



Copyright Protection and Artificial Intelligence: Challenges in the Digital Era

Mukta Verma, Ph.D., Faculty of Law
University of Allahabad, Prayagraj, Uttar Pradesh, INDIA

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Author

Mukta Verma, Ph.D.

E-mail : mktverma6@gmail.com

shodhsamagam1@gmail.com

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ABSTRACT

Copyright laws are meant to protect the rights of people who create artistic, literary, architectural, and dramatic works. However, with the rise of artificial intelligence (AI) and the internet, machines are now also making artistic works. AI is created to imitate human thinking by analysing data and making choices with skills like identifying faces and recognizing voices. The question of who owns the copyright for work made by AI is a topic of debate. The copyright law does not address this issue, as it was made to guard works that involve human input. Traditional copyright rules do not apply to works made by machines. As technology continues to grow, lawmakers should think about changing copyright laws to offer strong legal protections for AI-made works. Since AI-generated works are becoming more frequent, it is important to tackle the issue of copyright ownership. In the case of works made by AI, the creator of the AI program may claim ownership, but this isn't always true. The AI program might create works that are completely original and not intended by its programmer. In such situations, the ownership of the work could be challenged. Some experts have proposed that the AI itself should own the work it makes. This would need a big change in how we understand copyright ownership, but it might be necessary to make sure that AI-generated works are not overly restricted. In short, the question of who holds the copyright for a work created by AI is a complicated issue that needs careful consideration. Lawmakers should aim to create legal rules that consider the special nature of AI-generated works and ensure that creators, programmers and AI systems themselves are all rightly rewarded for their roles in these works.

KEY WORDS

Artificial Intelligence, Copyright, Digital, Intellectual Property, Technology.

INTRODUCTION

Artificial Intelligence (AI) has become very popular in today's tech world. With rapid progress in this area, it's only a matter of time before these systems create amazing inventions without any help from humans. As per the Britannica, AI is the ability of a digital computer or computer-controlled robot to carry out tasks usually done by smart beings. The growth of AI has resulted in the creation of non-human entities that produce scientific, artistic, and industrial work that can be safeguarded as intellectual property (IP). AI is a mechanical system that gathers knowledge and information, processes the intelligence of the universe, and organizes, explains, and shares it to the right people as useful intelligence. The field of AI is closely connected to the area of Intellectual Property Rights. Recent changes in AI have sparked a competition among the top tech companies around the world to seek legal protection through the current IP legal system. The fast growth in AI technology is directly affecting the current IPR legal system, with no way to ignore it. With each stage of development in technology, AI keeps changing how we engage with the world.

The field of AI is closely connected to the area of Intellectual Property Rights. Recent changes in AI have sparked a competition among the top tech companies for legal protection through the existing IPR legal system. The fast growth in AI technology is directly affecting the current IPR legal system, leaving no way to ignore it. Every development phase in technology has significantly influenced and shaped human civilization, culture and the economy. We can say that today's new technologies are shaping the human world at a much quicker and deeper pace.

The connection between human society and technology has provided great opportunities for growth and many solutions for people in different areas; however, it has also brought new complexities and challenges. Right now, the world is enjoying the success of a unique technology like AI to explore its many possibilities to benefit the society. Today, the most valuable asset is the human mind, which includes intelligence and creativity. To protect this intelligence and creativity, the need for developing Intellectual Property Law has emerged.

Artificial Intelligence and Intellectual Property

Intellectual property can be explained as a type of idea or virtual item created from someone's mental abilities. For instance, an author creates a book by writing. A painter makes a picture, and an engineer develops a plan; these are their intellectual property. In short, anything created by a person's thoughts, like a book, a picture, a song, a melody, a design or a product, is that person's intellectual property made from their mind and skills. AI is currently linked to many aspects of human growth, new creations and innovations. On the other hand, the IPR system also focuses on the rules and support regarding these same areas. Therefore, the two systems are closely connected.

Francis Gurry, the former Director General of WIPO at Global Assemblies, shared his thoughts on the different effects of developing AI in relation to IPR law and its current rules in the future worldwide. He mentioned that "AI will have huge technological, economic, and social impacts and will change how we make and share goods and services, as well as how we work and live." In recent years, AI-driven successful innovations are becoming increasingly noticeable in creative areas of society, like art, literature, music and design.

