the game he says either "X is A and Y is B" or "X is B and Y is A." The interrogator is allowed to put questions to A and B thus: C: Will X please tell me the length of his or her hair? Now suppose X is actually A, then A must answer. It is A's object in the game to try and cause C to make the wrong identification. His answer might therefore be: "My hair is shingled, and the longest strands are about nine inches long."²

Turing then asked the question, "What will happen when a machine takes the part of A in this game?" Will the interrogator decide wrongly as often when the game is played like this as he does when the game is played between a man and a woman?" These questions replace the original question we started with i.e., "Can machines think?"³ This is known as Turing Test.

The basic idea of the Turing Test is simple: a human judge engages in a text-based conversation with both a human and a machine, and then decides which of the two they believe to be a human. If the judge is unable to distinguish between the human and the machine based on the conversation, then the machine is said to have passed the Turing Test.⁴ Basically, a machine passes the Turing Test if it can impersonate a human.

The concept of Artificial Intelligence is different from that of machine learning. Artificial intelligence refers to the general ability of computers to emulate human thought and perform tasks in real-world environments, while machine learning refers to the technologies and algorithms that enable systems to identify patterns, make decisions, and improve themselves through experience and data.⁵

Definitions and traits of an AI

To properly define artificial intelligence is not as easy as asking the question. To understand and define AI, firstly "intelligence" has to be understood. Intelligence might be defined as the ability to learn and perform suitable techniques to solve problems and achieve goals, appropriate to the context in an uncertain, ever-varying world.⁶

The term Artificial Intelligence was coined in 1955 by John McCarthy, a Stanford Professor. He defined it as "the science and engineering of making intelligent machines". Much research has humans program machines to behave in a clever way, like playing chess, but, today, we emphasize machines that can learn, at least somewhat like human beings do.⁷

Traits:

Capable of predicting and adapting, AI uses algorithms that discover patterns from huge amounts of information. Makes decisions on its own, AI is capable to augment human intelligence, deliver insights and improve productivity.

Continuous learning, AI uses algorithms to construct analytical models. From those algorithms, AI technology will find out how to perform tasks through innumerable rounds of trial and error.

AI is forward-looking, AI is a tool that allows people to reconsider how we analyze data and integrate information, and then use these insights to make better decisions.⁸

AI is hence not as modern as we take it to be. AI and its creativity started from the first chatbot program, ELIZA, continued by IBM's chess computer, Apple's Siri and OpenAI.

² <https://redirect.cs.umbc.edu/courses/471/papers/turing.pdf> last visited on 13.12.2023

³ *Ibid*

⁴ *Ibid*

⁵ <https://ai.engineering.columbia.edu/ai-vs-machine-learning/> last visited 23.12.2023

⁶ <https://hai.stanford.edu/sites/default/files/2020-09/AI-Definitions-HAI.pdf> last visited on 24.11.2023

⁷ *Ibid*

⁸ https://www.researchgate.net/publication/332548325_Artificial_Intelligence_Definition_Ethics_and_Standards#:~:text=Artificial%20Intelligence%20or%20sometimes%20called,learning%2C%20planning%20and%20problem%20solving. Last visited on 01.01.2024

INTERSECTION OF AI AND COPYRIGHT

AI has penetrated in every sphere of our lives and the creative world of artists is no exception to its impact. The intersection of AI and copyright come into existence as AI generated work has gained the ability to imagine, create and innovate. Traditionally, it was only humans who were intelligent enough to innovate and create but due to immense technological advancement, especially in the field of computer science, machines have been made equally, if not more, intelligent than human beings. Audiocraft, Boomy, ChatGPT, Watson, etc. are the perfect examples of conflict between AI and principles of copyright law; it is not only these but plethora of other platforms which create music, movie trailers, write novels and articles and paint pictures. This mushroom growth of Generative-AI⁹ companies has forced legal thinkers and philosophers to revisit the definitions, laws and practical aspects of the principles of copyright, authorship and infringement thereof.

Definitions of Copyright across Major Nations:

Title 17 of the United States Code defines copyright as a type of intellectual property that protects original works of authorship as soon as an author fixes the work in a tangible form of expression. The US Copyright Office clearly states that “works are original when they are independently created by a human author and have a minimal degree of creativity.”¹⁰

Section 9(3) of The Copyright, Designs and Patent Act of 1988 (United Kingdom) lays down the follows:

“In the case of a literary, dramatic, musical or artistic work which is computer-generated, the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken.”

