
EVOLUTION OF AI VERSUS COPYRIGHT PROTECTION

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ABSTRACT

Welcome to this comprehensive exploration of Copyright protection—an intricate legal realm governing copyright protection for all originally created works or inventions. This guide aims to navigate readers through the multifaceted landscape of AI generated works versus copyright, offering a detailed examination of its fundamental principles, theories, and specific debates on whether AI generated works ought to be protected under copyright to generated whom should such rights be granted to i.e., is the work a result of the AI itself, or that of Human authorship or is the work a result of the preferences and goals set by the developer.

Our journey commences with a foundational overview of Copyright Law, delineating its historical significance and laying the groundwork for a nuanced understanding of its complexities. Delving into the theoretical underpinnings shaping Copyright protection, this study provides insights into the diverse perspectives influencing the development of this legal domain. Readers are encouraged to adopt a critical lens for analysing and interpreting the governing principles.

One ought to understand that as the cyberworld becomes a vital part of our lives, it brings about various opportunities as well as obstacles for creators, copyright holders, and users, by exploring the implications of copyright infringement in this dynamic digital landscape. Thus, this paper aims to comprehensively explore all facets of the cyberworld to unravel the intricate relationship between AI and copyright infringement. It will examine the profound impact of AI technologies on content creation, distribution, and consumption within the cyberworld, shedding light on the transformative potential they possess, through diving into the real-world examples, by highlighting the challenges and intricacies associated with the Cyberworld.

Readers are guided through an in-depth exploration of the various forms of protection afforded under copyright protection, discerning the nuanced distinctions that define each. Real-world examples are employed to elucidate the practical application of legal principles. Navigating the complex terrain of copyright protection

As readers embark on this exploration of copyright protection, the invitation is extended to engage critically with the content, reflect upon legal precedents, and appreciate the evolving nature of this field. This study is not merely a guide; it is an opportunity to immerse oneself in the rich tapestry of Copyright Law and emerge with a nuanced understanding of its principles and applications. Happy reading!

INTRODUCTION

Human beings are creations of God who have been blessed with the ability to understand their surroundings and change as time goes by. This ability has influenced change of the society from one way of living to another, for example, in ancient times people lived in small groups with different duties such that when one group was responsible for gathering fruits another group was hunting. The division of labor within the society led to the development of such a society. ¹Changes that societies have witnessed in recent times include the development of information communication technology (ICT).

Information technology has revolutionized civilization and is likely to do so for some time to come. Along with the substitution of machines or formulas for manual labour, many tasks have grown simpler to complete. At first, just a few subsets of society used information technology to streamline their operations, but today, practically every area of society is unaffected. It's safe to argue that practically every facet of human activity has been revolutionized in some way by digital technology. Thus, casting no doubt over the fact that digital technologies that have evolved from the development of ICT have become the frontier for modern life in Tanzania and the world as a whole.²

One ought to understand that as the cyberworld becomes a vital part of our lives, it brings about various opportunities as well as obstacles for creators, copyright holders, and users, by exploring the implications of copyright infringement in this dynamic digital landscape. Thus, this paper aims to comprehensively explore all facets of the cyberworld to unravel the intricate relationship between AI and copyright infringement. It will examine the profound impact of AI

¹ Shembilu A, Importance of social networking for students' participation in education in Tanzania; Master's Thesis, Computer Science Informatics, School of computing, Bleckinge Institute of Technology, SE-371 79 Karlskrona, Sweden, January 2013.

² Shembilu A, Importance of social networking for students' participation in education in Tanzania; Master's Thesis, Computer Science Informatics, School of computing, Bleckinge Institute of Technology, SE-371 79 Karlskrona, Sweden, January 2013.

technologies on content creation, distribution, and consumption within the cyberworld, shedding light on the transformative potential they possess, through diving into the real-world examples, by highlighting the challenges and intricacies associated with the Cyberworld.³

