
AUTHORSHIP OF AI GENERATED WORKS: AN ANALYTICAL STUDY

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ABSTRACT

As new technological development emerged, a new way of content creation was happening, especially the content created by AI is becoming an issue related to who owns the copyright. Can the AI be the owner of the work, or does the person who created the AI become the owner of the work? According to copyright, the person who creates a work is the copyright author and owner of the work. Therefore, on such a basis, whether AI can be considered the copyright owner of AI-generated works is the question. As there is not much clarity was given on this area, even though different opines were stated; where some authors say that AI is the author and owner of the work created by them, whereas some other says that AI has no authorship over the work they create, they are just a puppet or a key toy that act according to programmer comment. Because in order to create content by an AI, the data should be added by the programmer of the AI creator. Therefore, the work created by AI is the work of AI software developers or programmers. Due to such two notions, it is much needed to answer the question of the state of copyright for works generated by artificial intelligence and who is the owner of the work. Because now, the problem related to the legal implications of AI is common worldwide, and no one has provided any clarity on it. The present article focuses on the issues concerning authorship over AI-generated copyrightable work.

Keywords: Copyright law; artificial intelligence; authorship, ownership

Introduction

Artificial Intelligence is a much prominent area for research in the current scenario as AI has created a massive change in the IP field, both copyright and patent. AI is considered a machine that functions on algorithms and aims to simulate some aspect of biological cognition using machines.¹ Recently, a huge problem has arisen regarding Artificial Intelligence (AI) and Copyright. As technology is overgrowing now, artificial intelligence can create works with its creativity with no human input². Thus AI has created different works, such as music³, art⁴, and literature. All these works somehow fall under the domain of copyright law. This, in fact, led to the most controversial and complex issue, which is authorship and ownership in AI-related copyright law. Though much policy and academic debate is happening, no consensus on these issues has emerged. The present article discusses the key points used against granting authorship and ownership for AI in AI-generated copyrightable work.

AI and Copyright

Before going to the authorship and ownership issue, it needs to check whether AI work can be considered copyrightable work. It is well clear that AI-generated works are subject to copyrights because computer programs are considered artworks under literary work⁵. Therefore, AI is protected under copyright laws. However, still protection to, AI-generated works are not easily copyrighted in most countries because each country's laws require human authorship to claim copyright protection for AI-generated work⁶. Also, as technological

¹ John McCarthy, What is AI? Basic Questions (visited October 2022), online: <http://jmc.stanford.edu/artificial-intelligence/what-is-ai/index.html> - Professor McCarthy defined AI as “the science and engineering of making intelligent machines, especially intelligent computer programs

² Blaseetta Paul, Artificial Intelligence and Copyright: An Analysis of Authorship and Works Created by A.I., 4 INT’L J.L. MGMT. & HUMAN. 2345 (2021).

³ Victor M. Palace, What If Artificial Intelligence Wrote This: Artificial Intelligence and Copyright Law, 71 FLA. L. REV. 217 (2019). Pp-223- Watson Beat, Jukedeck, and WaveNet are examples of artificial intelligence systems capable of creating music without any human input. Watson Beat, for example, “composes music by ‘listening’ to at least 20 seconds of music, and then creates new tracks.

⁴ Victor M. Palace, What If Artificial Intelligence Wrote This: Artificial Intelligence and Copyright Law, 71 FLA. L. REV. 217 (2019). Pp-224-The results are “haunting, hallucinogenic image scapes that resemble the original photographs but are nonetheless uniquely different

⁵ The Copyright Act, 1957 -Section 2(o) “literary work” includes computer programmes, tables and compilations including computer. Even few jurisdictions that have the provisions on computer-generated works (e.g., the UK, Ireland, New Zealand, India, and Hong Kong) in their copyright laws. (Copyright, Design and Patents Act 1988 (UK), s. 9(3); Copyright Act 1994 (NZ), s. 5(2)(a); Copyright Act 1957 (India), (2)(d)(vi); Copyright Ordinance (Hong Kong) cap 528, s. 11(3); Copyright and Related Rights Act 2000 (Ireland), s. 21(f).)

