THE ADVENT OF DEEPFAKE ARTIFICIAL INTELLIGENCE: A CONTEMPORARY TOOL FOR COPYRIGHT INFRINGEMENT

Arnav Dwivedi, BBA LLB (Hons.), Law College Dehradun, Uttaranchal University, Dehradun

D. Dr. Lakshmi Priya Vinjamuri, Associate Professor, Law College Dehradun, Uttaranchal University, Dehradun

ABSTRACT

The emergence of Deepfake Artificial Intelligence has introduced a novel danger to digital manipulation, posing issues to the field of intellectual property law. The technologies related to deepfake allow the production of audio-visual content of almost authentic quality using the Generative Adversarial Networks (GANs), hence creating a conundrum in the field of copyright legislation. This paper examines the influence of deepfake AI by first explaining the process of deepfake creation, then further going on to address concerns related to the grant of authorship and ownership for deepfake-created content. The initial portion of this research examines the creation of deepfake content and how it hinders and defies the concept of IPR, later on the authors have discussed about copyrightability of works generated by deepfake AI and have tried to identify the appropriate credit recipient—whether it be the programmer, the AI, or the individual issuing the prompts.

The conflict over assigning authorship and ownership rights to created material highlights the deficiencies in defenses, mostly owing to the emphasis on human-driven creative endeavours. This paper also investigates the potential misuse of deepfake technology via copyright infringement, wherein copyrighted works are modified or copied without authorization, resulting in considerable ambiguities and challenges in legal enforcement. It underscores deficiencies in the responsibility framework for deepfake content, particularly when reproduction harms reputation, identity, or is linked to deception. It examines the accountability of content authors, service providers, AI developers, and others on their active control over the risks associated with deepfakes.

The research, approached from a legal perspective, examines current

copyright protocols, judicial rulings, and developing international legal frameworks to evaluate reactions to deepfake AI.

Keywords: Deepfake, Artificial Intelligence, Authorship, Ownership, and Copyright Laws.

Introduction

Artificial Intelligence has led to a fundamental change in how Intellectual Property works, from the way creativity is approached right through to how it is protected and used. There used to be a clear distinction between authorship, ownership, and infringement, but the inclusion of AI into the industrial processes has blurred those distinctions with AI-composed music and literature and AI-designed inventions. Indeed, this new level of transformative business processes has helped accelerate innovation and optimized the effectiveness of creative processes while enabling brand new ways for humans and AI to work together. But there is a danger in this progress that must be understood and dealt with.

The possibility of deep thinking and ethical and legal issues arises from AI-managed IP works. AI systems are able to produce incredibly original works such as new literature or even new inventions, which leads to important questions about authorship. Who is required to assume responsibility, is it the person working on the AI guidance program, or is it the AI system that compiled the material? The question remains unanswered to this date. Many countries have implemented laws that are punitive in nature in regard to AI and its usage for the creation of unlawful and illicit content, but there is a lack of legislative measures in regard to the use of AI in the creation of IPR or its violation.

Through this research paper, the authors have tried to discuss this problem with a specific discussion related to the Copyright IP that is created using Deepfake technology. Deepfake technology threatens intellectual property rights (IPR) due to the alteration and manipulation of existing works to violate authorial rights in various ways. Deepfakes demolish the authorship and value of the audio, visual, or vocal works by producing ultra-realistic AI-generated replicas of them. This practice amounts to copyright infringement because these immoral actions are carried out without consent. Additionally, the moral rights of creators are violated as their works are tampered with without permission. The AI tool also has the capability to exacerbate current threats to nations and online civic cultures by fostering widespread suspicion and skepticism towards the majority of online resources. Additionally,

apart from copyright, deepfake content is capable of abusing trademarks and misleading audiences, thus changing the reputation the brand was built on. This sort of abuse proves the necessity of establishing IPR infringement legal powers in relation to deepfakes.