AI was born in the middle of the 20th Century, Turing who is often regarded as the “Father of AI” first published in 1936 a mathematical description of what he named a “universal machine” and through a method known as the “Turing test” in Computing Machinery and Intelligence to determine whether a machine thinks. Thus, it difficult to clearly define what an AI is due to diversity of problems, solutions, distinction of what AI contains and what not, the name was first coined by John McCarthy in 1995, he defined it in 2007 to mean “*the science and engineering of making intelligent machines especially intelligent computer programs...*”⁴

In addition, the emergence of Artificial intelligence has enabled individuals from different geographical localities to engage in various technological advancements worldwide, however, the regulations of such technologies face ample challenges especially for a developing country like Tanzania, thus there is a need to address the said challenge by amending and enacting specific legislations to curb the malpractices in the cyberspace to conform with those of the conventional world, due to the fact that the cyberspace has no boundaries and it may involve various jurisdictions.⁵ Hence it is safe to submit that the usage of Artificial Intelligence has flooded almost every professional, commercial, industrial, and lastly private or personal lives of individuals which in turn makes the world at large rely heavily on Artificial Intelligence in almost everything they do.⁶

PART 1

WHETHER AI OUTPUTS SHOULD BE COPYRIGHTED?

The emergence of artificial intelligence has caused governments and courts worldwide to re-

³ Shembilu A, Importance of social networking for students’ participation in education in Tanzania; Master’s Thesis, Computer Science Informatics, School of computing, Bleckinge Institute of Technology, SE-371 79 Karlskrona, Sweden, January 2013.

⁴ Spindler, G. Copyright Law and Artificial Intelligence. *IIC* 50, 1049–1051 (2019).
<https://doi.org/10.1007/s40319-019-00879-w>

⁵ Shembilu A, Importance of social networking for students’ participation in education in Tanzania; Master’s Thesis, Computer Science Informatics, School of computing, Bleckinge Institute of Technology, SE-371 79 Karlskrona, Sweden, January 2013.

⁶ Bainbridge D., Introduction to Computer Law, Pearson Longman, 2004, Pg. 1

examine rules and regulations on a wide range of topics, including copyrights, privacy, and taxes. The question of whether copyright should apply to works created by artificial intelligence should also be discussed. The need for lawmakers to balance the interests of tech moguls, their staff, AI, and AI-generated technology (including that developed through human interaction and vice versa) globally with the interests of society at large that uses AI as a conduit to this largely unrestricted global technology development medium must therefore be reflected in various jurisdictions.⁷

However, it is important to note that AI in its current forms cannot determine the preferences or goals to be achieved without human implementation. Most scientists today view AI as a tool to create works that some consider equivalent to the human mind (based on the notion of intelligence). When intelligence is defined as finding new ways that are not already known, then AI may be deemed intelligent because it can learn from its mistakes and correct them as well as detect new relationships in big data heaps, which was not possible earlier.⁸

It is worth noting that before the creation of AI, the usage of software was mostly credited to the author because the results were thought to be predictable in that the software would produce works in accordance with the author's or program instructions. However, when an author employs AI, the scenario changes, so all that is required is to establish the primary preferences and objectives to be met.⁹

The Essence of Copyright

It is a well-known fact that copyrights ensure innovation and creativity by giving the creator of the content the legal right to use, duplicate, and distribute their creations. Consequently, it fosters intellectual innovation by giving creators the motivation to labor freely, enabling them to receive credit for their creations and safeguarding their livelihood.

However, the debacle arises on the issue as to who is the creator of the work generated by the AI, thus, **is it the AI itself, the AI developer or is it the AI user**, hence the allocation of these

⁷ Deturbide M, 'Liability of Internet Service Providers for Defamation in the US and Britain: Same Competing Interests, Different Responses', 2000 (3) The Journal of Information, Law and Technology (JILT). (See. <http://elj.warwick.ac.uk/jilt/00-3/deturbide.html>)

⁸Spindler, G. Copyright Law and Artificial Intelligence. *IIC* **50**, 1049–1051 (2019). <https://doi.org/10.1007/s40319-019-00879-w>

⁹ Spindler, G. Copyright Law and Artificial Intelligence. *IIC* **50**, 1049–1051 (2019). <https://doi.org/10.1007/s40319-019-00879-w>

copyright depends on a number of things such;

- Is the work a result of the AI itself?
- Was there human authorship,
- Is the work a result of the preferences and goals set by the developer.

