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CYBERSECURITY AND ITS ROLE IN PROTECTION OF IP AND DATA PRIVACY IN THE AI ERA

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ABSTRACT

In the contemporary digital landscape, cybersecurity plays a crucial role in protecting intellectual property (IP) and ensuring data privacy. The advent of Artificial Intelligence (AI) technologies has transformed numerous industries, bringing unprecedented advancements but also introducing new vulnerabilities. This paper examines the essential role of cybersecurity in safeguarding IP and maintaining data privacy amidst these technological shifts. As AI systems process and store vast amounts of sensitive information, they become attractive targets for cyberattacks, risking the exposure and misuse of proprietary and personal data. Implementing robust cybersecurity measures, such as advanced encryption techniques, multi-factor authentication, and continuous monitoring, is vital to counter these threats. Furthermore, leveraging AI within cybersecurity frameworks will enhance threat detection and response through predictive analytics and real-time monitoring. The research will further delve into the necessity for a proactive and integrated cybersecurity strategy to protect valuable data and intellectual assets in the AI-driven era, ensuring a secure and resilient digital environment.

Keywords: AI Technologies, Cybersecurity, Data Privacy, Intellectual Property (IP), Security Frameworks

INTRODUCTION

The rise of computers and the Internet has significantly increased the importance of Intellectual Property Rights (IPR), particularly in e-commerce. However, this reliance on Information and Communications Technology (ICTs) has led to difficulties in policing Intellectual Property (IP) violations in cyberspace. The challenge lies in protecting IP online and preventing others from using it without permission. Cyberspace's anonymity and ease of access make IP violations more common online than offline. Unauthorized use of trademarks, logos, graphic, audio, or literary

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works constitutes IP infringement. New forms of infringement, such as deep hyperlinking, framing, meta-tags, spamming, and digital copyright infringement, have evolved.[2]

Cybersecurity plays a crucial role in protecting IP and ensuring data privacy. As AI technologies evolve, they bring about transformative capabilities but also introduce new vulnerabilities. Cyber threats such as espionage, insider breaches, and reverse engineering target proprietary AI models and datasets, making robust cybersecurity measures essential. These measures include encryption, stringent access controls, and continuous monitoring to safeguard IP effectively. IP protection is a global issue aimed at safeguarding the creative efforts of authors and recognizing their pioneering spirit. Due to the lack of oversight and legal constraints on the internet, treaties and conventions are necessary to harmonize global IP laws. National laws have played a crucial role in strengthening IPR.[3]

The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), Convention for the Protection of Literary and Artistic Works (Bern), Hague Agreement for the Deposit of International Designs, Madrid Agreement for the International Registration of Trademarks, and the Patent Cooperation Treaty are internationally recognized treaties that protect IP. The TRIPS Agreement, first created in 1994, requires member states to adhere to the most-favored-nation approach. However, the protection of IPR has not kept pace with national laws harmonization and has not established standard protection criteria across different regimes. Articles 10 and 11 of the TRIPS Agreement address computer programs and data compilations, while Article 11 addresses writers' rights to permit or prohibit commercially renting their intellectual works. Trademark law protects traditional brands, while copyright law provides extensive protection[4] for sound recordings, literary themes, and cinematic works.[3]

VIOLATION OF TRADEMARKS AND DOMAINS IN CYBERSPACE

Section 2(zb) of the Trademark Act, 1999 defines a trademark as a visually presented mark that makes products or services easily identifiable and distinguishable. Its primary purpose is to increase value, maintain brand awareness, and provide a unique selling point. A trademark allows customers, clients, partners, and business owners to communicate, find, and purchase associated goods and services. A domain is an Internet Service Provider (ISP), similar to a street address for a website. It is a series of numbers that can be entered into a computer browser, similar to a phone number. With the internet and letter-number tracking system, accessing websites has become easier, with domains enabling universal access to the web's content.[5]