Section 178 of the CDPA, has defined computer-generated work, as “generated by computer in circumstances such that there is no human author of the work”.

It is also to be noted that the European Union copyright law contains 13 directives and 2 regulations when it comes to copyright protection. Currently the copyright law in EU is governed by the EU Copyright Directive (Directive 2019/790/EU) which was adopted in April, 2019. It clearly states that:

“Rapid technological developments continue to transform the way works and other subject matter are created, produced, distributed and exploited. New business models and new actors continue to emerge. Relevant legislation needs to be future-proof so as not to restrict technological development. The objectives and the principles laid down by the Union copyright framework remain sound. However, legal uncertainty remains, for both rightholders and users, as regards certain uses, including cross-border uses, of works and other subject matter in the digital environment. As stated in the Commission Communication of 9 December 2015 entitled ‘Towards a modern, more European copyright framework’, in some areas it is necessary to adapt and supplement the existing Union copyright framework, while keeping a high level of protection of copyright and related rights. This Directive provides for rules to adapt certain exceptions and limitations to copyright and related rights to digital and cross-border environments, as well as for measures to facilitate certain licensing practices, in particular, but not only, as regards the dissemination of out-of-commerce works and other subject matter and the online availability of audiovisual works on video-on-demand platforms, with a view to ensuring wider access to content. It also contains rules to facilitate the use of content in the public domain. In order to achieve a well-functioning and fair marketplace for copyright, there should also be rules on rights in publications, on the use of works or other subject matter by online service providers storing and giving access to user-uploaded content, on the transparency of authors' and performers' contracts, on authors' and performers' remuneration, as well as a mechanism for the revocation of rights that authors and performers have transferred on an exclusive basis.”¹¹

Irish Copyright and Related Act, 2000 states that

“21. (f) in the case of a work that is computer-generated, the person by whom the arrangements necessary for the creation of the work are undertaken;”.

Section 14 of The Copyright Act, 1957 of India states that:

“For the purposes of this Act, “copyright” means the exclusive right subject to the provisions of this Act, to do or authorise the doing of any of the following acts in respect of a work or any substantial part thereof, namely:—

- (a) in the case of a literary, dramatic or musical work, not being a computer programme,—
 - (i) to reproduce the work in any material form including the storing of it in any medium by electronic means;
 - (ii) to issue copies of the work to the public not being copies already in circulation;

⁹ McKinsey defines Generative AI as algorithms that can be used to create new content, including audio, code, images, text, simulations, and videos.

<https://www.mckinsey.com/~media/mckinsey/featured%20insights/mckinsey%20explainers/what%20is%20generative%20ai/what%20is%20generative%20ai.pdf> last visited on 01.12.2023.

¹⁰

<https://www.copyright.gov/what-is-copyright/#:~:text=Copyright%20is%20a%20type%20of,a%20tangible%20form%20of%20expression.> Last visited on 13.11.2023.

¹¹ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0790> last visited on 05.01.2024.

...
(iii) to communicate the sound recording to the public.”

Currently, no work created by solely by AI is subject to copyright. The root of this issue lies in the way generative AI systems are trained. Like most other machine learning models, they work by identifying and replicating patterns in data. So, in order to generate an output like a written sentence or picture, it must first learn from the real work of actual humans.¹² From a legal standpoint, AI systems, such as image generators, AI music generators, and chatbots like ChatGPT and LaMDA, are not recognized as the creators of the content they generate. The resulting outputs essentially represent a collection of human-created elements, often sourced from the internet, where much of the content is subject to copyright protection in various forms. A work of art created by artificial intelligence without any human input cannot be copyrighted under U.S. law, a U.S. court in Washington, D.C., has ruled. Only works with human authors can receive copyrights, U.S. District Judge Beryl Howell said on Friday, affirming the Copyright Office's rejection of an application filed by computer scientist Stephen Thaler on behalf of his DABUS system.¹³