Deepfakes and Copyright

Copyright is a fundamental principle of information law.[1] Consequently, intellectual property law needs to provide a legal framework that optimally supports the information society while safeguarding fundamental rights and liberties.[2] The principal objective of copyright is to foster and enhance innovation, cultural diversity, technological progress, and freedom of speech. Consequently, a primary objective of copyright is to promote the evolution and distribution of diverse cultural expressions by permitting subsequent generations of authors to freely utilize the works of their predecessors.[3] Copyright comprises a collection of international principles, encompassing rationales and reasons, with a framework of standards codified in treaties, EU directives, national laws, and judicial precedents.

Artificial intelligence has advanced to the point that it can produce music, literature, and art without human intervention. As a result, AI has emerged as the most notable challenge in the ever-changing realm of copyright. Whereas technology enables the emergence of a new and distinct type of "authorship," it also poses new difficulties to copyright law.[4] AI, for that matter, stands out from previous advances in human history. All prior technical advances acted as tools in the hands of humans, whereas AI can self-learn and make intelligent decisions. At the time of the evolution of AI, there were limited tools present which most prominently included LLM-based models, which in themselves were huge threats to copyright but now due to the creation of Generative Adversarial Networks (GANs) which resulted in Deepfake technology has posed a threat which has never been expected in human history.

The traditional perspective posited that the creator of an original work would possess copyright ownership; however, the distinctive capabilities of Deepfake AI combined with LLM-based AI

[1] João Pedro Quintais, Copyright In The Age Of Online Access: Alternative Compensation Systems In Eu Copyright Law, 11, 12 (2017).
[2] Jack Balkin, Digital Speech and Democratic Culture: A Theory of Freedom of Expression for the Information Society, 79 N.Y.U. L. REV. 1 (2004).
[3] Paul Goldstein & Bernt Hugenholtz, International Copyright: Principles, Law, And Practice 4–5 Oxford Univ. Press (2013).
[4] Atif Aziz, Artificial Intelligence Produced Original Work: A New Approach to Copyright Protection and Ownership, 2 European Journal of Artificial Intelligence and Machine Learning 9 (2023).

models, alongside the lack of verification mechanisms, have rendered this a formidable challenge in the domain of intellectual property rights.[5] The major problem for such AI-generated work is who will be the owner/author of such generated work. There has been ongoing discourse among government officials, legislators, and the public over the rightful claimant of copyright and the methods of its protection. In early 2023, the U.S. Copyright Office began a procedure to solicit comment on copyright issues pertaining to generative AI. This included issues over the extent of copyright for works generated by AI technologies and the use of copyrighted sources in AI training.[6] Another key issue is in the scenario when the AI-generated work is malicious and immoral in nature. We now have ample examples that illustrate the capabilities of deepfake methods that lead to the extensive use of realistic synthetic films for cyberbullying, propaganda, and extortion. Notwithstanding these apprehensions, our understanding of the impacts of deepfakes in relation to textual misinformation and genuine utterances remains limited. Our understanding of how the insidious integration of deepfakes as "vox populi" on social media might enhance their influence is even more limited.[7]

The Authorship Issue

The Copyright Protection laws are founded on the notion of "authorship"; in the realm of the production of creative and literary works, the person who has demonstrated human ingenuity and expressed their views is considered the Author of the work by the law. Copyrights are a collection of specific rights that are only provided to such writers. These rights include the power to publish their work, enjoy financial advantages, transfer ownership of copyrights, and protect their reputation by preventing any activities that may harm it. The Berne Convention is a cornerstone in the field of copyright protection, providing a powerful demonstration of the concepts that underpin the authorship notion. This international convention assures that literary and creative works are protected on a global scale, with advantages extended to writers and their title heirs. Doing so gives writers the authority to claim their rights and protect their

[5] Mary Anne Franks, Understanding the Capabilities and Limitations of Artificial Intelligence in Creative Industries 15 Stanford Technology Law Review.
[6] Jie Ren et al., Copyright Protection in Generative AI: A Technical Perspective (2024).
[7] Michael Hameleers, Toni G.L.A. van der Meer & Tom Dobber, You Won't Believe What They Just Said! The Effects of Political Deepfakes Embedded as Vox Populi on Social Media, 8 Social Media and Society (2022).