The Trademark Bill aimed to establish a legal framework for registering, protecting, and preventing counterfeiting of goods and services. However, trademark holders often acquire domain names that are confusingly close to their trademarks, as the Internet Corporation for Assigned Names and Numbers (ICANN) assigns domain names on a first-come, first-served basis. This can lead to the creation of domain names with trademark information, but the owner does not have authority over the trademark owner or the brand itself. Cybersquatting occurs when domain names are identical to genuine trademarks belonging to third parties, posing a risk to the trademark holder's reputation. Reverse domain name hijacking occurs when domain holder relinquishes control to the trademark holder due to fear of costly litigation and legal proceedings. Large corporations and organizations often engage in reverse cybersquatting, while smaller businesses and individuals are the victims. Meta tags, similar to brief labels on clothing, can reveal a website's quality and brand. Originally designed to help

2 IPTSE, https://iptse.com/intellectual-property-in-cyberspace/ (last visited May 9, 2024).

3 C. S. Somu, *Intellectual Property Rights in Cyberspace: Paradigm*, 10(1) PARADIGM 62 (2006).

4 *Id.*

5 S. R. Bhat, *Innovation and Intellectual Property Rights Law—An Overview of the Indian Law*, 30(1) IIMB MGMT. REV. 51 (2018).

search engines classify websites, they are now being used to manipulate search engine results and steal the goodwill of legitimate businesses.

COPYRIGHT INFRINGEMENT

Copyright infringements are prosecuted in India under section 63 of the Copyright Act, 1957. The Napster Case is one of the most well-known instances of violations of digital copyright. In this case, the defendants sued the plaintiff for P2P file sharing, and the plaintiff eventually lost the case. Thanks to the software that Napster has made available to its users, those users are now able to exchange songs and other types of media files (such as MP3s) that are saved on their personal computers with other users of Napster. Since the lawsuit was first filed, the music firms have been demanding a payment of one million United States dollars for every copyrighted song downloaded over Napster. In the year 2000, the parties reached an agreement that resulted in the dissolution of Napster Inc. As part of the settlement, Napster agreed to pay the parties involved one-third of any future earnings.[6]

Software is likewise protected under copyright legislation.[7]The Copyright Act of 1957 defines computer programs, tables, and compilations as "literary works," including computer databases. However, the security of business methods remains uncertain. In the 21st century, the internet and the world wide web have made access to information easier, posing new problems for copyright enforcement online. IP rights are increasingly important in the fast-paced media, communications, and technology industries. The scale and variety of IPR violations are expanding with the development of network and internet technologies. As the internet is essential to modern life, resolving copyright concerns is not a viable choice. Copyright laws have evolved in response to new technologies, but they also pose potential damage to those who benefit from the creation, distribution, and consumption of creative works[8]. Infringement of IPR is a widespread problem in the digital realm, affecting a broad variety of digital products. To prevent unauthorized duplication and distribution, copyright holders have instituted technological protections like the Electronic Copyright Management System (ECMS).[9]

PATENT INFRINGEMENT

Infringing on a patent occurs when someone acts illegally concerning a patented invention without the permission of the patent holder. A license is the standard form of authorization. While the precise elements of patent infringement vary from country to country, it often requires making commercial use of the protected technology[10]. Patent law protects the innovations which have an impact on computers and are thus subject to cyber law. Penalties for infringing on the patents of others were established by the Patent Act of 1970.[8] It makes this behaviour illegal and specifies a maximum sentence of two years in prison. Infringement of IPR confidentiality requirements is likewise punishable under Section 118.[11] Individuals who make an unwarranted patent claim are subject to a fine of one hundred thousand rupees under Section 120 of the Patent Law Act.[9]

It is common knowledge that every computer-related invention that has any kind of useful function is patentable. While software innovations are often not protected by patent law, medical equipment such as pacemakers are. Only when computer software significantly advances an art form can it be patented. A patent for the same software may be obtained if it improves the speed

6 *Supra* note 2.

7 *Supra* note 3.

8 K. Zaidi, *IPR Issues in Cyberspace*, IP Bulletin, https://ipbulletin.in/ipr-issues-cyberspace/ (last visited May 9, 2024).