Thus, in states such as China, the UK and others of the like, their regulations state that for works to attract copyright protection the said work ought to be original, however the provisions are not express with regards to the creator of the said works to be human.

A dive into the stance of the United States of America.

It has been an ever-cumbersome debate in various jurisdictions as to the possibility or question of whether AI works ought to be copyrighted since they are works created by non-humans.

Furthermore, the method used to train AI systems finding and reproducing patterns in data is the primary source of this problem. Therefore, in order for Artificial Intelligence to produce an output, like a picture or paragraph, it should be trained on the work of real humans. For example, if an AI creates art that looks like that of Leonardo Da Vinci, it must have been trained on the Monalisa.¹⁰

However, if this is the case then the same should be considered in almost everything that human beings learn since we also tend to learn from actual humans thus one can argue that even our intelligence may be nurtured to near most perfection thus leading to creation and development of various technologies, then why not the same for AI? ¹¹

Hence, legally these AI systems- such as chatbots like CHATGPT, and laMDA, image generators, and music generators, are not regarded as the proprietors of the products they create given that their products are only the result of human labor, a large portion of which has previously been copied and posted online, hence one may argue that AI commits plagiarism in some instances (take an example of how an AI was trained to simulate Eminem's Style, thus it

¹⁰ <https://builtin.com/artificial-intelligence/ai-copyright>, accessed on 05/02/ 2024 @ 12:28 P.M

¹¹ <https://builtin.com/artificial-intelligence/ai-copyright>, accessed on 05/02/ 2024 @ 12:28 P.M

acts as unreal slim shady who do we then grant the Copyright to.).¹²

A dive into the stance by United Kingdom,

Unlike the US the UK as on among the pioneers of AI innovations allows for works that were created by a computer only to be copyright protected. Since the UK introduced a legal framework that gives free access to nonprofit oriented organizations to mine data and texts on the internet without consent, however it prohibits profit-oriented organizations to do the same.¹³

ULTIMATUM ON AI COPYRIGHTS

If one is to embark on concluding this debate then one ought to examine the issue of how AI functions (thus how it produces its works), whereby one also ought to consider not only the concept of human interaction that leads to the work created by AI but rather also consider the algorithms that AI uses to create its work and then one ought to ponder on the question as to whether the AI created the said Algorithms itself and on the same note how was and is an AI trained to generate or produce its works all together.

Hence after much self-deliberation from revised literature and real-life scenarios on the same, I'm of the opine that AI-generated works should be copyrighted at all levels, however, this will depend on the said generated work or output or on a case-to-case basis since there cannot exist a computer or a computer-generated program without human interactions regardless of whether an AI is self-learning for even the Updates are made by the same individuals who made AI. Thus, this stance may change in the future but only when AI can reverse the objectives and targets enshrined by the owner.

In addition, copyright is essential to all AI generated works but that ought to depend on the particular work generated by the AI, thus, what is the actual amount of intellectual effort put forth by an individual, as opposed to the mechanical output of a computer program. Hence, they will be a need to review each works creative process that led to its creation, since at times AI works are generated from the users prompts, whereas on another outlook they are created

¹² <https://builtin.com/artificial-intelligence/ai-copyright>, accessed on 05/02/ 2024 @ 12:28 P.M

¹³ <https://builtin.com/artificial-intelligence/ai-copyright>, accessed on 05/02/ 2024 @ 12:28 P.M

Through the use of dynamic prompts and iterative refining, human authors collaborated with an AI system.¹⁴

Granting of copyrights to AI generated works is paramount and eventually incentivizes innovation it also raises the following issues to consider;¹⁵

- **Authorship**, though AI generated works cast a doubt on the idea of authorship, copyright law generally protects works written by human writers. Since it is difficult to identify who should be credited as the creator of works created by AI due to the fact that AI relies on algorithms and inputs of data.
- **Incentives for creation**, it designed to act as an incentive for creators to have exclusive rights over their creations, thus concerning AI-generated works could incentivize investment in AI technologies and foster innovation. On the same note it could cater for monopolies and access to knowledge if copyright protection becomes overly restrictive.
- **Legal challenges and enforcement**, determining the extent of copyright protection for works produced by Artificial Intelligence and implementing the said rights pose a formidable legal obstacle. For instance, distinguishing between works created by an AI and those created by humans may require new legal frameworks or standards. Additionally, enforcing copyright for AI generated works may be more challenging due to the decentralized and automated nature of AI systems.

