

# Implications of Copyright Issues: An Analysis of Invention by Human and Artificial Intelligence

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## Abstract

Evolution in the world has led to a wide spread of technological advancements. One example is artificial intelligence (AI). Machine intelligence is the intelligence produced by machines. It is the concept which begins the moment, when the machines are able to accomplish the tasks in lieu of human intelligence. The Artificial Intelligence is getting more efficient and is able to complete more task in lieu of Human Intelligence. The recent debate to recognise ChatGPT as an author is one of the recent controversies, where in some journals have given recognition and considered ChatGPT as an author, whereas many have not. Artificial Intelligence bots like ChatGPT have endangered careers of various professionals including academicians, content writers, lawyers and software engineers, etc. It is becoming increasingly difficult to distinguish between AI and human-created content. The concept to give AI status of a creator is still questionable and unfamiliar. There are no existing laws to specifically protect creations made from AI as original works. Intellectual property rights (IPR) are rights given to persons over the creations of original works of authors which are artistic, literary, technical, or scientific work in the fields of patent, copyrights, trademark and so on. Copyright law is a form of intellectual property which gives protection in terms of authorship to a person who has created original work. Artificial intelligence is the intelligence produced by machines, and it does not mention this authorship to anyone other than a human. The distinction between AI and human-created content is becoming increasingly difficult. Validity of a copyright work lasts for 60 years for an author after his or her death in India. WIPO (World Intellectual Property Organization) has also created a forum under the WIPO Conversation on IP and AI to discuss the impact of AI on IP. The researcher will theoretically analyse the origin of artificial intelligence and its relation with the copyright laws. The law does not clearly define if an original work is created by AI without human intervention, then who will be considered the copyright owner? Also, what will happen if a person plagiarises or infringes another's original work of AI then who will be punished, either the coder/creator of Artificial Intelligence or the buyer of the creation. This study is to review the existing provisions and seek answers to these questions through theoretical research. With this study, the researcher seeks to analyse technological advancements and growing usage of Artificial Intelligence and its interface with exiting Copyright Laws.

**Keywords:** Artificial intelligence, copyright laws, human inventions, original work

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## INTRODUCTION

The world is witnessing a generation of creative works by artificial intelligence (AI). Artificial intelligence has broadened avenues for exploration of new technology everywhere. It is the concept, which begins the moment machines are able to accomplish the tasks in lieu of human intelligence. 'The Day a Computer Writes a Novel' [1] a short Japanese novel, and 'The Sunlight that Lost the Glass Window' [2] a volume of Chinese poems, both were AI generated creative works.

Artificial intelligence is wielding an impact on every profession and industry. The recent debate to recognise ChatGPT as an author is one of the recent controversies, where in some journals have given recognition and considered ChatGPT as an author, where many have not. ChatGPT is an artificial intelligence chatbot created by the company Open AI. The technology was intended to aid in online customer service, but the artificial intelligence behind it has surpassed all expectations and grown in popularity. ChatGPT is a self-generating chat that collects information from textbooks, newspapers, internet, and various articles [3]. The academic community has been outspoken in its opposition to the AI technology, with numerous research journals prohibiting it from being credited as a co-author on scientific papers and publications. Science journal publishers have prohibited the use of the AI-powered advanced chatbot in research papers.

ChatGPT is one of 12 authors on a preprint<sup>1</sup> about using technology in medical education that was published on the academic repository medRxiv in December of 2022 [4].

An editorial published in the journal *Nurse Education in Practice* [5] named ChatGPT, the AI as a co-author, along with Siobhan O'Connor, a health-technology researcher at the University of Manchester in the United Kingdom.

AI-based tutors in the realm of education can provide pupils with personalised training and attention. The needs of the students are met in a tailored environment. In the field of health care, AI has virtually limitless applications. For example, it is utilised for hospital management, disease diagnosis [6], patient monitoring, patient outcomes, health care process and clinical decision-making optimization, clinical work flow augmentation, and hospital optimization [7]. AI allows scientists to discover patterns they were previously unaware of. They can create novel compounds to treat ailments. AI is constantly evolving and bringing in advancements in innovations, it is being used universally and is a part of almost every new technology creation. Law is invulnerable from hiatus of new technology. With the impact it is creating, it is also leading to many unanswered questions. Intellectual property rights, is one such law, where it is having an impact and unable to adjust itself without actually evolving it.