creative works.[8]

The influence of new technologies has been completely transformed by the development of AI algorithms. These algorithms are now widespread and have an impact on many facets of life that go beyond their ability to forecast the future. Essentially, the dreams of the past have come true. Our perception of technical advancement and its significant impact on society has changed as a result of the revolutionary potential of AI algorithms.[9] With the development of Deepfake AI technology, the problems that were caused only by LLM models of AI have been enhanced. The most fascinating example of Deepfake technology is the creation of *"Portrait of Edmond de Belamy."* This art piece, created by AI, was the first to be sold for an astounding $432,500 at auction. This art was created using Deepfake AI, which was trained by "Obvious", a collective based in Paris whose members combine artificial intelligence and art using GAN technology.[10]

The above example of the *Portrait of Edmond de Belamy* was created by firstly training the Deepfake AI model by feeding 15,000 portraits of paintings that were created between the 14th century to 20th century, therefore at present it is impossible to create a deepfake creation without the first feeding of the original content, therefore raising the issue of copyright violation, the issue can be divided into two parts, firstly the violation done by the makes of new Deepfake AI tool/software as we know that an AI gives result based on the training that has been provided to it, what tends to happen that these make of the software train there AI models without getting a license, or consent of the author of the original work, many creators have complained about the same issue and there are several lawsuits pending all over the globe in respect to unauthorized usage of work to train AI models including deepfake.[11] The second group consists of content creators who use the Deepfake software and tools that are already available. They follow a very straightforward process that requires them to provide just two inputs: the original image, video, or voice, and the desired outcome. The software then automatically generates the

[8] Samuel Jacobs, The Effect of the 1886 Berne Convention on the U.S. Copyright System's Treatment of Moral Rights and Copyright Term, and Where That Leaves Us Today, 23 Michigan Telecommunications and Technology Law Review.

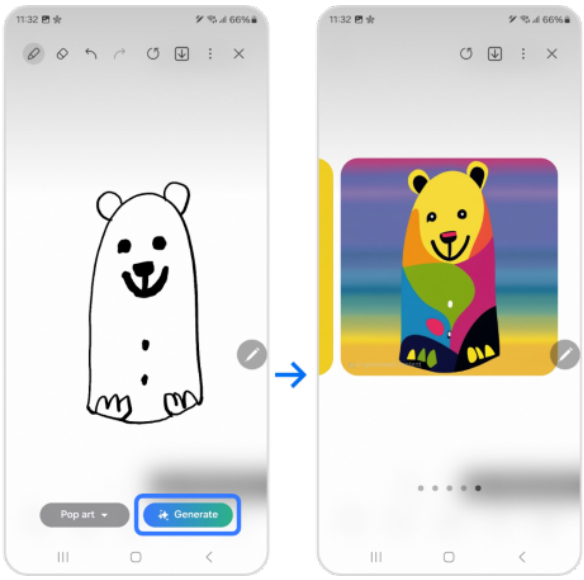
[9] Hafiz Gaffar & Saleh Albarashdi, Copyright Protection for AI-Generated Works: Exploring Originality and Ownership in a Digital Landscape, Asian Journal of International Law (2024).

[10] Eileen Kinsella, The First AI-Generated Portrait Ever Sold at Auction Shatters Expectations, Fetching $432,500—43 Times Its Estimate, Artnet (October 25, 2018), https://news.artnet.com/market/first-ever-artificial-intelligence-portrait-painting-sells-at-christies-1379902.

[11] Judge Herbert Dixon Jr, Artificial Intelligence versus Copyright Protections and Data Privacy, (2023),https://www.americanbar.org/groups/judicial/publications/judges_journal/2023/fall/artificial-intelligence-versus-copyright-protections-data-privacy/.

Deepfake. These designers go on to other software if the outcome is not satisfying, and there is now no scarcity of such software.