Artificial Intelligence in Copyright Enforcement

Artificial intelligence (AI) technologies, including content identification programs and machine learning models, offer potential for automating tasks related to copyright enforcement, like finding copied content and sending take-down requests. AI has also created a challenge in the art world. Using generative adversarial

networks where neural networks create and assess each other's work until the final piece is ready, researchers from Facebook's AI lab and Rutgers University have made an AI that can produce art. The neural networks learn by examining hundreds of paintings; they can even determine which artworks humans find exceptional and have been fine-tuned to create art in specific styles, like Rococo or Cubism. With these AI tools, users could choose themes and styles for custom content, allowing them to access material whenever they want. The AI would then generate new pieces for them, and since it wouldn't have the same time limits as human creators, it could potentially produce an almost endless amount of works.

Copyright laws must be carefully thought out in this situation. A user might want to hear something "similar" if they like a piece, and the AI should be able to create a new version that meets their requests without copying directly. So, how should ownership of music made by AI be managed? We need to consider the purpose behind copyright laws. Generally, copyright aims to provide rewards to creative people in the form of exclusive rights. In countries with *droit auteur*, copyright also shows a strong link to the identity of the creator. Looking back at our music AI, there is a wide range of musical possibilities that most users may never fully discover.

Furthermore, some users may be more likely and skilled at engaging with the system in a more creative manner, leading to truly unique results. How can we equip these users with the tools they need to invest their time and energy into this and share their creative results with others? Does the person who built this AI have any rights? What would the impact of creating new rights or keeping things the same have on the market for works made by humans and/or AI? As our look into copyright law shows, new technology is changing long-standing practices. The distant future described above suggests that we need to thoroughly rethink this topic.

As AI creates works that are increasingly like those traditionally made by humans, companies will inevitably claim that the products of these machines should be protected by copyright and considered their property. We caution against this trend, but we also acknowledge that some form of protection may be necessary. Even scholars who doubt applying copyright protection to AI outputs agree that if a machine can, for instance, create interesting stories that attract paying readers, it makes sense for the maker, owner, or operator of that machine to seek to protect that value through copyright law, along with technical safeguards and contracts.

Blockchain Technology for Copyright Protection

Blockchain technology provides decentralized and unchangeable ways to record and confirm copyright ownership, improving openness and responsibility in copyright management. Blockchain is being used in copyright protection with a lightweight, cost-effective, and efficient system for protecting copyright. We are currently in the testing phase of the system described in this article, and we aim to keep improving it. The study of blockchain technology is still just beginning. It is expected that as research goes on, blockchain technology will achieve even more significant progress in copyright protection and other areas.

Blockchain needs to be updated to reflect court decisions and government authority; otherwise, it could become a problem for the state instead of a partner. On the other hand, the main quality of this technology that builds trust is the unchangeability of blockchain records. Therefore, finding the right balance between these factors will not be easy. Additionally, the results will affect how attractive this system is to both users and copyright holders. Network effects require the involvement of both parties for any copyright management system, including blockchain-based ones, to work. Ultimately, several legal issues must be tackled to turn the promises of blockchain technology in copyright into reality. These include the status of smart contracts and cryptocurrencies, as well as changes to copyright laws that ensure the necessary protections for people using information from blockchain systems and allow these systems to function. Clearly, there are many challenges to resolve, but if they are addressed and blockchain-based solutions succeed in proving their effectiveness in copyright matters, copyright law could experience a major change.

Challenges in the Digital Era

The digital revolution has created new challenges for the usual copyright laws. The simple ability to copy and share digital content has caused a lot of illegal copying and violations, requiring changes in legal rules and enforcement methods. Two common types of copying are source-code copying and general plagiarism, which has seven subcategories. Over roughly 24 years, methods and tools to find plagiarism have been developed; the newer tools are more thorough. Most of these tools work online with a website and an internet connection; some are free, while others require a subscription. A review was done on the most commonly used dataset for checking plagiarism. Finally, the tough parts of using plagiarism detectors were talked about, as well as the most common kinds of plagiarism.

One key factor in reducing plagiarism is researchers' understanding of plagiarism and detection software. Therefore, it is important for researchers to know about plagiarism and the tools available to spot it. This study found that researchers usually have good knowledge, especially about using anti-plagiarism methods. This suggests that a key factor that greatly affects researchers' actions to prevent plagiarism is how well they understand plagiarism in general and detection systems specifically.