PART 2

WHO SHOULD POSSIBLY BE THE COPYRIGHT OWNER FOR WORKS CREATED BY AI?

COPYRIGHT

It is worth noting that the concept of copyright outlays the fact that it grants rights to the creator, for producing something totally new and thus no one else is allowed to replicate it or claim it as their own. Whereby before this digital era the main threat to copyrighted works were items

¹⁴ <https://builtin.com/artificial-intelligence/ai-copyright>, accessed on 05/02/ 2024 @ 12:28 P.M

¹⁵ <https://builtin.com/artificial-intelligence/ai-copyright>, accessed on 05/02/ 2024 @ 12:28 P.M

such as photocopying machines, video and tape recorders, cameras, and others of the like. Unlike this digital era where one simply needs the internet to access a vast network of copyrighted works and may even acquire the same for free.

As a result of the development of science and technology the concept of digital works or content about copyright, one must first understand the type or category of works in question, thus as of today digital works can be grouped into the following criteria;

- i. Free digital content;
- ii. Paid digital content; and
- iii. Non-purchasable digital content.¹⁶

The above criterion includes all digital works present in cyberspace ranging from documentation, music, images, software, artifacts, paintings, and others of the like.

The debate as to who ought to be the copyright owner for works created by AI varies from one jurisdiction to another as portrayed in the first section between the US and the UK, since the debate emanates from the issue as to whether there is any human involvement in the production or generation of such works in which there are different positions for both scenarios as shown earlier, the two issues are;

- Works generated solely by AI (however begs the question as to whether this is in fact possible), and
- Works that have a combination of human authorship and Artificial intelligence aspects.¹⁷

The issue as to who ought to be the copyright owner for works created by AI in most jurisdictions is cumbersome since most jurisdictions (except for the UK, India, New Zealand, Ireland, and Hong Kong) since for a work to have copyright protection then such work ought

¹⁶ Wasim Rahaman, Digital Libraries, Digital Repositories, Digital Copyright, an Overview, Challenges and Solutions in Technology Era, 2017, p 3

¹⁷<https://copyrightalliance.org/faqs/artificial-intelligence-copyright-ownership/>, accessed on 07/02/2024 @ 10:00 A.M

to have human authorship.¹⁸

However there have been a number of suggestions that works autonomously generated by AI do not need copyright protection, while others believe that allowing copyright protection for these kinds of works would encourage the development of more advanced AI technology, which could result in more creative works, the following ownership allocation should be taken into consideration “ assigning initial ownership and authorship to the coder/developer of the AI, the user of the AI or even to the AI itself.” although they remain to be simply suggestion since there is no consensus yet. Hence leading to various proposals as to the aspect of copyright possession of works produced by AI and currently the proposals are;

- Developer of AI software; and
- User of AI software.

Moreover, there have been other suggestions that outputs produced by AI ought to be safeguarded by patent law, but then again it forwards questions such as who is the rightful owner of an AI created work and who ought to be regarded as the inventor (take a view of the recent DABUS Case).¹⁹

A dive into the two approaches for deliberations of copyright ownership for AI-generated works.

This section will focus on the two approaches proposed above, thus the developer of the AI software and the user of the AI software, however this approach of awarding protection to the AI itself will not be entertained neither from an applied(practical) nor a theoretical standpoint, since the same has never been entertained by any court but also the fact that artificial Intelligence does not poses the legal personality required to be awarded rights offered to human being.

THE DEVELOPER SOFTWARE AS THE OWNER

This approach is centered on the mere fact that without the developer the AI itself would not

¹⁸ Rita Matulionyte and Jyh-An Lee, Copyright in AI-generated works: Lessons from recent developments in patent law, Volume 19, Issue 1, 2022.