The expansive use of artificial intelligence generated work will lead to likewise changes in the IP creations which will entail to changes to licenses, structures, abstract and aesthetic works, etc. AI generated work refers to the output work by AI without human intervention. IP laws help in providing protection to new innovations and creations with human intervention; there is no certain explanation as to how IP will amend itself with the involvement of Artificial Intelligence. IPR laws recognise and provide protection to original works of authors of artistic, literary, technical, or scientific works; AI, on the other hand, is a concept that has evolved in the new technological era; it is the result of computer science based on algorithms that are the result of human intellect. In general, these algorithms are built to accomplish certain activities; robots with AI perform duties similar to people based on self-learning modules. The main issue is that if an IPR work is made by the self-learning module of AI, who should be treated as the owner of the AI, the person utilising the AI, the person using the AI or the creator of AI and since IPR only recognises author as a human, giving AI no recognition in this process. This question has become more debatable since the creation of humanoids such as Sophia and Nadine [8]. This leads to conflicts between Artificial intelligence and Humans. Copyright laws provide the creator of a work the sole ownership of that work, giving them the exclusive right to sell or duplicate their concept.

The use of artificial intelligence in the creation of works could have serious consequences for copyright law. Earlier, the ownership of a copyright work created which was computer-generated was not contested because the programme was only a tool which aided the creative process, similar to a pen and paper. But AI creates the original work without human intervention. Artistic works are protected by copyright law only if they are original, with most laws in countries defining originality requiring a human author. States only recognise works created by humans eligible for copyright protection. The

question which arises as to whether an Artificial Intelligence can be taken as an 'author' under the copyright law as it is and whether an AI should be regarded as an 'author' under copyright law.

WIPO Convention: The WIPO Conversation on Intellectual Property and Frontier Technologies will examine the economic protentional of AI and understand the importance of issues faced by the inventors and IP offices to which can provide the best support to AI innovation. The WIPO Conversation on IP and Frontier Technologies is the premier international event for fostering dialogue, knowledge-sharing, and the development of expertise among all stakeholders on the impact of frontier technologies, particularly artificial intelligence, on Property. The online exhibition, "WIPO: AI and IP, A Virtual Experience" held from September 2020 to March 2021 sought to foster a wider understanding of the relationship between IP Policy and AI and focused on examples of the use of AI in art, music, technology and entertainment.

### Understanding Artificial Intelligence

*"The rise of the machines is here, but they do not come as conquerors, they come as creators."*  
(Andres Guadamuz)

Firstly, we need to understand from where the Artificial Intelligence came into existence from. Warren McCulloch and Walter Pits completed the initial work that is now regarded as Artificial Intelligence, AI in 1943. They suggested an *artificial neuron model*.

Donald Hebb (1949) demonstrated an updating algorithm for altering the strength of connections between neurons. This rule is known as the *Hebbian learning*.

In the year 1950, Alan Turing, an English mathematician, pioneered machine learning. Alan Turing released "Computing Machines and Intelligence", which includes a test proposal. Hence the turning test was created "To determine whether a machine can exhibit intelligent behaviour that is comparable to human intellect, a Turing test can be employed" [9].

Allen Newell and Herbert A. Simon built the "first artificial intelligence programme", Logic Theorist. This software verified 38 of 52 Mathematical theorems, as well as discovering new and more elegant proofs for several of them.

Artificial intelligence is used by the automated machines that can read, mine and learn from the present data in a way that they can imitate cognitive behaviours which are traditionally performed by humans. The foundation of artificial intelligence is the notion that human mental processes may be duplicated and automated. Machine in simple terms can be stated as a device which is created to ease the burden of a man and perform the task at a faster pace. Technological advancements have lead machinery capable of learning and performing some tasks on their own without human interference [10]. Artificial intelligence is a tool used in computer programs where the machines think intelligently in the same way that humans do. AI was created after evaluating the human brain and its process, its response methods, sense the understanding of perception, emotions thoughts and the cognitive process which leads to development of the software available in the system. The term Artificial Intelligence was coined by John McCarthy where the first conference was held [11].

In 1969, first general purpose robot was built called Shakey it was able to do things with a purpose and not with a list of instructions. Supercomputer *Deep Blue* was designed in 1997 and defeated the world champion chess player in a match. In 2002, the first operable vacuum cleaner was created. Between 2004 and 2020, voice recognition, smart electronics for homes, robotic process which is automatic (RPA), and related to algorithm which can predict the RNA sequences which is faster than the other methods were invented by the AI [12].