⁶ *New Idea Farm Equipment Corp. v. Sperry Corp.*, 916 F.2d 1561, 16 U.S.P.Q.2d 1424 (Fed. Cir. 1990) by holding that it will not register works produced by a machine or mechanical process if there has been no creative input or intervention from a human. Further, in *Naruto v Slater* 888 F.3d 418 (9th Cir. 2018). the court has opined that a non-human cannot hold copyright and hence cannot sue for infringement of copyright.

development happened, there is difference between computer programs and AI-generated work. Because currently, AI creates work without human inference; such work, in fact, is not copyrightable because such creation does not involve any input or intervention by a human author. Thus, the answer to whether AI work can be considered copyrightable work is no; as far as there is no human inference, it can't be considered as copyrightable work. For example, in India, Section 2(d)(vi) of the Copyright Act of 1957 provides that in the case of computer-generated work, the person who causes the work will be considered the author of the said work⁷. Also, in India, under the copyright act, section 2 (d), an author refers to a human or a legal person. Therefore, the question of who should own the copyright of AI-generated work will be left with only one answer, the person who invented the AI. This notion seems to be much influenced due to the pre-condition for considering AI work is copyrightable only if human interference exists in their creation. Even countries like the United States and European countries followed such a notion; this, in fact, led to the conclusion that AI-generated works are not copyrightable if human creativity is absent in their creation. Additionally, the person who makes the arrangements essential for the development of the work is considered the creator of the AI-generated work⁸. In such case, the AI developer and present possessor of AI will be the author. Even though UK had taken the same notion but under, section 178 of the CDPA defines a computer-generated work as one that *"is generated by computer in circumstances such that there is no human author of the work"*⁹. According to this definition, the UK is granting artificial intelligence (AI) the status of authorship by acknowledging the effort that goes into developing a software that can produce works, even if the creative spark is provided by the machine.¹⁰ Which, in fact, became, solved the authorship issue in the AI context. Because in the current context such notion, the work such as literary, dramatic, musical, and artistic works are generated by AI without human author, which means the AI himself creates the work without human interference, which in fact, led to into the notion that human authorship in computer-generated work became irrelevant to consider whether the work is copyrightable. Because now almost all AI techniques are based on a technique called machine learning¹¹. Therefore, most of the content is created by AI without a pre-programmed

⁷ Similar notion taken by UK that Copyright, Designs and Patents Act 1988-(CDPA), UK section 9(3)-which states that *"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."*

⁸ Martin Miernicki & Irene Ng (Huang Ying)- Artificial intelligence and moral rights-2020-AI & SOCIETY (2021) 36:319–329 <https://doi.org/10.1007/s00146-020-01027-6>

⁹ Copyright, Designs and Patents Act 1988- section 178

¹⁰ Andres Guadamuz-Impact of Artificial Intelligence on IP Policy-

¹¹ Zack Naqvi, Artificial Intelligence, Copyright, and Copyright Infringement, 24 MARQ. INTELL. PROP. L. REV. 15 (2020)

technique. Even Robotic artists have been involved in various types of creative works for a long-time best example is Sophia, an AI Robot. Now she has been granted citizenship by Saudi Arabia. In such a context, if the content is eligible for copyright, then Sophia will be the work's author and owner that she created. Because as far as she is considered a legal person and she has created copyrightable content work, then she will be the author and owner of the work. But this argument is not accepted much on the ground that even though there is some sort of human interference that helps Robert to create such content. But this argument can be protested by stating that even though the work is created by AI with human interference, human interference means setting the parameters or algorithm in the AI. Based on those parameters or algorithms, AI itself comes up with a copyrightable work; thus, in fact, amount to actual work is done by the AI itself¹². Similarly, a person has given some points or themes based on that they write a story. If they write a story, they consider as the author of that work if it fulfills the criteria for copyright; the same thing is done by AI then; why AI can give authorship over the work? In both contexts, content creation is happening; the working of AI is very similar to the working of a human mind, which is based on the phenomenon of perception and development of ideas resulting in creative works¹³. Then why can't AI consider the author of created work? Even according to the principles of copyright, the one who creates the work should get copyright protection; thus, the AI needs to be considered as the author of the work. Here when an AI creates a new form of work based upon the parameters or algorithm set by the AI software developer, if the work is capable of being covered under copyright subject matter, then the author of the work needs to be the AI, not the AI software developer. Most case courts have not granted any authorship to AI by stating that even though the work is created by AI but with human interference since there is a human input, then the creativity in work is derived from the input of the human, not from the AI. But in fact, this is contrary according to Indian copyright Act, because copyright provides protection for creators of original works of authorship. This means protection is given if the work is a creation, not a mere idea. In AI context, even though computer-generated artworks have relied upon the programmer who provides the input for the creation of the work. However, due to technological advancement, artificial intelligence has been developed to the extent that it can understand and create results without human