Regulatory and Technical Approach towards Digital Copyright Challenges

In response to the problems caused by digital copyright theft, lawmakers and legislative groups have started various policy actions and legal changes aimed at improving copyright enforcement and protecting intellectual property in the digital age. These efforts include different strategies, such as creating new copyright laws, changing current laws and international agreements to tackle copyright issues that cross borders.

One important part of these policies is updating copyright laws to match the realities of the digital world. This involves making clear what copyright protection includes for digital creations, creating ways to deal with online piracy, violations and aligning copyright rules across different regions to support international cooperation and enforcement. For instance, the Digital Millennium Copyright Act (DMCA) in the US introduced measures to fight internet copyright violations, like the notice-and-takedown system and rules against bypassing technological protection measures. In addition, lawmakers are working to find a balance between enforcing copyright and encouraging access to information and cultural expression through adding and limiting copyright laws. These exceptions include rules for fair use/fair dealing, allowing the use of copyrighted material for critique, commentary, education, and research without needing permission from rights holders.

Alongside regulatory actions, industry players have put in place various strategies to tackle digital copyright issues and safeguard their intellectual property rights. Content creators, distributors and copyright holders have adopted a wide range of approaches, including strong enforcement actions, technical solutions and collaboration with others. One tactic used by industry players is employing digital rights management (DRM) systems to control access to and use of copyrighted digital content. DRM technologies use encryption and access controls to prevent illegal copying, sharing and changing of digital files, thus protecting the rights of content creators and consumers. However, DRM systems have faced criticism for potentially limiting legitimate uses of copyrighted works and making it hard for different platforms and devices to work together.

Additionally, industry players have created strategies to encourage legal alternatives to piracy, such as providing affordable and easy-to-access digital content through licensed streaming services, online stores, and subscription platforms. Furthermore, collaboration and partnerships within the industry have been essential in fighting digital copyright theft. Content creators, distributors, internet service providers (ISPs), and tech companies have formed groups and coalitions to create best practices, share resources and work together to combat online piracy. These joint efforts include setting up industry-specific anti-piracy organizations, voluntary agreements among stakeholders, and public-private partnerships to collectively address digital copyright challenges.

Technological improvements have also played an important part in solving digital copyright issues by improving content management and digital rights management (DRM) systems. Content identification technologies, like fingerprinting and watermarking, allow rights holders to track and check how their copyrighted works are used on digital platforms and find cases of copyright violation. Also, progress in artificial intelligence (AI) and machine learning has made it easier to automatically find and take down infringing content from online platforms through content recognition and analysis. Moreover, new blockchain technologies could change copyright management and licensing by offering decentralized, clear and secure systems for recording and tracking digital transactions and ownership rights. Blockchain-based solutions provide possible advantages like better transparency, traceability and efficiency in copyright management, along with increased security and trust in digital transactions.

CONCLUSION

The growth of AI in the last ten years and its major impact on today's society should not be ignored. Considering the potential and wide use of AI in various areas in India, it is important to conduct a compatibility test and analysis to understand how well the current connection between Intellectual Property Rights (IPR) and AIs works together. This will help support the use of AIs in the future. First, we should highlight some challenges currently faced by this connection. Leading experts in technology and law need to create legal protections that safeguard employers' IP from the dangers of AI.

The law should require that secure AI is developed alongside functional AI to monitor and/or penalize AI that threatens IP. It should also demand that companies put measures in place to reduce risks related to using, selling, transferring, and programming AI. Creators supported by AI may also become important players in the Patent and Copyright field, seeking and demanding fair and adequate IPR protections. Therefore, we can say that amidst the positive developments in AI, there are emerging unclear areas that challenge the basic principles of the IPR system, such as "Inventor, Author/Creator, Composer," etc. There is a pressing need to revisit and update these fundamental ideas of IPR and, if necessary, redefine them to make them suitable for the works and innovations created by AI technologies in the future.

If the goal of copyright is to protect the expression of an idea through work, then it wouldn't be fair to give authorship to computer programmers for the hard work they put into developing the AI. It would be appropriate for them to hold authorship for the computer program of the AI, but wrong to attribute authorship to them for works produced by the AI without their creative and intellectual involvement. The issue of copyright ownership in AI systems arises when they are sold. The question is whether the copyright goes to the creator or the buyer. In places like England and New Zealand, copyright for works created by AI is given to the programmer through legal fiction, which benefits the owner. A possible legal answer to this issue is to broaden the definition of copyright to include works generated by computers that do not have a human author.

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