9 *Id.*

10 S. K. Verma, *Patent Infringement and Enforcement in India*, 45 J. Indian L. Rev. 321, 329 (2018).

11 Patent Act, 1970, § 118.

and efficiency of the original. A few software patents are as follows:

- Program algorithms
- Program language translations
- Menu arrangements
- OS functions
- Editing functions and interface features
- Display presentations

Online stock trading, online gambling, e-commerce, etc., all have patent protection in the United States. The Indian Patent Law does not have a clause addressing software protection. Adherence to any standards by Indian Patent Office is very minimal. A patent may be issued even though computer programming languages and software are not patentable if the software in question has a particularly novel or useful purpose and applied to a hardware.[12] Today, the patent registration process in India has been advanced to a great extent, yet many aspects here at question remains unanswered. The possibility that the patent holder would misuse the monopoly power that has been given to him is acknowledged by the affirmative defense provided. Any patent that has been shown to have been abused is ought to be null and void. When a patent owner engages in any of these unlawful activities violating antitrust laws or inappropriately broadening the scope of the patent to benefit from the same this is called patent abuse[13]. Until the parties can settle their differences, the patent at issue should be rendered unenforceable. When the patent's original owner seeks to profit from the invention by engaging in further licensing agreements, for instance, this is considered an abuse of the patent. This is a case of a patent being used in a way other than what it was intended for by the inventor.

Apple V. Samsung

The patent infringement litigation between Apple and Samsung[14], which lasted seven years, involved Apple alleging that Samsung replicated its smartphone's features, including zooming in and out, and home screen design. The American legal system successfully settled the lawsuit, which had already been filed in over 50 jurisdictions worldwide. Apple warned Samsung in 2010 about developing software identical to its own, and the following year, it brought it to action. Samsung claimed Apple had stolen its patents, but the jury found it in favor of Apple and ordered Samsung to pay almost $1 billion. After a revised trial jury found both corporations were at fault for the same patent violation, the two sides settled out of court. The Supreme Court ultimately ruled against the petition in 2018, stating that the patent violation involved only a fraction of the device. Samsung was fined over $540 billion for replicating Apple's features. Conventions like the Berne Convention, OECD Convention on Data Protection, and WIPO Performance and Phonograms pact have established rules to protect IPR, but current laws are insufficient to combat the exponential growth of cybercrime.

EMERGING TECHNOLOGIES AND INTELLECTUAL PROPERTY: CHALLENGES AND OPPORTUNITIES

The integration of AI and Blockchain has significantly impacted IPR landscapes. AI algorithms can generate creative works autonomously, raising questions about authorship and ownership. Blockchain, a decentralized and tamper-resistant ledger technology, offers transparent and secure ways to record and manage IP assets, reducing counterfeiting risk. Smart contracts automate IP transactions, ensuring fair compensation for creators and reducing intermediaries.[15] The challenge lies in determining

12 V. V. Rao, *The Evolution of Patent Registration Processes in India*, 18 Indian J. Intell. Prop. L. 123, 128 (2020).

13 Herbert Hovenkamp, *Patent Misuse and Antitrust Reform*, 4 Harv. J.L. & Tech. 123, 130 (1991).

14 Apple Inc. v. Samsung Elecs. Co. - 786 F.3d 983 (Fed. Cir. 2015)

15 Ryan Abbott, *I Think, Therefore I Invent: Creative Computers and the Future of Patent Law*, 57 B.C. L. Rev. 1079, 1082 (2016).

the extent to which AI systems should be recognized as inventors or creators. The constantly evolving content development environment presents both challenges and opportunities for IPRs.[16] This study aims to investigate the significant difficulties and possible solutions associated with IPR in content development.