¹² Telstra Corporation v Phone Directories case-works created by AI, humans do not directly participate in the creation of works. They create the algorithm and may (or may not) provide some input data, while the output, i.e. the work, is generated by AI independently. see White, Courtney and Matulionyte, Rita, Artificial Intelligence Painting the Bigger Picture For Copyright Ownership (December 5, 2019). Available at SSRN: <https://ssrn.com/abstract=3498673> or <http://dx.doi.org/10.2139/ssrn.3498673>

¹³ Shubhi Trivedi, Implications of Artificial Intelligence on Copyright and Patent, 1 LEXFORTI LEGAL J. 48 (2019).

interference. This means that even without human interference, AI is creating works, which can be considered the work of AI itself. Thus, according to copyright, it is the original work of AI. The best example for considering AI as the original author of the work is the Artificial Intelligence Virtual Artist (AIVA) Technologies¹⁴ introduced music composing AI, which became the world's first AI who get the status of a composer¹⁵. Later this enables them to release music and get royalties under the name AIVA. After this, in 2017, Saudi Arabia granted citizenship to an AI humanoid robot, Sophia. All these examples state that AI should be granted as the author of the work. When technological changes happen, change in legal rights is needed, even though most countries do not accept such change even though they say that the work of AI is creative work and it may qualify for copyright protection, but by it is a program that is merely used as a tool that supports the creative process¹⁶. Nevertheless, in the current context, it can't be said like that because now the computer program is no longer a tool; since many decisions are made during the creative process do not require human intervention¹⁷ even though it were not considered copyrightable work unless human author created it¹⁸. Even the Indian Copyright Act 1957 reflects a similar view that copyright protection shall not be extended to works created by AI¹⁹. The reason might be copyright promote and protect human creativity, not machine creativity.

The main arguments against considering AI as the author and owner of work

Philosophy

According to the copyright, it provides protection for human intellectual creation; even the philosophical justification for copyright, according to personality theory, says that

¹⁴ Ed Lauder, "Aiva is the first AI to officially be Recognised as a Composer", AI Business, October 3, 2017, available at: https://aibusiness.com/document.asp?doc_id=760181 (visit the site on November -1 -2022)

¹⁵ Ahuja, Virendra, Artificial Intelligence and Copyright: Issues and Challenges (June 11, 2020). ILI Law Review Winter Issue 2020 , Available at SSRN: <https://ssrn.com/abstract=3864922>

¹⁶ Express Newspapers plc v. Liverpool Daily Post & Echo, - 5 [1985] FSR 306. -the court considered computer as a tool in the same manner as a pen is regarded as a tool. Kalin Hristov, "Artificial Intelligence and the Copyright Dilemma", 57(3) IDEA 435 (2017). Naruto v. Slater- 2016 U.S. Dist. Lexis 11041 (N. D. Cal. Jan. 23, 2016)

¹⁷ Andres Guadamuz-Artificial intelligence and copyright-WIPO Magazine-2017- URL- https://www.wipo.int/wipo_magazine/en/2017/05/article_0003.html

¹⁸ Australian case *Acohs Pty Ltd v Ucorp Pty Ltd* [2012] FCAFC 16 FEDERAL COURT OF AUSTRALIA -a court declared that a work generated with the intervention of a computer could not be protected by copyright because it was not produced by a human. Furthermore, section 178 of the CDPA defines a computer-generated work as one that "is generated by computer in circumstances such that there is no human author of the work". See - Kalin Hristov, "Artificial Intelligence and the Copyright Dilemma", 57(3) IDEA 435 (2017).- Copyright in a work can only be conferred on a human author and not on animals and machines in the U.S