The latest application of Deepfake AI technology is the "Samsung AI" feature in the latest Samsung Galaxy smartphones, the Samsung AI feature allows various features like "Sketch to Image" wherein the user only sketches a very basic and minimalist sketch and the AI feature enhances it to look like a painting which can be seen below from the image reproduced from Samsung official website: -



(The above image shows how an unsophisticated and guileless drawing can be converted to a painting drawn by someone with advanced colour grading knowledge[12])

Now there has been a new development by Samsung, also known as *"MegaPortraits: One-shot Megapixel Neural Head Avatars."* This, according to Samsung, is "The first system capable of creating megapixel avatars from single portrait images. Our method outperforms its competitors in the quality of the cross-driving results and manages to preserve the high-resolution appearance of the source image even for out-of-domain examples like painting".[13]

[12] Using the S Pen for Sketching and Image Creation on Your Galaxy Device, Samsung (December 15, 2024), https://www.samsung.com/ae/support/mobile-devices/using-the-s-pen-for-sketching-and-image-creation-on-your-galaxy-device/#:~:text=Using%20the%20S%20Pen%20for%20Sketching%20and%20Image%20Creation%20on%20Your%20Galaxy%20Device,-Last%20Update%20date&text=A%20new%20feature%20has%20been,that%20best%20fits%20your%20vision.

[13] Nikita Drobyshev et al., MegaPortraits: One-Shot Megapixel Neural Head Avatars, in MM 2022 - Proceedings of the 30th ACM International Conference on Multimedia 2663 (2022).

Although a marvelous achievement in the field of deepfake and AI, wherein high-quality and multiple deepfakes can be created using a single source image with the help of Samsung AI but the question of copyright remains unsolved. In the context of authorship, the conundrum is who would be the author, whether the software provider (like in the above case, Samsung) or the layman smartphone user who thinks he has created a celestial painting using the smartphone for which he has paid a premium amount.

The Ownership Conundrum

Apart from authorship, there is also much confusion around the concept of "Ownership" of an AI-generated work. As per the Indian Copyright Act, 1957 according to Section 2 (d)(vi)[14], an author is "in relation to any literary, dramatic, musical or artistic work which is computer-generated, the person who causes the work to be created" and when this section is read with section 17[15], which states "Subject to the provisions of this Act, the author of a work shall be the first owner of the copyright therein" we can summarize that in most cases the author is usually the owner of the copyright, but if the author assigns or transfers the copyright to another person, that person becomes the owner of the work and has economic rights over it, this is the "Ownership" concept in copyright law. However, this prior understanding fails to explain the ownership when it comes to AI-generated work, the most commonly accepted six options for such work are: -

1. The AI Program.[16]
2. The programmer/creator of the AI program.[18]
3. The user of the AI program.[18]
4. The Company that owns the AI program.[18]
5. Public Domain- Classify each AI-generated work that belongs to the public domain.[18]

[14] The Copyright Act, § 2(d)(vi), No. 14 of 1957, Act of Parliament 1957 (India) (hereinafter, Copyright Act).
[15] Copyright Act, § 17.
[16] Victor M Palace, What If Artificial Intelligence Wrote This? Artificial Intelligence and Copyright Law, https://scholarship.law.ufl.edu/flr/vol71/iss1/5.

All these options are discussed below:

A) The AI Program

Artificial intelligence (AI) systems are now exceptionally advanced and intelligent, with the ability to learn and produce responses without human interaction. However, in accordance with the law, they are not classified as *natural persons*. In essence, artificial intelligence (AI) can replicate certain operational functions of the human mind, but it lacks the ability to experience natural subjective awareness. Therein lies the issue with the ownership of the A.I. system, which produces creative content completely by itself. The various theories of IPR, including the economic, reward, and moral theory, also contradict by granting ownership to a non-natural person, i.e., an AI Programme.