Challenges:

i. **The Rise of AI-Generated Content:** It is becoming increasingly difficult to differentiate between authorship and ownership as the level of sophistication of AI continues to increase. This is because AI gives machines the ability to develop material that is increasingly complex and original. It is difficult for legal frameworks to keep up with the rapid improvements in AI, which has led to questions over the ownership of work generated by AI and the most efficient ways to protect it.

ii. **Phantomization and Content Sharing:** Even though digital platforms make it easier to share content, they can sometimes make the problem of copyright infringement much worse. It can be challenging for creators to monitor and prevent the illegal use of their work, which can result in potential financial losses and a decrease in the value of their creations.[17]

iii. **Data Ownership and Privacy Concerns:** There have been new issues raised regarding privacy as a result of the collection and utilisation of personal data in the development of content. A substantial amount of deliberation is required to reach a harmonious equilibrium between the prerogatives of users to protect their privacy and the prerogatives of producers to utilise data for customisation and financial advantage.[18]

iv. **Borderless Infringement and Enforcement:** It is difficult to enforce IPRs due to the fact that different jurisdictions have varied legal systems and enforcement standards. This is because the internet is accessible all over the world. This creates opportunities for violations and hinders the ability of producers to protect their work on a worldwide scale. It also creates the possibility of violations.[19]

v. **Balancing Innovation and Protection:** When it comes to protecting existing content while also encouraging innovation, it is of the utmost importance to create a happy medium. A lack of suitable safeguards can deter innovators from investing in their original ideas, while too severe IPR systems have the potential to stifle innovation.[20]

Opportunities:

i. **Collaborative Ownership Models:** The investigation of alternative ownership arrangements for content generated by AI should be carried out. These structures might potentially include authors, developers, and even the AI system itself. This may encourage cooperation and ensure

16 Primavera De Filippi & Aaron Wright, Blockchain and the Law: The Rule of Code 79–80 (Harvard University Press 2018).

17 Eaton, J., Trends in Advertising: How the Rise in Artificial Intelligence May Influence the Field of Content Strategy, (Doctoral dissertation, East Tennessee State University).

18 Shirin Srinivas & Hui Liang, Being Digital to Being Vulnerable: Does Digital Transformation Allure a Data Breach? 1 J. Elec. Bus. & Digital Econ. 111, 137 (2022).

19 Leong, S. H., & Saw, C. L, Copyright Infringement in a Borderless World–Does Territoriality Matter?, International Journal of Law and Information Technology, 15(1), 38-53.

20 Bhat, S. R., Innovation and intellectual property rights law—an overview of the Indian law. IIMB Management Review, 30(1), 51-61.

that rights and advantages are distributed equitably.[21]

ii. **Leveraging Technology for Rights Management:** The utilisation of blockchain technology, in conjunction with other cutting-edge tools, can be utilised to automate the process of awarding licences, streamline the collection of royalties, and monitor the utilisation of material. The management of rights is simplified, and artists are given more control as a result.[22]

iii. **Data Governance Frameworks:** Through the implementation of data governance frameworks that are both explicit and easily understandable, it is possible to effectively handle privacy issues, which in turn enables producers to utilise data responsibly while also protecting user rights.[23]

iv. **Harmonization of International IPR Laws:** The effort to standardise IPR legislation on a global scale may result in the establishment of a more equitable competitive environment, the simplification of the enforcement of IPR across international borders, and the protection of creators all over the world.[24]

v. **Open Access and Fair Use Flexibilities:** By examining alternate licencing models such as open access and flexible fair use regulations, it is possible to achieve a balance between compensating creators and providing broader public access to knowledge and cultural expression.[25]

SECURING TOMORROW'S GENERATIVE AI VIA IP PROTECTION

Generative AI (GenAI) has the potential to create material that resembles human thinking through non-human intelligence. Software applications like OpenAI's ChatGPT/GPT-4 and Google's BARD were trained using extensive datasets and powerful computer resources. This has raised concerns about copyright infringement, privacy breaches, and potential instances of libel and defamation. The use of user-provided data, including data created by minors, to train software by firms raises concerns about copyright infringement and the vulnerability of young individuals. The extent to which corporations can claim the Copyright Act's 'fair use' exemption is also being scrutinized. This essay explores the implications of these cases in India, particularly in relation to the Digital Personal Data Protection Act of 2023.[26]

Data has become the most valuable resource of the 21st century, akin to oil. Every day, we produce data, and the inappropriate use of this data by AI developers has often faced criticism. Firstly, the AI developers have faced criticism for engaging in unauthorized "web scraping," which involves collecting consumers' data without their knowledge. OpenAI is accused of collecting more than 300 billion words from the internet, which includes various sources such as articles, websites, books, and blogs. This collection allegedly includes personal information taken without the users' knowledge. The purpose of this data collection was to train the software. The courts have acknowledged data as a kind of 'property' in the US.