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**Definitions of AI**

1. 'Artificial intelligence is the creation of making machines intelligent and intelligence is the quality that allows an entity to function appropriately and predictably in its environment' [13].
2. 'Artificial intelligence applies advanced analysis and logic-based techniques, including machine learning, to interpret events, support and automate decisions, and take actions' [14].
3. A branch of computer science dealing with the simulation of intelligent behaviour in computers. Or the capability of a machine to imitate intelligent human behaviour [15].

As a result, any machinery that can work without human intervention can be referred to as a machine. The term machine can be used instead of computer. Natural language processing, sentiment categorization, detection and facial recognition, risk assessment, and fraud detection are all examples of cognitive technologies. AI could be used in the manufacturing sector to deliver real-time data for supply chain monitoring and real-time notifications for industrial processes.

**Copyright Law Provisions**

According to WIPO, Copyright (or author's right) is a legal phrase that describes creators' rights to their literary and artistic works.

Intellectual property rights (IPR) can be defined as rights given to people who have created original works of authors which are in artistic, literary, technical, or scientific work in the fields of patent, copyrights, trademark, geographical indication and so on.

*Section 2(d) Indian Copyright Act* defines who falls under the category of an author, it states that the if the work is related to literature or drama, then the author would have final say, the author of a musical composition, the composer. Because the person who takes the artistic work, such as a photograph, is its creator, Indian copyright laws would forbid the creation of works produced by AI.

*Section 2(ffa) of the Indian Copyright Act* "In the context of a musical composition, "composer" refers to the person who composes the music, irrespective of whether he records it in any form of graphical notation."

Artificial intelligence is a new policy development emphasis area in India. An overarching trend continues in India and several other jurisdictions: the limitations and risks of data-driven decisions remain as retrospective considerations for the development and deployment of AI applications. The current policy processes aim to promote the rapid development of AI for economic growth and social good.

"In India, on Constitution Day, 26th November 2019, the Hon'ble President of India introduced the Preeminent Court Vidhik Anuvaad Software, abbreviated as 'SUVAS'. SUVAS is a machine-helped interpretation instrument produced by Artificial Intelligence. This tool is specifically designed for the judicial domain and currently has the limitation and capacity of interpreting English Judicial reports, Orders, or Judgments into nine vernacular languages contents and vice versa. This is the first step toward presenting Artificial Intelligence in the judicial domain [16].

*Section 101 of the Copyright Law of the United States of America* has a wider definition of the owner of the copyright. It states that the "Copyright Owner, while referring to exclusive rights contained in a copyright, refers to the owner of that specific right", whereas the same section defines a computer program defines a computer program as: a "computer programme" is statements or instructions that can be utilised in a computer to obtain a certain outcome. This definition has not used the only means that someone has particular rights in relation to copyrights. An "anonymous work" is one for which no natural person is identified as the author on the copies or phonorecords [17].

The US Copyright Office recently ruled that an AI algorithm cannot copyright a work of art. The court stated that any art made by an AI lacked "human authorship", which is required for copyright protection.

This was stated when a piece of art called "A Recent Entry to Paradise", which depicts near-death and afterlife experiences. Creativity Machine, an AI algorithm created by Dr. Stephen Thaler, created the sequence of images and narratives. Thaler is the President and CEO of Imagination Engines, Inc., and is widely regarded as an artificial intelligence pioneer [18].

### **United Kingdom**

Section 9 of The Copyright, Designs and Patents Act 1988 states that author means the person who has created some copyright work under this Act. Work is defined under Section 1 of the aforementioned Act in relation to work for which copyright exists [19].

Copyright rules make the creator of a work the sole owner of that work, giving them the exclusive right to sell or duplicate their concept. The author of the work can assert these rights under Section 9 of the Copyright, Designs and Patents Act 1988 ('CDPA,' which defines an author as the person who "produced" the work. This work could be literary (e.g., a book or script), entrepreneurial (e.g., a film or sound recording), or any other production specified in the Act. According to the Act, "the author must be considered to be the person by whom the arrangements necessary for the creation of the work are done" in the case of computer-generated literary works. The criteria for protecting different types of copyright works vary. Entrepreneurial works, for example, have no requirement for originality, whereas literary works are required to be "original" under Section 1 of the CDPA [20].

*Under Korean law*, author of the copyrightable work is stated as someone who creates a work as mentioned in section 1 of the act explained as *a creative production that expresses human thoughts and emotions* [21]. "The copyrightable work is the creative production that expresses human thoughts and emotions" is defined as a copyrightable work. In other words, a work must meet three independent conditions in order to be protected by Korean copyright law. To begin, a work must be "creative", which implies it must be unique and not a copy of someone else's work. Second, human thoughts and emotions must be "expressed". An idea alone does not constitute a work with copyright. Finally, a work must express "human feelings and thoughts" [22].