Like DABUS, the Indian Copyright Office mistakenly recognised an AI named RAGHAV as the co-author of an artistic work and registered the application for copyright protection.¹⁴ In the initial filing, Ankit Sahni, the creator of the AI system RAGHAV, faced a rejection from the copyright office when attempting to list the AI system as the exclusive author of a work. Subsequently, the copyright office issued a notice requesting the withdrawal of the registration, acknowledging its mistake in granting the registration. Mr. Sahni, the human co-author, was then called upon to consider the legal status of the AI system RAGHAV. Despite the notice, the application status still shows as 'registered' on the copyright office's website. The resolution of this matter awaits a decision from the court. Scholars in Europe have the same stand on granting copyright to AI generated work. Dr Trapova states that, at the end of the day, copyright aims to protect human creations. Therefore, attempting to have artificial intelligence (based, broadly speaking, on mathematical algorithms) be the creator of art, contradicts with the roots of copyright law. Humans are not mathematical, as emotions, mistakes and imperfections are involved in their creative process and that is where the subsistence of copyright lies.¹⁵

In an effort to address the concerns of creators and mitigate the potential risks of copyright infringement associated with artificial intelligence (AI) developers and users, the Agency for Cultural Affairs, Government of Japan, organized panels at the Legal System Subcommittee of the Copyright Committee. These panels convened on both July 26, 2023, and September 5, 2023, with the primary objective of identifying and addressing issues related to generative AI and its implications on copyrights. To answer the question as to are AI generated products copyrightable¹⁶ the panel answered that autonomously generated products by AI, lacking human involvement, typically do not meet the criteria for copyright protection. However, products generated by humans using AI, where there are intentional and creative contributions, are more likely to be considered eligible for copyright protection. An unresolved matter pertains to specifying the criteria for "creative contributions" in a more detailed and precise manner. Defining the extent and nature of human input in the creative process remains an ongoing challenge in the context of AI-generated content and copyright law.

Influence of AI on copyright industry:

AI has significantly influenced the copyright industry across different dimensions. It is not a national influence but an international one; all the nations are facing the same questions when it comes to interplay of AI with copyright. Here are some key aspects illustrating how AI is impacting copyright:

Content Creation and Ownership: AI technologies, such as Generative Adversarial Networks (GANs) and natural language processing models, can independently create content in various forms like text, images, music, and videos. This has led to uncertainties about who owns the copyright for AI-generated content—whether it's the AI system itself, the user who trained the AI, or the developer who created the AI. Companies that provide AI

¹² <https://builtin.com/artificial-intelligence/ai-copyright> last visited on 02.01.2024.

¹³ <https://www.reuters.com/legal/ai-generated-art-cannot-receive-copyrights-us-court-says-2023-08-21/> last visited on 12.12.2023.

¹⁴ <https://www.livelaw.in/law-firms/law-firm-articles-/artificial-intelligence-intellectual-property-indian-copyright-act-singhania-co-llp-238401> last visited on 12.12.2023.

¹⁵ <https://www.nottingham.ac.uk/research/groups/commercial-law-centre/blog/artificial-intelligence-and-copyright-law.aspx#:~:text=Dr%20Trapova%20states%20that%2C%20at,the%20roots%20of%20copyright%20law.> Last visited on 07.12.2024.

¹⁶ <https://www.natlawreview.com/article/japanese-government-identified-issues-related-ai-and-copyrights#:~:text=Products%20generated%20autonomously%20by%20AI,%E2%80%9Ccreative%20contributions%E2%80%9D%20more%20specific.> Last visited on 07.01.2024

software may attempt to allocate the respective ownership rights of the company and its users via contract, such as the company's terms of service. OpenAI's Terms of Use, for example, appear to assign any copyright to the user: "OpenAI hereby assigns to you all its right, title and interest in and to Output." A previous version, by contrast, purported to give OpenAI such rights. As one scholar commented, OpenAI appears to "bypass most copyright questions through contract."¹⁷ However, leaving this discretion on the companies does not give a strong foundation to copyright issue of AI generated creative works. It is pertinent that strong legal regime giving a clear answer to this question comes in existence.

Automated Content Filtering: AI is utilized on content platforms to enforce copyright policies by automatically identifying and blocking copyrighted material. Algorithms for content recognition can pinpoint copyrighted works, resulting in automated takedowns or restrictions. However, these systems are not flawless and may occasionally flag legitimate content incorrectly.