21 Scott Matheson, Access Versus Ownership: A Changing Model of Intellectual Property, in *Law Library Collection Development in the Digital Age* 153–76 (Routledge, 2018).

22 S. R. Bhat, Innovation and Intellectual Property Rights Law—An Overview of the Indian Law, 30 IIMB Mgmt. Rev. 51, 61 (2018).

23 Shirin Srinivas & Hui Liang, Being Digital to Being Vulnerable: Does Digital Transformation Allure a Data Breach? 1 J. Elec. Bus. & Digital Econ. 111, 137 (2022).

24 Anthony J. Stack, "International Patent Law: Cooperation, Harmonization, and an Institutional Analysis of WIPO and the WTO," in *Edward Elgar Publishing* (2011).

25 Niva Elkin-Koren & Orit Fischman-Afori, Rulifying Fair Use, 59 Ariz. L. Rev. 161 (2017).

26 Nishith Desai Associates, https://www.nishithdesai.com/NewsDetails/10818, (last visited on May 09, 2024).

Consequently, scraping data gives rise to accusations of data misappropriation and theft. Furthermore, even when we share a photo or any other information online for public viewing, such as on our blog or social media profile, we still have a justifiable expectation of safeguarding the confidentiality and integrity of our data. The Supreme Court, in the case of *KS Puttaswamy v. Union of India*,[27] acknowledged the right to privacy as an aspect of Article 21 of the Constitution. Unauthorized use of our data for AI software training without explicit authorization constitutes a breach of trust and an infringement on our privacy.

Furthermore, the data produced by children and their concerns around privacy are distinct and independent. They are more susceptible to abuse, prejudice, and exploitation. Regrettably, AI lacks adequate mechanisms to protect minors from accessing its online platform. The "Children's Online Privacy Protection Act" (COPPA) in the US prohibits the monitoring, collection, or use of data from children without obtaining proper authorization from their parents or guardians. Regrettably, India lacks such regulations, relying only on self-reporting as the sole verification means, which proves ineffective.[23]

Furthermore, AI software has shown the capability to generate erroneous or imprecise paragraphs when prompted to reference a particular author's work, such as a poem. This erroneous outcome leads to the dissemination of incorrect information to the general public while also impeding the moral rights of writers by distorting their creations. The next part will explain how the courts are now dealing with these problems, guiding the future development of copyright law.[28]

OpenAI asserts that the data provided for AI training and execution is protected under the fair- use exemption. Public reading or recitation of appropriate passages from a published literary or dramatic work in a digital setting, duplication of a work for research purposes, and other fair uses are all explicitly protected under Section 52 of India's Copyright Act, 1957. Similarly, the US Jurisprudence determines fair usage based on the following four factors:

Firstly, the aim and nature of the use, whether for commercial or educational purposes. In the case of *Campbell v. Acuff Rose Music*,[29] the Court determined that the level of protection would be enhanced if the work was considered "transformative," meaning it exceeded the original production or introduced new elements rather than just being "expressive."

Secondly, the extent to which the fraction is utilized relates to the copyrighted work. OpenAI asserts that although the training material is not publicly disclosed, they do make the newly created content accessible based on that material. Consequently, they assert that the program is revolutionary.[30]

Thirdly, the impact of the utilization on the pertinent market or the worth of the product inside the pertinent market. OpenAI asserts that by allowing robots to absorb the dataset without displaying it to people, the authors may avoid losing any possible audience. Nevertheless, the New York Times, among others, is contemplating legal action against OpenAI due to the AI technology significantly reducing the need to visit the publisher's website.