The issue which arises and is usually highlighted over whether AI-generated works are copyrightable, specifically whether AI-generated works truly mirror "human thoughts and emotions". Although it can appear to have them, AI is fundamentally devoid of human thoughts and emotions. There was a fairly similar issue in the United States, which has a copyright legislation similar to Korea's, where the copyright status of monkey selfies was contested. The United States Supreme Court held that such work is not protected by copyright. It is also widely recognised in the Korean legal community that a work is not copyrightable if it was not created by humans. Artificial intelligence-generated works would be in the public domain if they were not copyrightable.

### **Judgement Pronouncement Related to Copyright and Artificial Intelligence**

*Naruto v. Slater*, [23]: British photographer David Slater, on July 2011, visited a national park on the Indonesian island of North Sulawesi. He followed a group of monkeys there in the intention of photographing them. He was attempting to click a close-up of a monkey's face using a wide-angle lens, but the monkeys were clearly shy and would not let him get too close. He clicked a couple shots but did not get the shot he wanted. He said that once the monkeys expressed interest in the equipment, he put up his camera on a tripod and took a few pictures. Their initial images were not very good. He claims that after doing so, he altered the camera's settings, which led to the appearance of a certain monkey. He claims that the monkeys were curious about the equipment and took a few pictures as he set up his camera on a tripod. Their first photos were of poor quality. He claims to have changed the camera

settings after that, and that one monkey in particular was drawn to the lens's reflection. The monkey then began photographing himself. Yet, unlike a monkey-generated work, AI-created works require a more rigorous assessment. AI, unlike monkeys, is formed using machine learning or "deep learning" technology and is based on a massive human-created base.

*Zaletel v. Prisma Labs* [24]: The plaintiff had a "Prizmia" photo editing programme on his phone. The plaintiff alleged trademark infringement based on the defendant's "Prisma" photo-editing tool. The court addressed the competitiveness and overlap criteria when considering the Third Circuit's risk of confusion elements. "Although plaintiff broadly portrays both apps as providing photo filtering apps, the record reveals that defendant's app analyses photos using artificial intelligence technology and subsequently redraws the photos in a chosen artistic manner, resulting in machine generated art", the court concluded. Given these significant functional distinctions, it comes to reason that the two goods are aimed at different audiences.

*Sevatec, Inc. v. Ayyar* [25]: The court stated that issues such as data analytics, artificial intelligence, and machine learning are sophisticated enough that expert testimony is appropriate and beneficial, and that such testimony does not infringe on the jury's jurisdiction.

### ***Burrow-Giles Lithographic Co. v. Sarony***

It was stated that when the photographer sued for a copyright violation, the Court stressed that it was much more important for the photographer's originality, intellectual production, notion, and conception of the idea to be proven, as the photographer demonstrated in the case of patent rights. Closer study revealed that the photograph was a one-of-a-kind piece of art, the outcome of the photographer's intellectual innovation, qualifying it to be protected by the Constitution, which said that Congress should grant the photographer exclusive rights of use, publishing, and sale [26].

*Aerotek, Inc. v. Boyd* [27]: The court explicitly stated that courts may one day have to decide whether machine learning and artificial intelligence resulted in software changing itself and introducing an arbitration clause after the fact.

### ***Alfred Bell & Co. v. Catalda Fine Arts***

The court decided a gentler approach to granting copyrights. The Court ruled that the work must not be totally reproduced or plundered from previous masterful works in order to be considered unique. The court even ruled that every unintended variation might be claimed as the creators. As a result of this judgement, it is now possible to ensure the copyright of the yield developed using the AI framework as long as it is not replicated. This eliminates the uncertainty around the awarding of insurance to AI framework works. However, the lack of a firm position has an impact on the holders' privilege as well [28].

## **Artificial Intelligence and Ethics**

IP regulations are designed to protect society from immoral inventions. The effects of immoral technologies will lead to social turmoil, discord, and instability in human, animal, and plant existence. These laws must be defined at the junction of AI and IP in order to identify AI inventions that do not merit IP protection. To begin with, there is always the risk of delegating too much authority to a small group of inventors linked with the AI discovery in terms of intellectual property. One option is to provide a shorter patent period to compensate for potential IP rights abuse. Then there is the issue of how a search engine should use AI algorithms.