¹⁹ Copyright Act, 1957 - Section 2 (d) (vi) states that for computer generated literary, dramatic, musical or artistic work the author of the work shall be the 'person' who created the work

copyrighted works are manifestations of the author's personality and will²⁰. That is the reason why most of the countries' copyright law is more into the human-centric notion of authorship, which excludes AI-created works from copyright law protection. For instance, even at the international level, the Berne Convention says that the protection of literary and artistic works expressly requires that an author be a human being²¹. Thus, it became clear that the convention is strongly suggested only refers to human creators²². Like that, most copyright law theories are deeply rooted in a human-centric notion of authorship. Even according to Lockean labor theory, this theory says that the authors should be rewarded for their efforts and labour they spent in creating works. This theory says about the hard work of human beings; thus, according to this theory also, the assumption is that authors are human beings. But this notion can be applied to AI because AI's work product is created by the AI itself without extra input from the programmer. In such context, according to Lockean theory or Hegelian theory,²³ the work is the outcome of AI only, or the work reflects as the product of AI only. But such an argument where not taken in practical context; instead, it says that both labor and personality theory justify that the AI and its creations are the fruits of the programmer's intellectual labor; thus, work is the reflection of their personality; therefore, the programmer should be entitled to a property right in the AI's creations in the form of copyright²⁴. Even if AI the work is created by artificial intelligence, but the work is not derived from its own will.

AI Lacks the Legal Personhood

Allocating ownership to the AI has never been taken by any court because AI lacks the legal personhood where it is necessary to have to claim legal rights. But granting citizenship status to Sophia as an electronic person²⁵ were led to change in such notion where the robotics

²⁰Haochen Sun, Redesigning Copyright Protection in the Era of Artificial Intelligence, 107 IOWA L. REV. 1213 (2022).

²¹ Berne Convention for the Protection of Literary and Artistic Works, September 9, 1886, as revised at Paris July 24, 1971, 1161 U.N.T.S. 3 [hereinafter Berne Convention].

²²Ginsburg JC (2018) People not machines: authorship and what it means in the Berne convention. IIC 49:131–135 The minimum standard set forth by the Berne Convention only applies to works made by humans.

²³ Georg Wilhelm Friedrich Hegel in his work "philosophy of right" as follows: – "A person has as his substantive end the right of putting his will into any and everything and thereby making it his because it has no such end in itself and derives its destiny and soul from his will. This is the absolute right of appropriation which man has over all things." theory tries to explain is that if a person has created a thing by putting his expression into that thing then he has a right over that property.

²⁴ Haochen Sun, Redesigning Copyright Protection in the Era of Artificial Intelligence, 107 IOWA L. REV. 1213 (2022).

²⁵ Elizabeth Rocha, Sophia: Exploring the Ways AI May Change Intellectual Property Protections, 28 DePaul- J. Art, Tech. & Intell. Prop. L. 126 (2019) Available at: <https://via.library.depaul.edu/jatip/vol28/iss2/3> - PP-129-130-"electronic personhood" aimed at ensuring rights and responsibilities of capable Artificial Intelligence beings.

rights are given in parallel with human rights. By conferring legal personality to AI systems would help in ensuring the ownership of work done by the AI and ensure accountability on the part of the works and actions of the AI system. But in practice, it is extremely difficult to enforce; for instance, if any work created by AI in India is defamatory or against public morals, the criteria of defamation, i.e., intention to hurt, cannot be fulfilled in the case of AI²⁶. In such case, granting legal rights to AI is not good this, in fact led to more serious reflections on the broader consequences. Also, even if making AI a legal entity, it should possess the capacity to enter into contract with another person, it is not possible in practical. Thus, lack of personhood will not be entitled to transfer ownership in work. But the argument against this notion is can be debate based on granting legal personality as well as legal rights for different legal entities and corporations if they can, then why can't AI. The first step toward the change in notion can be seen in the case of granting legal status to an AI robot called Sophia.