¹⁹ Rita Matulionyte and Jyh-An Lee, Copyright in AI-generated works: Lessons from recent developments in patent law, Volume 19, Issue 1, 2022.

exist in the first place hence only fair to award the ownership to the developer instead, but also it focuses on the earlier discussion that AI operate on the primary set preferences and goals set by its developer thus in one way or another it produces or generates its works from the developer's perspective.²⁰

One should note that this approach encompasses software developer on the basis of not only the individual programmer but may also mean the company. For instance, one may reference the *Nova*²¹ Case from the UK (herein they used the Copyright, Designs and Patents Act (CDPA) 1988 to determine copyright ownership) and the *Tencent* case from China (they used the originality doctrine to determine copyright ownership), thus, both Courts stress on the fact that the rationale for granting copyright possession to a computer created works relied on the fact that they significantly influenced the arrangement of the outputs of the AI, hence the Courts decided that the software developers were the legitimate owners of the computer created works²²

A deep dive into *Nova Productions Ltd v. Mazooma Games Ltd*²³

The CDPA 1998 offers copyright protection in the United Kingdom, for among others works generated by computers under the conditions where it was generated without human author, thus human authorship for a works created by a computer seems irrelevant for it to be copyrighted. The CDPA 1988 refers to the fact the creator of the work created by a computer is an individual who puts in place the arrangements or inputs required to create the said piece of work.

Thus, in *Nova Productions v. Mazooma Games and Others*, the work in question was the display of a coin operated game known as "Pocket Money," which was created, produced and marketed by the claimant Nova Productions Limited (Nova). However, there was no use of AI technology in this instance. In *Nova Kitchen J* examined if the user or the programmer owned the computer created content in a game:

²⁰ Rita Matulionyte and Jyh-An Lee, Copyright in AI-generated works: Lessons from recent developments in patent law, Volume 19, Issue 1, 2022.

²¹ [2006] EWHC 24 (Ch) (20 January 2006)

²² Rita Matulionyte and Jyh-An Lee, Copyright in AI-generated works: Lessons from recent developments in patent law, Volume 19, Issue 1, 2022.

²³ [2006] EWHC 24 (Ch) (20 January 2006)

“The appearance of the various game elements, the rules and logic by which each frame is generated, and the relevant computer program were all created by [the programmer], Mr. Jones. As a result, he made the necessary arrangements for the creation of each composite frame, which is a computer-generated work. According to S.9(3), I am confident that Mr. Jones is the author in these circumstances since he made the arrangements required for the creation of the works.”²⁴

Moreover, Kitchen J ruled the following with regards to the role of the player/user in the game,

“Any given screen's appearance is somewhat influenced by how the game is being played. For instance, the cue revolves around the cue ball when the rotary knob is turned. In a similar vein, the exact instant the player decides to hit the play button influences the shot's power. However, none of the artistic creations made in the subsequent frame photos are the player's creations. His contributions are not creative. Furthermore, he hasn't made any of the preparations required to create the frame images. He has only engaged in the game.”²⁵

Conclusively, Although Kitchen J's, evaluation on the copyright ownership on the said case is plausible and sound, it may vary depending on the nature of case at hand since AI algorithms differ from the conventional software, as the former requires a vast amounts of data in order to instruct the device, and the programmer does not work alone in enabling the operation of the AI application, and thus rather than using encoded instructions, AI systems operate by observing data, thus Kitchen's analysis ought to be adjusted based on technical character of an AI.

SOFTWARE USER AS THE OWNER

In this approach we take a dive into the *Feilin* case in China

This approach puts emphasis on the considerable inputs into shaping the outputs generated by AI thus it is more plausible if ownership is vested to the user, because they have no control over or the ability to plan the processing behaviors or data provision of other parties, hence, AI developers are unable to significantly envision the works that will be produced by AI.