But it has to be understood that granting copyright to AI system is not an impossible task as the conditions for granting copyright can be easily met by an AI system, firstly for copyright to be provided the work must be novel,[17] and the level of novelty for AI generated work is although low but is not zero, as AI system don't merely copy and paste content from existing works but their algorithm now allows them to create new content as well. Secondly, for copyright to be granted, it must be expressed on a tangible medium, which an AI system does; any work created by an AI system can be easily stored on an electronic medium, therefore, the criteria for an AI system to be granted copyright are fulfilled. Under the Indian Copyright Act, 1957, § 2 (d)[18] defines the concept of Author. If an AI has to be given copyright, then it must be classified as an Author, which would mean amending the section and adding (vii) sub-section, which would state:

"In relation to any literary, dramatic, musical or artistic work which is generated by using Artificial Intelligence, the Artificial Intelligence which was used for the creation of such work"

B) The Programmer/Creator of the AI System

A possible solution to the problem of determining copyright ownership in respect of works generated by AI could be attributing ownership to the programmer of the system. The rationale

[17] Burrow-Giles Lithographic Company v. Sarony, 111 U.S. 53 (1884)
[18] Copyright Act, § 2 (d).

is that the person who worked on the software is the one who designed it to allow the AI to operate. Nonetheless, there is a host of legal and philosophical problems with this idea.

To begin with, copyright law presumes that authorship rests with the person who puts together the original work. The person who builds the AI system in this case is a programmer. However, they do not decide what the final product is. Cutting-edge machine learning systems function independently and produce outputs by learning on their own. This is different from the standard understanding of human creativity, which involves the creator having a say on the ideas to be produced. In this respect, bestowing authorship on the programmer is comparable to bestowing a teacher with the copyright of a pupil's work simply because the pupil was taught.

Secondly, for advanced AI systems, ownership allocation is exceptionally tricky because multiple programmers deal with various components of the system. Since no single programmer has authority on the outcome of the AI, awarding authorship based on who contributed to the programming would be contrary to how copyright laws are implemented.

As it stands, copyright laws encompass created works emerging from the context of employment such as "works made for hire" where the employer, not the creator has the right, this idea can be used to grant the creator to be given the copyright as the copyright laws of most nation recognize the fact that the employer will be granted copyright for the works of its employee if the work is created during the course of employment. In the UK,[19] New Zealand,[20] and Ireland,[21] "Computer-generated" works are subject to special copyright ownership laws.[22] Works created by computers without a human creator are referred to as "computer-generated" works. "The person by whom the arrangements necessary for the creation of the work are undertaken"[23] is the owner of such works. This same approach can be used to classify the AI-generated work to the programmer/owner of the software. However, there is flaw with this structure as it applies to human-crafted works through computer software and not AI output. Therefore, while it is important to appreciate the contribution of the programmer, there is no simple solution for attributing direct legal ownership without contravening existing doctrines

[19] Copyright, Designs and Patents Act 1988, c. 48, § 9(3) (U.K.).
[20] Copyright Act of 1994, §5(2)(a) (N.Z.). 18.
[21] Copyright and Related Rights Act 2000, pt. II, ch. 2, § 21(f) (ActNo. 28/2000) (Ir.).
[22] Copyright and Related Rights Act 2000, pt.I, § 2 (Act. No. 28/2000) (Ir.); Copyright Act 1994, § 2 (N.Z.); Copyright, Designs and Patents Act 1988, c. 48, § 178 (U.K.).
[23] Copyright and Related Rights Act 2000, pt. II, ch. 2, § 21(f) (Act. No. 28/2000) (Ir.); Copyright Act 1994, § 5(2)(a) (N.Z.); Copyright, Designs and Patents Act 1988, c. 48, § 9(3) (U.K.).

of copyright. Striking that balance in the world of AI will require more comprehensive systems that deal with innovations, together with the rights to copy such works.