Fourthly, in addition, the decision also entails an examination of the inherent characteristics of the copyrighted work. In the case of *Andy Warhol v. Goldsmith*,[31] the court determined that if the secondary work

27 22 AIR 2017 SC 4161

28 Lindberg, V., Building and Using Generative Models under US Copyright Law." Rutgers Bus. LJ, 18, p.1 (2022).

29 Jdsupra, https://www.jdsupra.com/legalnews/generative-artificial-intelligence-data-4578397/ (last visited on May 09, 2024).

30 510 U.S. 569 (1994).

31 Supreme Court of the United States, https://www.supremecourt.gov/opinions/22pdf/21- 869_87ad.pdf (last visited on May 09, 2024).

serves the same or very similar function and is utilized for commercial purposes, it becomes more difficult to argue for fair use unless there are strong justifications.

INDIAN JURISPRUDENCE ON GEN AI – PAST, PRESENT AND THE FUTURE

The US Copyright Office only acknowledges works produced by individuals as eligible for legal safeguarding. The original ownership is granted to the work's creator, and copyright protection has been withheld from non-human writers. In India, a similar situation arises. According to Section 2(d) of the Copyright Act, 1957, an "author" in the context of computer- produced work is defined as any "person" who is responsible for the generation of the work. Section 13 mandates that the work must be deemed "original."

Nevertheless, the Act does not provide a specific definition for the term "original." The Indian Copyright Office has been indecisive over the extension of protection to material created by AI. Before this, a withdrawal notice was made in which AI and a human collaborator were listed as co-authors.

The 161st Parliamentary Standing Committee Report concluded that the Copyright Act of 1957 is inadequate in enabling authorship and ownership by AI. Section 16 of the Act explicitly states that copyright protection is not available to any individual unless they comply with the criteria outlined in this Act. Nevertheless, the report proposed the expansion of 'patent protection' to include AI-generated works to stimulate innovation, research, and development. We propose expanding this line of thinking to include copyright protection for work created by AI. This would promote innovation and improve the quality of AI-generated expressions.[32][27]

Section 12 of India's Digital Personal Data Protection Act, 2023, enacted on August 11th, 2023, establishes the "right to be forgotten." It requires the deletion of the user's data at their request.

This may be a simple tool for eliminating copyrighted content that violates IPR. Nevertheless, practical considerations emerge because once the AI program is taught on a particular data set, it cannot reverse its learning process. ChatGPT's opt-out feature for data gathering turns off the storage of conversation history. It signifies that previous data remains included in the training process, but only the recent information is excluded from being utilized for "training purposes." There is no mechanism available to delete the data that has been previously entered. This is particularly alarming since AI technologies are now being incorporated into several platforms, including web browsers, to provide real-time information with each click.

The Indian courts have taken strong measures to prevent the exploitation of AI techniques for copyright infringement. In *Anil Kapoor v. Simply Life India*,[33] the Court imposed an injunction prohibiting using AI to generate fraudulent, altered information, particularly for commercial reasons. Its objective was to safeguard the individual's rights pertaining to their individuality. In the case of *Mareta v. Google Inc.*,[34] the US District Court determined that measures taken to address copyright infringement and safeguard privacy should be interpreted comprehensively to include "new technologies." The Indian courts have also embraced this fundamental concept of fast change.

Nevertheless, the 161st Parliamentary Report has recommended a thorough revision of the provisions of the Copyright Act as a matter of utmost importance.

32 Swati Sharma, N.D., Guardians of Genius: Securing Tomorrow's Generative AI via Copyright Protection, India Corp. L. (2023), https://corporate.cyrilamarchandblogs.com/2023/10/guardians-of-genius-securing-tomorrows-generative-ai-via-copyright-protection/ (last accessed May 9, 2024).

33 CS(COMM) 652/2023

34 Case No. 15-CV-04062-LHK

EMERGING LEGAL ISSUES WITH USE OF GENERATIVE AI

Intellectual Property Rights

Under the Indian Copyright Act, 1957 ("Copyright Act"), copyright subsists in specific works,

> i. original literary, dramatic, musical, and artistic works, (ii) cinematograph films, and (iii) sound recordings. The Copyright Act grants owners such works certain exclusive rights in relation to such works[6]. It is important to check for potential infringement before utilizing or relying on the results of generative AI techniques. The issue of whether copyright exists in the results generated by the Gen AI program is an intriguing one.