Moral Right of the Author

In most the country, along with economic rights, moral rights are also granted to the author, which aims to protect the non-economic interests of the author. In Indian section 57 of copyright provides moral right to author of the work²⁷, such moral right cannot justify, to consider AI as copyright author and owner of the work. Because moral rights defend against distortion, mutilation, alteration, or any other action that might be detrimental to the author's honour or reputation. As in case of A.I. it cannot be able to exercise the moral rights which are generally provided to the author. Even if anyone uses the AI-generated work such use will not damage damages any honour or reputation of AI. As far as AI is considered as an electronic person issue such as prejudicial to his/her reputation and honour will not emerge²⁸ because the moral rights are related to the feelings and emotions of the human author. Thus, these rights

²⁶Bharucha & Partners- Copyright in works created by artificial intelligence: issues and Perspectives- February 18 2021-URL- <https://www.lexology.com/library/detail.aspx?g=4513277a-6571-40f1-923d-c09ec5366fdd>

²⁷ The Copyright Act, 1957 (14 OF 1957) section- 57. Author's special rights. 1 [(1) Independently of the author's copyright and even after the assignment either wholly or partially of the said copyright, the author of a work shall have the right (a) to claim authorship of the work; and (b) to restrain or claim damages in respect of any distortion, mutilation, modification or other act in relation to the said work 2 if such distortion, mutilation, modification or other act would be prejudicial to his honour or reputation: Provided that the author shall not have any right to restrain or claim damages in respect of any adaptation of a computer programme to which clause (aa) of sub-section (1) of section 52 applies. Explanation. Failure to display a work or to display it to the satisfaction of the author shall not be deemed to be an infringement of the rights conferred by this section.] (2) The right conferred upon an author of a work by sub-section (1), 3 may be exercised by the legal representatives of the author

²⁸ Martin Miernicki and Irene Ng (Huang Ying)- Artificial intelligence and moral rights- AI & SOCIETY (2021) 36:319–329 <https://doi.org/10.1007/s00146-020-01027-6> -2021

are not meant for AI²⁹ as AI may not be able to ascertain whether any act has affected the reputation of the original work³⁰.

Incentives

In most countries, the countries' primary objective for granting copyright is utilitarianism. This became a major objection for the notion for considering AI as the author and owner of the work generated by it. Because the objective of granting copyright is to reward authors or incentive the author of the work to encouraging to develop creative works which ultimately led to increase the interest of public by make those works available to the public to enjoy. As in case of AI getting incentive is not the motive of AI to create further work therefore the incentive-based argument of utilitarian theory is redundant when considering AI as the author and owner of the work. Thus, in such context if the copyright author of the AI generated work is considered as work of AI software developer or the programmer of AI is better. Because this in fact encourage the AI programmers and the companies to develop sophisticated AI technology and as a stimulus for them to continue investing in the AI related R&D activities which eventually lead to more original creations reaching the public which ultimately increases the interest of public.

Work Made for Hire

The other argument is that in some countries, especially US, section 101 of the Copyright Act mentions that work made for hire includes computer-generated works. That means copyright ownership for works created by artificial intelligence would vest in the employer,³¹ that is, the AI software developer or the programmer of AI; thus, the author and owner of the work will be them. In this, AI is considered as an agent and the individual programmer is the principal who creates the AI and will be the copyright holder of the work that AI did in the course of employment; thus, AI serves as a tool that helps the author to materialize her/his creative vision. In such cases, AI cannot be able to have any copyright ownership over the AI code itself. Even as in cases of AI-generated without human intervention

²⁹Ahuja, Virendra, Artificial Intelligence and Copyright: Issues and Challenges (June 11, 2020). ILI Law Review Winter Issue 2020 , Available at SSRN: <https://ssrn.com/abstract=3864922>

³⁰Lucy Rana and Meril Mathew Joy- India: Artificial Intelligence And Copyright – The Authorship- 18 December 2019- URL- <https://www.mondaq.com/india/copyright/876800/artificial-intelligence-and-copyright-the-authorship>

³¹ Victor M. Palace, What If Artificial Intelligence Wrote This: Artificial Intelligence and Copyright Law, 71 FLA. L. REV. 217 (2019)

also get covered under this. But as far as AI lacks personhood, it may not be treated as an employee. Thus, such an argument will not stand against claiming authorship by AI. Also, AI is a machine which humans design to accomplish specific tasks; therefore, it is a perfect agent of the developer, not an employee.