C) The User of the AI Programme

Another way to provide copyright is to provide copyright to the user who has used the AI Software; the primary logic behind this is that, regardless of whether AI is utilized, the first notion of invention comes from the user's mind. If we take painting as an example, the creator will have an idea of what the painting will be like, so instead of using paintbrushes, we now use painting apps with inbuilt AI features based on this concept, just like paintbrush apps purchased/downloaded by the user, so this is just like another tool, and copyright should be given to the user. However, there is a major flaw in this approach in the first place: a paintbrush is a tool that cannot act on its own, whereas A.I systems, such as deepfake, which is powered by the GAN algorithm and can make images and paintings, are capable of autonomous learning and creation.[24] In this situation, the user would be paid for creating something to which they did not contribute cognitively. Furthermore, the user may let the A.I. system run forever without providing any creative input, resulting in overcompensation or reward.[25]

D. The Company that owns the AI Programme

The fourth option is to transfer ownership rights to the owner or company/corporation that owns the A. I. system. The argument in support of this choice is based on the philosophy of the employee-employer relationship and the labor generated during employment. "Traditionally, the idea of "work made for hire" exists even in the Indian Copyright Act. Work for Hire" is defined in Section 17 of the Indian Copyrights Act of 1957[26] under the category of First Owner of the Copyright, which provides:

- According to Section 17(b) of the Copyright Act,[27] the initial owner of a work made by an author is the person who requested it, unless a formal agreement is present.

- According to Section 17(c),[28] if an author creates a work while working under a service or

[24] Paquette L, Artificial life imitating art imitating life: copyright ownership in AI-generated works, 33(2),183, Intellectual Property Journal,2021.
[25] Victor, *supra* note 18.
[26] Copyright Act, § 17.
[27] Copyright Act, § 17 (b).
[28] Copyright Act, § 17 (c).

apprenticeship contract, the employer owns the copyright unless the parties agree otherwise.

This method may be viable, but it has the potential to monopoly artificial intelligence-based algorithms in the hands of large firms with vast budgets. As a consequence, organizations may use cost-effective artificial intelligence systems to do tasks instead of genuine human artists. This is the exact antithesis of what copyright law seeks to preserve and instill. It also contradicts the public interest theory of copyright laws. As a result, granting exclusive rights to businesses that hold AI-based creative work would marginalize creativity and concentrate the process of creativity and originality in the hands of large corporations.

E. The Public Domain

Another option is to give open access to all AI-produced work to the public. The basic idea is that if the work is not original human authorship is impossible to grant; therefore, in lieu of public welfare, such works could be made open to the public under AI-produced work. The main disadvantage of this concept is that it goes against the incentive and labor paradigm of copyright laws. If the public owns the original work created by the AI system, there is little to no motivation or reward for programmers to code or investors to invest in AI-based technology.

Exploring Liability in the Absence of Clear Copyrights

A. Disinformation

As we have established, the grant of copyright to AI-produced works is still under the grey area therefore, it is of utmost importance to explore the liabilities of AI-produced work especially deepfakes which infringe the rights of people. Without explicit ownership, the question of accountability regarding the he-said-she-said deepfake disinformation attack becomes difficult. Take as an example, the viral fake video of a political leader making scandalous and false statements. There is ambiguity on who should answer for this; the creator of the AI tool, the creator of the model, or the social media site that streamed it. The absence of authorship measures helps these creators dodge the legal system. The spread of misleading information through deepfakes deteriorates the credibility of the media. It enables unscrupulous entities to either generate false information or alter real information to form a misleading narrative capable of changing public votes, elections, and even manipulating financial markets. Because

of unclear boundaries in copyright, media institutions are unable to take proactive measures against deepfakes.

The primary illustration of this is a news broadcast by Ukraine 24, a prominent Ukrainian television news network, which aired quixotic footage of Ukrainian President Zelenskyy asking his troops to surrender rather than battle for victory. President Zelenskyy appeared behind a podium with short-crop hair, a thin beard, an olive-green shirt, and presidential emblems in the background, a pattern common to his regular news conferences. Instead of his usual remarks encouraging Ukrainians to remain strong and detailing his armed forces' needs to the world, President Zelenskyy claimed that "being president was not so easy," that "it didn't work out," that "there is no tomorrow," and finally that "I advise you to lay down your arms and return to your families." It's not worth dying in this fight".[29] A chyron appeared at the bottom of the news program, announcing that Ukraine had surrendered.[30]