Copyright in input and output

Copyright protection is limited to the actual manifestation of ideas, not abstract concepts. It is crucial to assess if copyright exists in the final expression or output in most circumstances. Creative literature, theatre, music, and artworks are protected, and plagiarism is prohibited. There is a dispute over whether using massive datasets without licensing results in output violating third-party copyright. Platforms like Open AI have implemented measures to protect their data from web crawlers, such as restricting access to Indian news publishers. The final output's status as an original work or a violation depends on the specific facts and circumstances of each instance. If the output closely replicates or strongly resembles the original work, it increases the potential for copyright infringement.

Authorship

The Copyright Act requires that there be an "author" of a work for copyright protections to apply. Unless otherwise specified in a written agreement (such as an assignment or commissioning agreement), the author is the original proprietor of the work. Any individual who causes the creation of a dramatic, musical, computer-generated literary, or artistic work is considered to be the "author" of such work for purposes of the Copyright Act. Contrary to popular belief, however, works made using generative AI technologies do not fall under the umbrella term "computer generated" within the terms of the Copyright Act. The issue of whether or not AI tools qualify as writers under the Copyright Act also arises. The terms of the Copyright Act and subsequent case law indicate that only natural people are considered creators of works under the Act.[35]

Recently, a court in the US investigated whether or not a piece of art created solely by a generative AI system would be protected by copyright law. The court agreed with the Copyright Office that there was insufficient evidence of human authorship to grant copyright registration to the work in question. The court ruled that copyrightability centered on human creativity, regardless of whether it was expressed via traditional or nontraditional means. The original foundation of copyright was that the work in question had to be the product of a human being's intellectual, artistic, or creative labour.

Some licensing agreements give the user full ownership of the final product, while others provide a restricted or non-commercial use license. Reuters recently sent a message to its journalists, warning them against using generative AI to produce news stories because it would make safeguarding Reuters' IP harder. The paper said that "some countries view AI-generated content as not copyrightable" and that this was a requirement of the terms of service for various technologies. The memorandum also seemed to leave editorial responsibility for generative AI-generated material on the shoulders of writers and reporters.

Personality Rights and Defamation

Personality and publicity rights in India are not codified in law but have developed via case precedent. The right of publicity protects an individual's image, looks, voice, signature, and other traits from being used commercially without

35 Ryan Abbott & Elizabeth Rothman, *Disrupting Creativity: Copyright Law in the Age of Generative Artificial Intelligence*, 75 Fla. L. Rev. 1141 (2023).

their consent. Infringement of personality rights may occur when such characteristics are used for commercial advantage without permission, for example, to give the impression of the celebrity's support when none exists. Generative AI systems have been widely utilized to generate works based on celebrities. Midjourney has recently been used to make photos of Bollywood actors dressed as Barbie, while ChatGPT has been used to create music, including Rihanna covering a song by Beyonce.

Deepfake music has also been created by recreating a singer's voice to perform the work of another musician, living or dead. Google and Meta, among others, are investigating the possibility of licensing artists' voices for AI-generated songs from record companies in return for royalties.[36] Personality rights claims can arise if commercial use of works imitating a celebrity's likeness or implying endorsement can lead to defamation. Famous individuals may file a defamation case if they believe their image has been used inappropriately or to their detriment.

Decision-making, Bias, Prejudice, and Stereotypes

The application of human judgment to Gen AI results raises the question of whether humans can fully hand over decision-making in certain public activities and professions to AI systems. Generative AI technologies may provide biased results, especially if trained on incorrect or defective data sets. For example, face recognition programs trained on one racial group may not recognize people of other races, reinforcing prejudice and stereotyping based on race or gender. Workday, a US-based software company that uses AI for HR decision-making, is currently facing a case in a district court, alleging that the AI system promotes bias in hiring against individuals with disabilities, certain racial groups, and those over 40. Companies using AI to make personnel choices should be aware of these concerns and use technologies that promote openness and accountability in the decision-making process.