Artificial Intelligence can lead to certain ethical issues [29], which are:

- *Unemployment*: The hierarchy of labour is largely concerned with automation. When we develop methods to automate tasks, we may be able to free up space for individuals to take on more sophisticated roles, shifting from the physical labour that dominated the pre-industrial world to

the cognitive labour that characterises strategic and administrative work in our globalised society. Elon Musk of Tesla has introduced automatic vehicles which may result in lower chance of accidents, self-driving trucks appear to be an ethical decision. The same thing might happen to office workers, as well as the rest of the global workforce, but it may also result in zero employment opportunities.

- *Inequality and wealth created by machines:* Economy, is founded on remuneration for contributions to the system which is frequently measured using an hourly pay. The majority of firms still rely on hourly labour when it comes to goods and services. By utilising artificial intelligence, companies can substantially reduce its reliance on the human workforce, resulting in fewer people receiving revenue. As a result, those with ownership in AI-driven enterprises will make all of the money, but will be of disadvantage for humans.
- *Human behaviour and interaction:* AI bots (like ChatGPT) are getting better with modelling conversations like human beings. Robots are able to activate the reward centres in the human brain, which may also lead to unsocial behaviour for some humans and dependability towards machines.
- *Security: AI safe from adversaries:* The more powerful technology becomes, concerns to security also increases. The robots which are designed to replace human soldiers or autonomous weaponry, but also for AI systems that might do harm if misused. These battles will not be waged solely on battle field but the cyber security has to also become more crucial. This can happen because a system which orders is of a faster magnitude and is more competent than us.

## CONCLUSIONS AND RECOMMENDATIONS

The absence of copyright laws for AI-produced works will likely cause harm to Artificial intelligence-generated works. These works are indistinguishable from human-created works. With the evolution of AI technology, creative works can be produced quickly and readily, necessitating considerable thought and consideration over whether copyright protection for AI-made works is genuinely necessary.

The present liability standards do not account for scenarios in which an AI causes a violation. In such cases, it must be made clear who will be held accountable and how accountability will be measured. All of these challenges must be approached with caution. One of the most essential aims of the laws is to stimulate innovation, science, and technology. Artificial intelligence is rapidly evolving. In the case of AI, patent law must be adaptable in nature and strive for economic and societal good.

The impact of IP Laws on AI development industry, and society will be significant, given the rapid growth of AI technology, key parties such as IP specialists and academics must engage in discussions to identify how the copyright and patent system might support innovation.

Also, appropriate measures must be in place to stop any unfavourable social and moral consequences. The existing copyright eligible subject requirement must be carefully evaluated to determine whether it has a materially negative impact on AI or AI-driven inventions. If this is the case, the authors must consider what changes to the rule could have been made in order to achieve the basic aims of the copyright law.

As a result, the authors conclude that AI is a product of human intelligence. Any additional AI production may only be deemed the result of a human intelligence tool, i.e., artificial intelligence. IPRs must vest in the original author, not any intermediary intellect. The IPRs must vest with the original author rather than any intermediate technology, such as artificial intelligence, because vesting IPRs on AI-infused computers will result in an infinite chain of rights.

Some recommendations which can be kept in mind are:

- Firstly, whenever some innovations are created, the role of AI should be recognised.

- Secondly, in order to create inventions, IPRs must be classified according to AI.
- IPs must be kept up to date with technological advancements that accommodate new technology.

The WIPO communication is an important platform that provides to streamline IP legal criteria with the intricate character of entirely AI-based inventions.

Certain suggestions were made by United Kingdom in WIPO [30], which looked promising were:

- To make no legal changes and not to recognise the Artificial Intelligence in Intellectual Property.
- The inventor of AI-generated inventions should be attributed to the humans responsible for devising them.
- It was suggested that the patent applications should be created to identify AI as an inventor.
- AI devised inventions should be protected through new laws or amendments.

The current Copyright law overlaps with AI-based inventions and does not provide any legal remedy for work produced by an AI. There were various issues developed in terms of disclosure, infringement, identity of inventor and proprietor, and copyright legal guidelines. Traditional intellectual property legal standards are insufficient to address these concerns. The current legal norms are no longer capable of keeping up with the expanding number of intricate and diverse completely AI-based creations.

Currently, in the absence of a laws on the subject on Artificial Intelligence, it is expected that legal and financial norms will be established sooner rather than later, which will not just drive the advancement of AI but also ensure that the necessary safeguards are in place.

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