News organizations and social media platforms around the world rushed to investigate the footage, swiftly determining that this realistic film was not genuine. Instead, it was the most recent employment of Deepfake. The deepfake picture is shown below, and upon examination, it is evident that, except for the image quality, both photographs are almost indistinguishable, making it difficult for the public to differentiate between the authentic and deepfake images. The video was shown to the public during the ongoing conflict between Ukraine and Russia. Thus, ramifications of a deepfake-generated content may be devastating; hence, this instance exemplifies the dangerous and unethical use of this technology, which has the potential to disrupt international relations or impede a nation's democratic processes.

[29] Samantha Cole, Hacked News Channel and Deepfake of Zelenskyy Surrendering is Causing Chaos Online, VICE (Mar. 16, 2022 at 7:08 AM), https://www.vice.com/en/article/hacked-news-channel-and-deepfake-of-zelenskyy-surrendering-is-causing-chaos-online/.

[30] https://www.vice.com/en/article/93bmda/hacked-news-channel-and-deepfake-of-zelenskyy-surrendering-is-causing-chaos-online (providing a rare uncommented version of the entire video). While the entire, unaltered video is otherwise difficult to find due to being removed from social media sites or being flagged for false content, a transcript in Ukrainian of the purported remarks is available on the Way Back internet archive. WAYBACK MACH., https://web.archive.org/web/20220316142015/https://u24.ua/ (last visited Jul. 5, 2022)(Ukrainian-to-English translation provided via Google Translate).

[Side by Side image of the real and deepfake Zelensky video][31]

The difficulty of AI-enabled multimedia deception is mostly evolutionary, rather than revolutionary. The growth of easy-to-produce Deepfakes and associated material is merely a continuation of the false news difficulties that have plagued the globe throughout history, notably in the early years of the twenty-first century. AI democratizes and elevates the production of high-quality content. In many aspects, AI-enabled multimedia, such as false news, has the potential to have systemic effects on Western cultures that have hitherto been felt infrequently. Building democratic resilience and establishing norms surrounding information warfare are the most effective approaches to address the rise of AI-based false news and the current issue of misinformation, rather than relying just on regulations. Effective public pressure may be applied to technology and media businesses, which are key players in today's global information landscape. At the same time, governments must aggressively internalize the idea that foreign meddling is an inescapable fact of interstate warfare in the twenty-first century.

B. Pornographic Content

Although deepfakes, particularly those used to disseminate false information, undermine public confidence and present significant moral and legal issues, their exploitative and pornographic applications now garner far more attention. Clear guidelines for addressing the accusation of copyright infringement or justice through deepfake victimization of pornography have not been

[31] Bobby Allyn, Deepfake Video of Zelenskyy Could be 'Tip of the Iceberg' in Info War, Experts Warn, NPR (Mar. 16, 2022 at 8:26 PM), https://www.npr.org/2022/03/16/1087062648/deepfake-video-zelenskyy-experts-war-manipulation-ukraine-russia.

created by domestic or international legislation. One of the more disturbing applications of deepfake technology is the creation of pornographic material connected to real people's identities and faces without their permission. The unwanted gift of having their likeness added to pornographic recordings without their agreement is being given to people, frequently celebrities or even regular folks.

Since the depictions are new AI-generated visuals, these videos are not legally regarded as infringing any existing copyright because they were produced artificially. The victims are therefore unable to utilize copyright laws to remove the videos if they do not own the content. Unfortunately, the existing copyright system does not address synthetic content, which in most jurisdictions lacks any original copyrighted elements. Laws like this may be in place to safeguard people's privacy and prevent defamation, but they are never quick or adequate to stop the spread of such information. While the crimes that are so simple to hide by AI anonymity make it difficult for the criminals to be apprehended, the victims endure in silence.