Generation of Unlawful Content

Generative AI technologies are increasingly being used to create illegal content, such as false news, misinformation, and deepfakes. Despite the need for human review, Reuters' document recommends journalists to ensure that AI-generated results meet quality, accuracy, and reliability standards. It also recommends double-checking information for accuracy, bias, and typos before publishing. The responsibility of human inputters or platform or tool creators for such material is an open topic. In India, intermediaries, or passive carriers of content, are afforded protection or "safe harbor" from responsibility for such material if they meet specific requirements. The Indian government plans to divide intermediaries into categories with corresponding duties under the Digital India Act, with generative AI tools potentially constituting a distinct subset of intermediaries subject to their regulations under the Digital India Act.

CONCLUSION AND SUGGESTIONS

The digital age has brought about transformative changes in how IP is created, distributed, and consumed. As this research has shown, these shifts have introduced new challenges but also opportunities for strengthening IPR protection and fostering innovation. Adapting IPR frameworks to the digital landscape is crucial for promoting creativity, safeguarding creators' rights, and ensuring the sustainability of creative industries. One of the central issues explored is the impact of emerging technologies like AI and blockchain on IPR. AI-generated content raises complex questions about authorship, ownership, and the very nature of creativity. As AI systems become more advanced, determining the extent to which they should be recognized as inventors or creators will be an ongoing legal and philosophical debate. Collaborative ownership models that involve AI developers, users, and the systems

36 Insider, https://www.insider.com/rihanna-ai-cuff-it- cover-legal-nightmare-music-industry-2023-4 (last visited May 09, 2024).

themselves could offer a path forward, ensuring fair distribution of rights and benefits. Blockchain technology, with its decentralized, transparent, and immutable ledger, presents promising applications for IPR management. Smart contracts can automate licensing, royalty collection, and usage monitoring, empowering creators and reducing intermediaries. However, the successful integration of blockchain into IPR systems will require robust governance frameworks and stakeholder collaboration.

The challenges posed by online content sharing and the borderless nature of digital infringement underscore the need for international harmonization of IPR laws. Divergent legal systems and enforcement standards across jurisdictions create loopholes for infringers and hinder creators' ability to protect their works globally. Efforts toward aligning IPR legislation could level the playing field, simplify cross-border enforcement, and provide consistent protection for innovators worldwide. Moreover, striking the right balance between protecting existing content and encouraging innovation remains a delicate equilibrium. While robust IPR safeguards incentivize creators to invest in original ideas, overly restrictive regimes could stifle creativity and impede the free flow of knowledge. Exploring alternative licensing models, such as open access and flexible fair use provisions, could help reconcile these competing interests, fostering a vibrant and diverse creative ecosystem. As digital platforms continue to evolve, addressing data ownership and privacy concerns will be paramount. Transparent data governance frameworks that respect user rights while enabling responsible data utilization by content creators could pave the way for personalized, engaging experiences without compromising individual privacy. Looking ahead, the future of IPR in the digital age will undoubtedly involve further integration of cutting-edge technologies. Leveraging advanced tools for rights management, content tracking, and infringement detection could streamline IPR administration and enforcement. However, such technological solutions must be complemented by robust legal and regulatory frameworks that adapt to the ever-changing digital landscape.

Ultimately, navigating the complexities of IPR in the digital age will require a collaborative, multi-stakeholder approach. Policymakers, legal experts, technologists, and creators must work together to develop balanced solutions that protect IP while promoting innovation, creativity, and the dissemination of knowledge. By embracing the opportunities presented by emerging technologies and addressing the challenges head-on, we can foster an environment that upholds the value of IP while harnessing the transformative potential of the digital age. A multifaceted approach is needed to protect IP and data privacy in the AI landscape. This involves integrating advanced security technologies, complying with regulatory standards, and fostering ethical AI development. Such a comprehensive strategy is vital for leveraging AI's potential while mitigating associated risks.

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