Text and Data Mining: AI is employed for data mining and analysis to monitor and track copyright infringement. To facilitate the TDM data is the key. While data is not per se subject to copyright but in its innovative form it is copyrightable. WIPO says that Copying for TDM is an infringing activity which requires a license or an exception.¹⁸ In Japan, computerized technical analysis is permitted while maintaining the sustainability of commercial licensing markets. In the UK, there is a limited exception allowing the mining of subscribed content for research purposes, provided it is noncommercial, and appropriate technical safeguards are in place. TDM is however not a national issue; today organizations are not subject to one jurisdiction and therefore an international treaty is required to curb the menace of infringement issued in TDM. Organizations leverage machine learning algorithms to analyze extensive datasets, identifying patterns of copyright violation and aiding copyright holders in legal actions against infringing parties.

Challenges in Enforcement: The speed and scale at which AI can generate, distribute, and modify content pose challenges for copyright enforcement. Traditional methods may struggle to keep pace with the rapidly evolving landscape of AI-generated content. The global nature of the internet facilitates the rapid and borderless exchange of information, creating a complex landscape for AI-generated content and copyright enforcement. As AI technology evolves, issues surrounding ownership and attribution of AI-generated content become intricate, with jurisdictions taking diverse approaches to assigning copyright to such works. Traditional copyright laws, designed without foresight into the capabilities of AI, struggle to cope with the speed and scale at which AI can generate, distribute, and modify content, especially when infringing activities transcend multiple jurisdictions. The divergence in copyright laws among different countries adds another layer of complexity, complicating the global enforcement of copyrights, particularly in cases where AI blurs the lines of traditional authorship. The physical locations of data storage and processing centers for AI systems may not align with conventional jurisdictional boundaries, introducing ambiguity in determining the legal framework governing the actions of AI systems. The lack of comprehensive international standards specifically addressing AI and copyright further complicates matters, making it challenging to establish uniform guidelines for addressing jurisdictional issues related to AI-generated content. Collaboration in cross-border AI development often involves researchers, developers, and organizations from different countries, adding intricacy to determining legal responsibility in cases of copyright infringement related to collaborative AI projects. Extraterritorial jurisdiction attempts by some countries, applying their laws beyond borders, contribute to conflicts and legal challenges, especially when these laws clash with those of other jurisdictions. Online platforms hosting AI-generated content operate globally, making it complex to determine the appropriate jurisdiction for legal actions against these platforms, considering the diverse locations of users and servers. Despite discussions about harmonizing international copyright laws in the digital age, achieving consensus among countries with distinct legal traditions and interests remains a complex and ongoing process.

CONCLUSION

The complexity is expected to increase as artists more widely adopt artificial intelligence, and as machines improve their ability to generate creative works, increasingly blurring the line between art created by humans and that crafted by computers. What is to be considered is whether any of the copyright law questions raised by generative AI programs require amendments to the Copyright Act or other legislations. The question still remains whether AI-generated works are copyrightable, who should be considered the author of such works, or when the process of training generative AI programs constitutes fair use. Moreover, the global and decentralized nature of the internet, coupled with the rapid advancements in AI technology, accentuates jurisdictional challenges and the

¹⁷<https://crsreports.congress.gov/product/pdf/LSB/LSB10922#:~:text=AI%20programs%20might%20also%20in fringe,created%20%E2%80%9Csubstantially%20similar%E2%80%9D%20outputs.> Last visited on 14.12.2023.

¹⁸ https://www.wipo.int/edocs/mdocs/mdocs/en/wipo_ip_conv_ge_21/wipo_ip_conv_ge_21_p4_5.pdf last visited on 15.12.2023.

necessity for international collaboration in establishing clear and harmonized standards. The existing legal frameworks, designed without foresight into the capabilities of AI, face challenges in keeping pace with the speed and scale at which AI can generate, distribute, and modify content. With multiple jurisdictions in picture yet the world squeezing into a global village through technology raises the question of implementation and enforcement of AI and copyright laws. Challenges remain before the legal authorities to balance the encouragement of AI innovation with the protection of creators' interests remains a central challenge. We must lay a strong foundation and give clarity as to how creativity and the advancement of technology can walk hand in hand. The legal regime across nations must protect the art and the artists yet promote the innovation in the field of AI. As we have only tapped into a small fraction of the potential applications and capabilities of AI, the challenges we see today might only be the tip of the iceberg. In navigating this intricate terrain, a thoughtful and adaptive approach will be essential to foster a copyright ecosystem that supports both human and machine-generated creativity in the digital age.

REFERENCE

N/A