²⁴ [2006] EWHC 24 (Ch) (20 January 2006]

²⁵ [2006] EWHC 24 (Ch) (20 January 2006]

Compared to those in the Nova instance, these developers play a far more peripheral role.²⁶

In *Feilin v. Baidu*²⁷, the Plaintiff's article, "Judicial Big Data in the Film, Television, and Entertainment Industry," was the contentious piece. As an analytical report that included statistics and accompanying charts on the types of claims, procedures, industries involved, the amount of the claims, decision-making time, courts, judges, lawyers and firms, as well as often cited laws in court decision pertaining to the entertainment industry, the defendant contended that the article was not copyrightable because it was solely the product of the plaintiff's search in the Wolter's Kluwer legal database.²⁸

Since, the plaintiff produced original content in the challenged article aside from the search result, the court decided in favor of the plaintiff. Nevertheless, the court also clarified the ownership problem with reference to the Wolters Kluwer Database search result. The Court clarified that there were two important participants in the process neither the user nor the programmer could be the author of the search result since the user merely entered the search terms used to search the database, which was also not an original expression under copyright law, and the programmer did not search the database by imputing keywords, so the search result did not reflect his original expression. Since the Wolters Kluwer Database is not regarded by the law as a natural person, it was not an author even though it generated the search result based on the input keywords, algorithms, rules and models.²⁹

Since, the developer had already recovered their investment in creating the software through licensing fees or ownership of intellectual property rights in the software, the court also believed that the user ought to be awarded copyright protection, since the user had a significant incentive as opposed to the software developer to use and distribute the works created by the computer, due to the fact that they had already entered the search terms and had a plan for using them. As a result, the decision was also seen as a means of promoting cultural and scientific development, because the user had a significant incentive to use and distribute the works.³⁰

²⁶ Rita Matulionyte and Jyh-An Lee, Copyright in AI-generated works: Lessons from recent developments in patent law, Volume 19, Issue 1, 2022.

²⁷ (2018), Beijing Internet Court Jing Min Chu No. 239

²⁸ (2018), Beijing Internet Court Jing Min Chu No. 239

²⁹ (2018), Beijing Internet Court Jing Min Chu No. 239

³⁰ Rita Matulionyte and Jyh-An Lee, Copyright in AI-generated works: Lessons from recent developments in patent law, Volume 19, Issue 1, 2022.

Conclusively, however sound this approach might seem, it however not universally justified as well since the issues related to AI varies from a case-to-case basis hence allocation of ownership depends on the specific case at hand, due to the fact that in some instance, some users contribute significantly to the AI generated outputs/ works, whereas other users' contribution to the same is negligible.

A NEW APPROACH (AI as the Owner)

This approach comes as a result of the weaknesses of the two approaches discussed earlier, herein a dive into the UK DABUS (in DABUS, the High Court ruled that "... it is generally accepted that the owner of one thing also owns its offspring. As result, the fruit that a tree produces is often owned by its owner." decision is deemed relevant regardless of the fact that the case involved patent inventorship and ownership, since the economic justification for encouraging creativity and innovation is the foundation of both patent and copyright law, it is believed that the legal theories of these two domains too frequently affect one another, take a look at; "*Metro-Goldwyn-Mayer Studios Inc, v. Grokster Ltd*³¹, in order to create responsibility for inducement in copyright infringement, the US Supreme Court drew on patent law..."

Thus, when applying the fundamental item of commerce theory to copyright law from patent law. In *Sony Corp of America v. Universal City Studios Inc*³², despite not being identical twins, the US Supreme Court stressed that patent law is a suitable source to borrow from because of its similarities to copyright law. Thus, due to the similarities between the two disciplines on Intellectual Property ownership under patent and Copyright law, one ought to think about venturing into whether the DABUS AI produced works first ownership rule allocation could be appropriate in a copyright law setting.

However, like the other approaches this to has its short comings, thus one might come to question such as; why should the owner of the AI own it if the make no significant contributions to the invention? and some might question a to the viability of the results generated by the AI.

In addition, this method can be modified ordering by contractual agreements, but it cannot address property interests in every social relationship.

³¹ 545 U.S 913, pp 934-935 (2005)

³² 464 U.S 417, P 439 (1984).

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