Infringement

Another argument is how AI can be held responsible for any infringement committed by it if it is acknowledged as the creator and owner of the content it produces. Because according to the statute of copyright in most countries state that a "*person can only infringe copyright in work*". Then how is AI held liable since the legal status of the AI is still not classified as a legal entity? Thus, no country holds an AI system itself responsible for infringement, and responsibility for copyright infringement will always rest with a natural person.³² But as in case of Sophia the notion might be different, she might can held liable for the infringement as she considers as legal person by grating citizenship therefore, she has legal right. But as in case of Sophia it is difficult to impose liability because, in the absence of mens rea, it will be very difficult to establish human culpability in AI-created works.³³ Thus AI can't held liable for any copyright infringement. Therefore, in such cases the creator of the AI will be responsible for infringements of copyright by the AI. Since the AI programmer influenced over the action of the algorithm resulted to legal violation. As mentioned earlier, AI is a work based upon set of techniques or instructions by programmer. In such case the programmer of AI can set algorithm in such a way that it can operate without infringing copyright of other. Which can avoid the infringement issue.

Term of copyright

The length of the copyright term can't decide as in case of AI is another argument, because as in case of human author the copyright last for 60 years as in the case of original literary, dramatic, musical and artistic works the 60-year period is counted from the year following the death of the author³⁴. It is difficult to decide the term of copyright of AI as it is immortal. Thus,

³² Bharucha & Partners- Copyright in works created by artificial intelligence: issues and Perspectives- February 18 2021- URL- <https://www.lexology.com/library/detail.aspx?g=4513277a-6571-40f1-923d-c09ec5366fdd>

³³ Ibid-32

³⁴ The Copyright Act, 1957 (14 OF 1957) section -22-29 -term of copyright

it been difficult to grant copyright protection for AI as it is an entity which has no life-span and the potential to live forever.

Public interest

There is a set of argument is that AI generated work should be in the public domain, because AI generated work has no cost incurred therefore it is quite logical to make the AI-generated work accessible to the public for free. If authorship is granted for AI-generated work then it will affect the interest of public for free access to AI generated works. According to this argument, no person should be awarded the copyright because no person generates the artificial intelligence's work. This became one of the reasons for denying copyright subsistence in AI produced works. But the argument against this approach is that, denying right based on public domain will discourage AI programmers from further investing in the AI domain.

Giving copyright to the individual who invented artificial intelligence seems like the most logical course of action, or giving AI rights would give protection under a sui generis system, in which case the aforementioned argument would not be valid. As far as none of the countries legislature not equipped enough to talk about the rights of AI and its creation it seems to be an unsolved problem with different conflicting issues. Even in Indian, the copyright act protects the work of AI only protected when there is human inference. Like the decision that made monkey selfie case³⁵ is best example for that the Copyright Act does not expressly authorise animals to file cases for copyright infringement under the statute³⁶. Similarly, as in case of AI or computer-generated works the author of work will be the person who arrange necessary tool for the creation of the work. As far as AI worked based on the set algorithm the programmer developed will be consider as the author of the work. Because for everyone AI is only a tool to create works. All these conflicting issues will be solved if there is a Sui Generis Right for AI Creations, as far as technologies where emerging, its high time to give a proper notion to such issues.

Conclusion

AI is one of the emerging legal research areas as it is important in contemporary times

³⁵ *Naruto v Slater*- Case No. 15-cv-04324-Who United States District Court Northern District of California-2016

³⁶ Sik Cheng Peng-Artificial Intelligence and Copyright: The Authors' Conundrum-WIPO-WTO Colloquium Papers, 2018

due to technological advancement. Also, AI currently has a great role in creativity and innovation. Though most of the country have not considered AI as author of the work, because most of the provisions could be invoked to identify AI developers as authors of AI-generated works. Not only that the above said factors are some reasons which can be used to deny for granting ownership right of AI. In further all these factors might be possible to overcome one of the examples is granting the AI robot Sophia with legal status like that all these arguments that used against AI might be overruled in future but as far as AI and AI creator are interlinked giving right to AI means right to the AI owner. Other option to overcome such issues is recognising a sui generis law as such for AI generated work for protection.

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