Deepfake pornography has an impact on victims' lives in every way. In addition to violating victims' sexual privacy, deepfake pornography's permanence on the internet makes it difficult for them to obtain employment or even just use the internet without being harassed.[32] While a lot of research and media coverage on deepfakes has focused on the political ramifications and the resulting decline in public confidence in the government, deepfake pornography also poses a risk to the lives of its victims. In the personal realm, the same problems of extortion and blackmail that arise with deepfakes of prominent political leaders also exist [27].[33] The deepfake pornographic video of Indian journalist Rana Ayyub is one of the most well-known cases. Her phone was bombarded with violent messages from men who "proposed to her," "threatened to tear her clothes and drag her out of the country," sent her naked photos of themselves, and urged others "to gang-rape her." She was admitted to the hospital as a result of the anxiety the video and the incessant phone notifications caused. "This is a lot more intimidating than a physical threat," she stated. "This affects your thinking for a long time. And nothing could stop me from experiencing it once more."[34]

Therefore, when used for such illicit and obscene creations, the mental impact that a deepfake

[32] Henry Ajder Et Al., The State Of Deepfakes: Landscape, Threats, And Impact 6 (2019)
[33] Holly Kathleen Hall, Deepfake Videos: When Seeing Isn't Believing, 27 CATH. U. J.L.
[34] Rana Ayyub, the face of India's women journalists plagued by cyber-harassment, Reporter Without Borders (November 27, 2024), https://rsf.org/en/rana-ayyub-face-india-s-women-journalists-plagued-cyber-harassment.

can produce is also cathartic. The main reasons why there are so many illegal Deepfake websites and applications that are solely focused on producing pornographic content today are the absence of clear and strict laws, accountability issues, and the inability to identify the person to prosecute. We've all seen at least one deepfake kissing video, reel, TikTok, etc., where two random images are made to kiss each other. The makers target influencers, politicians, and celebrities, but nothing is done about it. The blatant invasion of privacy that a deepfake creates is currently unmanageable and will only get worse until the picture or application's developer is automatically granted copyright, at which point the image can be tracked. In addition, severe penal provisions should be introduced to prosecute the creator of such an image.

Conclusion

Deepfake technology's rapid growth threatens existing copyright regimes, raising significant concerns about authorship, ownership, and responsibility. The growing integration of AI into the creation of hyper-realistic synthetic content offers unprecedented challenges to intellectual property law. Traditional copyright ideas, which focus on human intellect and authorship, do not appear to allow for facial recognition algorithms. Because deepfakes are machine learning models injected with already existing data, the prospect of a clear human author is eliminated, resulting in a legal murky area. Without clear property rights, it is increasingly difficult to determine who will profit from protection or enforcement. This causes a lack of accountability, allowing deepfake black market producers to operate without discovery or limitation. The legal gap around AI-generated material not only violates real content creators, but also harms people to whom the content is directed. Furthermore, using failure to include likeness reproduction without authorization and alienation of one's image for marketing, in the face of present copyright systems that aim to protect original works, exposes previously protected persons to additional vulnerability.

Furthermore, present copyright regimes that are primarily concerned with protecting works fail to take into account likeness rights, leaving people vulnerable to abuse with little legal recourse. With the emergence of deepfake material, the absence of clear ownership restrictions makes pursuing copyright claims impossible, resulting in unjustified exploitation in a neglected zone. Aside from copyright, deepfakes pose hazards such as deception and misrepresentation, which are harmful to people, organizations, and society at large. Deepfake-generated articles, interviews, and speeches undermine the integrity of public discourse, spreading disinformation

and diverting confidence away from established media sources. At the same time, using deepfake technology for revenge pornography and fake explicit content is another form of privacy and dignity violation that should be concerning. Most of the time, victims are powerless since no original video is utilized, which means no film constrained by standard copyright rules exists, and so AI-generated content cannot be copyrighted. This legal vacuum provides victims with little options for justice and confines them in the privacy and defamation law route, which advances slowly and is extremely insufficient. Only a combination of clear legislative frameworks, technological protections, and cross-jurisdictional collaboration will enable society to adequately manage the many difficulties offered by deepfake technology.